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ANNUAL GROUNDWATER MONITORING REPORT - 2016 FORMER TIDEWATER FACILITY

**200 Taft Street
Pawtucket, Rhode Island**

January 18, 2017

GZA File No.: 05.0043654.00



PREPARED FOR:

Rhode Island

Department of Environmental Management (RIDEM)

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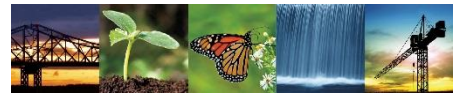
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January 18, 2017
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Via E-Mail and U.S. Mail

Mr. Joseph Martella
Rhode Island Department of Environmental Management (RIDEM)
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908

Re: 2016 Annual Groundwater Monitoring Report
Former Tidewater Facility
200 Taft Street
Pawtucket, Rhode Island
RIDEM Case No. 95-022 / Site Remediation File No. SR-26-0934

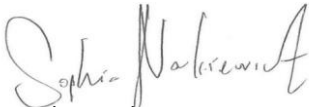
Dear Mr. Martella:

On behalf of The Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is presenting to the Rhode Island Department of Environmental Management (RIDEM) the attached 2016 *Annual Groundwater Monitoring Report*. This report describes groundwater monitoring activities performed at the above-referenced Site during the 2016 calendar year. These monitoring activities include quarterly groundwater elevation measurements, quarterly Non-Aqueous Phase Liquid (NAPL) gauging and recovery, annual groundwater sampling and analyses, and twice-monthly surface water observations.

Should you have any questions or comments regarding the information presented herein, please do not hesitate to contact the undersigned or Jesse Edmands from National Grid at (781) 907-3682.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.


Sophia Narkiewicz, P.E.
Assistant Project Manager


James J. Clark, P.E.
Senior Principal

Attachment: 2016 Annual Groundwater Monitoring Report

cc: Michele Leone, National Grid
Jesse Edmands, National Grid

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1.0 INTRODUCTION

On behalf of The Narragansett Electric Company, d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is providing this 2016 *Annual Groundwater Monitoring Report* for the former Tidewater facility located at 200 Taft Street at the terminus of Tidewater and Merry Streets in Pawtucket, Rhode Island ("the Site"). This report summarizes the following Site monitoring activities, which were performed in 2016 consistent with the July 2011 *Remedial Alternative Evaluation (RAE)* submitted to the Rhode Island Department of Environmental Management (RIDEM):

- Twice-monthly shoreline observations;
- Quarterly Non-Aqueous Phase Liquid (NAPL) gauging and recovery;
- Quarterly monitoring well elevation gauging; and
- Annual groundwater sampling and analyses.

The groundwater analytical results were compared to applicable and available Method 1 (or Method 2 as appropriate) Groundwater Objectives (GOs) as established in RIDEM's Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations, DEM-DSR-01-93, last amended November 2011). Portions of this report include information and data presented in reports prepared by Vanasse Hangen Brustlin, Inc. (VHB), on behalf of National Grid and Atlantic Environmental Services, Inc. (AES), on behalf of predecessors of National Grid and submitted to RIDEM.

This report is subject to the Limitations presented in Appendix A.

1.1 SITE DESCRIPTION

The Site is located at 200 Taft Street at the terminus of Tidewater Street and Merry Street in the City of Pawtucket, Rhode Island. A *Locus Map* is included on Figure 1. The Site was the location of the Tidewater Manufactured Gas Plant (MGP) and the Pawtucket No. 1 Power Station. It is now largely vacant with the exception of an active natural gas regulating station located on the northwest portion and the use of certain areas of the former Power Plant Area as an active switching station and electric substation. The Site is secured with a locked perimeter chain-link fence along the western, northern and southern sides. The Seekonk River borders the eastern side of the Site.

The Site is situated between Taft Street, an extension of Tidewater Street and Thornton Street to the west, the Seekonk River to the east, and consists of approximately 23 acres across seven separate lots. The majority of the Site is owned by National Grid and a small portion of the Site (part of the South Fill Area) is owned by the City of Pawtucket. As described in previous reports, the Site includes the following four areas, as shown on Figures 2A and 2B:

- North Fill Area (NFA) (northern portions of Assessors Plat (A.P.) 54B Lot 826) – Figure 2A;
- Former Gas Plant Area (FGPA) (southern portions of A.P. 54B Lot 826 and A.P. 65B Lot 662) - Figure 2A;
- Former Power Plant Area (FPPA) (A.P. 65B Lot 645) – Figure 2B; and
- South Fill Area (SFA) (A.P. 65B Lots 647 and 649, portions of Lot 648 and portions of A.P. 67B Lot 11) – Figure 2B.



1.2 SITE BACKGROUND

The former MGP operated from the 1880s until 1954 with peak shaving operations continuing until the late 1960s. The former MGP generated gas using the coal carbonization and carbureted water gas processes. Coal was used as the principal fuel to produce coal gas in the coal carbonization process, while coke (enriched with fuel oil) was used to produce carbureted water gas. In the later years of operation (1954 until the late 1960s), the MGP produced gas using oil and propane for peak shaving purposes.

Power plant operations were conducted for approximately 85 years, between sometime in the early 1890s, when construction of the power plant began, until the facility ceased operation in 1975. During this timeframe, the plant used coal and petroleum based products for electricity generation.

GZA prepared and submitted to RIDEM a January 2011 *Site Investigation Data Report* (SIDR) and a July 2011 RAE. These reports served to complete the *Site Investigation Report* (SIR) for the Site consistent with the requirements of Section 7.08 of the Remediation Regulations.

As described in the RAE, groundwater elevation and NAPL gauging and groundwater quality monitoring are anticipated to be part of the final remedy for this Site. The following sections describe shoreline observations, groundwater elevation and NAPL gauging/recovery and groundwater quality monitoring performed in 2016. As described further herein, the results of this 2016 monitoring were generally consistent with previous data and do not alter the information presented or recommendations made in the January 2011 SIDR or the July 2011 RAE.

2.0 **SHORELINE OBSERVATIONS**

The Site is visited on an at least a twice-monthly basis to perform a visual observation and record evidence of sheens along the shoreline. The shoreline of the Site is approximately 2,280 feet long and consists largely of manmade bulkheads. Certain portions of the shoreline, primarily the southern extents, consist of natural slopes to the adjacent Seekonk River. Between January 2016 and December 2016, localized sheens on the surface water have been intermittently observed in limited areas of the Seekonk River adjacent to the shoreline of the FGPA and the FPPA. Sheen observations have been limited to the following two general shoreline areas:

- an approximate 10-foot section of the southern shoreline portion of the FGPA near MW-326S and TB-12/MW-3 (refer to Figure 2A); and
- an approximate 10-foot section of the FPPA proximate to the 34-inch diameter Narragansett Bay Commission (NBC) Combined Sewer Outfall (CSO) near MW-103 (refer to Figure 2B).

Sheens observed in the FGPA near MW-326S and TB-12/MW-3 were bright to dull localized spots (less than approximately 2 feet in width) located between the shoreline and remnants of wooden sheet piling (associated with a former dock). Sheens observed in the FPPA proximate to the NBC CSO near MW-103 were bright to dull localized bands and spots (less than approximately 3 feet in diameter) located very close to the shoreline. Sheens at the Site have generally been observed at mid or low-tide. Consistent with previous years, sheen observations were limited in extent and occurrence and could be the result of the existing CSO and other drainage outfalls, subsurface impact or a combination of both.

Sheens observed during 2016 were generally consistent with those documented in the January 2011 SIDR, the July 2011 RAE and previous groundwater monitoring reports. There were no sheens observed proximate to MW-4 where the cap



was installed in 2009¹, the SFA or the bulkhead area proximate to the FPPA in 2016. For more detailed information on the shoreline inspection and sheen observations, refer to Table 1.

3.0 GROUNDWATER AND NAPL MONITORING PROGRAM

Consistent with the RAE, the 2016 monitoring program included gauging the entire monitoring well network for groundwater elevation and the presence of NAPL (total of sixty-six (66) wells) and analytical testing for volatile organic compounds (VOCs) at select monitoring wells. Monitoring well groundwater and NAPL elevation gauging and recovery was conducted on a quarterly basis in 2016 (January 21, 2016; April 30, 2016; July 20, 2016; and between October 31 & November 2, 2016). Twenty-seven (27) monitoring wells are included in the annual groundwater quality sampling round. As described further herein, due to lack of water in two wells, twenty-five (25) wells were sampled during the November 2016 groundwater sampling round (performed between November 1 and 2, 2016). All well locations are shown on the attached Figures 2A and 2B, *Exploration Location Plans*. Monitoring wells that were included in the November 2016 groundwater sampling round are highlighted on Figures 2A and 2B.

3.1 OBSERVATIONS OF NAPL

A comprehensive gauging round of the groundwater monitoring well network was completed during each of the quarterly monitoring events. Groundwater elevation and NAPL gauging data are included in Tables 2A and 2B, respectively, for the period from January 2016 through December 2016. A summary of wells exhibiting Light Non-Aqueous Phase Liquid (LNAPL) and Dense Non-Aqueous Phase Liquids (DNAPL) thicknesses since April 2009 is presented in Tables 2C and 2D, respectively. Figures 4A and 4B, *2016 Groundwater Analytical Data*, depict well locations where either measurable LNAPL or DNAPL were observed during the 2016 groundwater monitoring activities. As shown on these figures, wells exhibiting LNAPL were observed in the FGPA and FPPA and wells exhibiting DNAPL were observed in the FGPA and SFA. In general, and consistent with previous periods, observations of NAPL at the Tidewater Site are limited to certain discrete areas, as described below.

During the 2016 monitoring events, in certain wells where measurable levels of NAPL were present, an effort was made to recover NAPL and monitor its rate of return (if any). LNAPL and DNAPL recovery was performed using a peristaltic pump with dedicated tubing positioned below the top of the NAPL surface. The LNAPL and/or DNAPL was extracted from the well until groundwater was observed within the tubing, at which point the pump was deactivated. The recovery was then monitored with an ORS electronic oil/water interface probe. Tables 3A and 3B summarize the results of LNAPL and DNAPL recovery efforts, respectively. Consistent with previous years, GZA removed a total of approximately 11.25 gallons of NAPL/groundwater from five (5) wells (M&E MW-5, MW-210, MW-303, MW-312S and MW-341) in 2016. As described further in this section, NAPL recovery was not practical in certain wells due to the viscosity of the material. Recovered NAPL/groundwater was containerized in an appropriately labeled 55-gallon drum which was stored in a secure on-Site location prior to off-Site disposal.

In addition to the NAPL thicknesses shown in Tables 2C and 2D, evidence of sheen was observed on purge water from monitoring wells MW-312S, MW-326S, MW-339S, and MW-339D during the November 2016 groundwater sampling event. Purge waters generated from wells MW-310D, MW-312S, MW-326D, and MW-326S were observed to exhibit a fuel oil-like odor and purge waters from MW-339S and MW-339D were observed to exhibit a coal-tar like odor during the

¹ A shoreline cap was installed during 2009 in response to a sheen outbreak in this area. This work is documented in the February 2010 *Short Term Response Action Summary Report* which was prepared by GZA and submitted to the Department.



November 2016 groundwater sampling event. Refer to groundwater sampling logs in Appendix B for additional information.

LNAPL

During the 2016 quarterly gauging events, measurable levels of LNAPL (defined as equal to or greater than 0.01 feet) were detected in only six (6) of the sixty-six (66) monitoring wells gauged: as shown on Figures 4A and 4B, five (5) in the FGPA and one (1) in the FPPA. As presented in Table 2C, LNAPL thicknesses were limited and varied by well location. In the FGPA, MW-313S ranged from non-observed to 0.06 feet, MW-210 ranged from non-observed to 1.93 feet, MW-3 ranged from non-observed to 0.01 feet, MW-326S ranged from non-observed to 0.01 feet and MW-312S ranged from non-observed to 3.06 feet of LNAPL; and in the FPPA, M&E MW-5 ranged from non-observed to 2.95 feet of LNAPL. There have been no new wells exhibiting measureable thicknesses of LNAPL since the January 2011 SIDR. The well locations where LNAPL was detected in the FGPA are in the area of the former MGP processes and the former piping raceway footprint. On the FPPA, LNAPL was detected in the well located in the vicinity of the former service underground storage tanks or USTs (M&E MW-5).

During the 2016 quarterly gauging events, LNAPL recovery was attempted at three (3) wells: MW-210, MW-312S, and M&E MW-5. Consistent with historic observations, LNAPL appears to recover relatively slowly indicating limited localized subsurface impacts. In addition, observed LNAPL thicknesses appear to be highly dependent upon the tidal cycle at the time of gauging. The rate of LNAPL recovery appears to be on the order of 1 to 2 months (or more) (timeframe over which recorded thickness appears to return to original measurement). In general, LNAPL thicknesses and recoverability in 2016 were consistent with historic observations, as presented in the January 2011 SIDR, the July 2011 RAE and previous groundwater monitoring reports and summarized in Table 2C and 3A, with some minor deviations. LNAPL in monitoring wells MW-103, MW-326S, MW-313S and MW-3 have decreased from measurable thicknesses of several feet in January 2011 to less than 0.10 feet since October 2011, suggesting the presence of limited and localized LNAPL impacts.

DNAPL

During the 2016 quarterly gauging events, measurable levels of DNAPL in the form of coal tar (defined as equal to or greater than 0.01 feet) were detected in only seven (7) of the sixty-six (66) monitoring wells gauged: as shown on Figures 4A and 4B, four (4) in the FGPA and three (3) in the SFA. As presented in Table 2D, DNAPL thicknesses varied by well location. In the FGPA, MW-4 contained trace amounts to 0.9 feet, MW-303 contained 4.35 to 6.34 feet, MW-339D contained non-observed to 0.2 feet, and MW-341 contained 1.95 to 2.55 feet of DNAPL; and in the SFA, MW-1 contained non-observed to 0.01 feet, MW-320S contained trace amounts to 2.45 feet and MW-320D contained 13.01 to 14.2 feet of DNAPL. Monitoring wells MW-4 and MW-303 are located proximate to former MGP processes, monitoring wells MW-339D and MW-341 are located downgradient of the former Gasholders No. 7 and 8 and monitoring wells MW-1, MW-320S, and MW-320D are located in an area of historic filling. It should be noted that monitoring well MW-103 (located on the FPPA), which was the only well in the FPPA where measureable DNAPL was detected during the 2010 Site investigations, has not shown evidence of DNAPL since 2011.

Based on the measurable quantities, physical characteristics of the DNAPL, and results of historic DNAPL recovery attempts, recovery was attempted at two (2) well locations in 2016 (MW-303 and MW-341 within the FGPA portion of the Site²). As shown in Table 3B, during the 2016 recovery rounds, a total of 4 gallons of DNAPL was recovered from MW-341

² Recovery was not attempted for the DNAPL observed in the SFA due to the viscosity of the DNAPL observed.



and a total of 1.25 gallons of DNAPL was recovered from MW-303. In general, DNAPL thicknesses and recoverability rates observed during 2016 were consistent with historic observations.

DNAPL thickness in MW-320D (located in the SFA) ranged from 1.05 and 10 feet between 2009 and 2013, compared to DNAPL thicknesses ranging from 13.01 and 14.2 feet in 2015 and 2016. Similar to observations of LNAPL, DNAPL is observed in only certain wells suggesting the presence of localized pockets and not a significant contiguous layer. Based on the results of attempted recovery and the viscous nature of the materials, DNAPL is unlikely to be significantly mobile. In addition, groundwater monitoring wells act as collection points for NAPL and therefore the thicknesses measured within the wells are often significantly greater than what is actually present in the subsurface. This also results in observations of increased thicknesses of NAPL in a monitoring well when recovery is not feasible, such as in the case of MW-320D. GZA has not observed the presence of sheen in the waterfront area adjacent to MW-320D, further indicating that the DNAPL in this well is not significantly mobile.

3.2 GROUNDWATER FLOW DIRECTION

Between April 2009 and October 2016, GZA recorded depth to groundwater readings at Site monitoring wells on a quarterly basis.³ Depths to groundwater measurements were obtained using an electronic water level/oil water interface probe accurate to within 0.01 feet. The groundwater elevations at each monitoring well were subsequently calculated using the casing and PVC elevations. Table 2A presents the depth to groundwater readings for each well gauged in 2016. Please note, as indicated in Table 2A groundwater elevations were adjusted to account for the presence of LNAPL. The groundwater elevations recorded during the October 31, 2016 gauging round were used to construct the *Shallow Groundwater Contour Plan* presented as Figure 3. Groundwater elevations during the 2016 gauging events are generally consistent with those recorded during previous monitoring events. As expected, review of groundwater elevations recorded during the 2016 reporting period indicated that the groundwater beneath the Site generally flows from west to east towards the Seekonk River. In general, the groundwater table was encountered between elevation 0 and 10 feet (NGVD 1929), which is predominantly within the fill unit. As indicated on Figure 3 and consistent with Site topography, groundwater elevations decline steeply from west to east on the northern side of the Site. In general, and consistent with Site topography, groundwater elevation contours are relatively flat across the central, southern and eastern portions of the Site.

3.3 GROUNDWATER SAMPLING TECHNIQUES

Twenty-seven (27) monitoring wells are included in this groundwater sampling program: Four (4) in the NFA (MW-5, MW-7, MW-310S and MW-310D), ten (10) in the FGPA (MW-201, MW-208, MW-312S, MW-312D, MW-326S, MW-326D, MW-333S, MW-333D, MW-339S, and MW-339D), eight (8) in the FPPA (M&E MW-2, MW-6, MW-109, MW-314S, MW-314D, MW-316D, MW-316S and MW-337) and five (5) in the SFA (MW-107, MW-318S, MW-318D, MW-334S and MW-334D).⁴ These well locations were chosen to provide a representative evaluation of overall Site groundwater quality. Figures 2A and 2B, *Exploration Location Plans*, identify the wells (highlighted in yellow) included in the November 2016 groundwater sampling round.

Groundwater samples were collected in general accordance with EPA's January 19, 2010 *Low Stress (low flow) Purging and Sampling Procedure* (Low Flow Standard Operating Procedure). Prior to sampling, the depth to static groundwater and NAPL present was measured in each well using an ORS electronic oil/water interface probe. During groundwater

³ Note that MW-318D appears to be clogged with roots and was not able to be gauged but is able to be sampled. The potential need to repair this will be evaluated in the future.

⁴ MW-5 and MW-316S are included in the sampling program; however, due to low water levels and insufficient recovery, there was not enough water present within the well to collect samples during the November 2016 monitoring event.



sampling, a variable speed peristaltic pump or submersible pump was utilized to control the rate of purging. Dedicated 3/8-inch polyethylene tubing installed in each of the wells was utilized as the intake and discharge tubing for the pump. Pharmaceutical grade (silicone) tubing was utilized as the pump head tubing and connected to the intake and discharge tubing by clamps sufficient to prevent the introduction of air into the sample. In order to limit the potential for LNAPL to enter the sampling tubing during the collection, a peristaltic pump was used to force air through the tubing as it passed through the LNAPL/groundwater interface. If DNAPL was noted in the well, the sampling tubing was installed in these wells carefully so that the DNAPL layer was not intercepted.

During sampling, field readings were recorded for pH, temperature, specific conductance, oxidation reduction potential (ORP) and dissolved oxygen (DO) using a YSI Professional Plus® portable water quality meter with a flow-through cell. A LaMotte Turbidimeter® was used to monitor the turbidity. These field readings are presented in the field sampling logs, attached as Appendix B. As indicated on the logs, the monitoring wells were pumped until field screening parameters were stabilized prior to collecting the samples.

Samples were placed in laboratory-provided, hydrochloric acid-preserved 40 milliliter (mL) glass vials with septa caps for volatile organic compound (VOC) analysis via EPA Method 8260B.⁵ Samples were then packed in an ice chest and transported under chain-of-custody protocol to ESS Laboratory located in Cranston, Rhode Island.

3.4 INVESTIGATION-DERIVED WASTE MANAGEMENT

As described previously, NAPL/groundwater that was collected during 2016 NAPL recovery rounds were containerized in a labeled 55-gallon steel drum and stored securely on-Site for subsequent off-Site disposal. One (1) drum of purge water was generated during the November 2016 sampling event. The purge water and oily debris drums were removed from the Site by Clean Harbors Environmental Services, Inc. (CHES) of East Providence, Rhode Island for off-Site disposal. A copy of the disposal manifest is included in Appendix C.

3.5 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING AND ANALYSIS

During the 2016 sampling round, twenty-five (25) groundwater samples, two (2) blind duplicate samples and one (1) trip blank was submitted to ESS Laboratory in Cranston, Rhode Island for analysis. The samples were transported to the laboratory under chain of custody protocol. As indicated on page 2 of each laboratory report, the samples were received intact, within the proper temperature range and appropriately preserved. Analytical results for the trip blank were below the laboratory reporting limit for all 75 targeted compounds.

Two duplicate sample sets (Set #1 – MW-310S and BD11216 and Set #2 – MW-107 and BD-1116) were also submitted for VOC analysis to evaluate sample reproducibility. As presented in Table 4B,

These results are shown in Tables 4A (VOCs) and 4B (QA/QC Results). Copies of the original laboratory data, laboratory quality assurance/quality control (QA/QC) methods, and chain-of-custody forms are provided in Appendix D.

3.6 GROUNDWATER ANALYTICAL RESULTS

Analytical data from the 2016 sampling event is summarized in Table 4A (VOCs), which includes comparisons to RIDEM Method 1 (or Method 2 as appropriate) GB Groundwater Objectives and Upper Concentration Limits (UCL). A summary of

⁵ Previous groundwater sampling rounds have included analysis for VOCs via EPA Method 8260B, total petroleum hydrocarbons (TPH) via EPA Method 8100M, polycyclic aromatic hydrocarbons (PAHs) via EPA Method 8270C, total cyanide and dissolved free cyanide via EPA Method 9014. The groundwater monitoring program was modified in 2015 to only include VOCs consistent with the RIDEM-submitted, July 2011 RAE.



the 2016 data is described below. Historical groundwater quality results by monitoring well dating back to 1996 are presented in Tables 5A through 5AA.

Groundwater quality at the Site is generally characterized by a few isolated exceedances (six (6) wells total) of the GB Groundwater Objectives for benzene, ethylbenzene and naphthalene, primarily in areas of the Site where former MGP features were located. Figures 4A and 4B, *2016 Analytical Groundwater Data*, present the total VOC concentrations detected in groundwater samples during the November 2016 sampling round and highlight wells exhibiting specific analyte GB Groundwater Objective exceedances.

As indicated in Table 4A, VOCs were detected in eighteen (18) of the twenty-five (25) groundwater samples submitted for analysis in 2016. The total VOC concentrations detected during the 2016 monitoring event ranged from 0.001 milligrams per Liter (mg/L) to 15.419 mg/L. Six samples (6/25) exceeded the GB Groundwater Objective for one or more VOCs. Three (3/25) samples exceeded the Method 2 GB Groundwater Objective for naphthalene, five (5/25) samples exceeded the Method 1 GB Groundwater Objective for benzene, and one (1/25) sample exceeded the Method 1 GB Groundwater Objective for ethylbenzene.⁶

The presence of these compounds in groundwater samples is typical for former MGP and power plant sites and consistent with historical sampling results for the Tidewater Site. None of the VOCs detected in groundwater in 2016 exceeded UCLs. The following sections discuss the dissolved-phased VOC analytical results for the 2016 sampling event as compared to the Method 1 (or Method 2 as appropriate) objectives by Site area.

NFA (Northern Portions of A.P. 54B Lot 826)

Three (3) groundwater samples (MW-7, MW-310S, and MW-310D) were collected in this area during the 2016 monitoring event and submitted for analysis of VOCs. The groundwater sample from MW-310D exhibited exceedances of the GB Groundwater Objectives for benzene and naphthalene. Benzene was detected in MW-310D at a concentration of 0.617 mg/L, in excess of the GB Groundwater Objective of 0.14 mg/L. Naphthalene was detected in MW-310D at a concentration of 7.38 mg/L, in excess of the Method 2 derived⁷ GB Groundwater Objective of 2.67 mg/L. The groundwater samples collected from MW-7 and MW-310S had no detection of VOCs.

The concentrations of both benzene and naphthalene have exceeded the GB Groundwater Objectives in MW-310D (refer to Table 5D) during the previous sampling rounds (June 2010, July 2011, July 2012, August 2013, October 2014, and November 2015), consistent with the 2016 monitoring event. This well is located in the historic cove of the NFA and visual/olfactory impacts have been observed in this area.

FGPA (Southern Portions of A.P. 54B Lot 826 and A.P. 65B Lot 662)

Ten (10) groundwater samples (MW-201, MW-208, MW-312S, MW-312D, MW-326S, MW-326D, MW-333S, MW-333D, MW-339S, and MW-339D) were collected in this area during the 2016 monitoring event and submitted for analysis of VOCs. Exceedances of the GB Groundwater Objectives for VOCs were detected in four (4) monitoring wells: MW-312D, MW-326S, MW-333D, and MW-339D. Benzene was detected in eight samples (8/10) at concentrations ranging from 0.001 mg/L to 5.97 mg/L, with three samples (3/10) exceeding the GB Groundwater Objective of 0.14 mg/L (MW-312D, 5.97

⁶ The laboratory detection limit for 1,2-dibromo-3-chloropropane is above the GB groundwater objective. However, 1,2-dibromo-3-chloropropane is not a typical contaminant of concern for former MGP or former power plant sites, therefore we do not anticipate that 1,2-dibromo-3-chloropropane is impacting soil or groundwater at the Site.

⁷ Derivation of this Method 2 GB Groundwater Objective can be provided upon request.



mg/L; MW-326S, 0.335 mg/L; and MW-333D, 0.327 mg/L). Naphthalene was detected in seven samples (7/10) at concentrations ranging from 0.0028 mg/L to 6.41 mg/L, with two samples (2/10) exceeding the GB derived Groundwater Objective of 2.67 mg/L (MW-312D, 6.41 mg/L; and MW-339D, 3.88 mg/L). Ethylbenzene was detected in six samples (6/10) at concentrations ranging from 0.0061 mg/L to 1.95 mg/L, with one sample (1/10) exceeding the GB Groundwater Objective of 1.6 mg/L (MW-312D, 1.95 mg/L).

Analytical VOC results for the FGPA in 2016 were consistent with historic groundwater results, with exceedances of the GB Groundwater Objectives limited to naphthalene, ethylbenzene and benzene. All wells exhibiting GB Groundwater Objective Exceedances are located in the southeastern portion of the FGPA in the vicinity of the former processing houses for the MGP (i.e., MW-312D, MW-326S, and MW-333D), with the exception of MW-339D, which is located downgradient of the location of the former Gasholders No. 7 and 8.

FPPA (A.P. 65B Lot 645)

Seven (7) groundwater samples (M&E MW-2, MW-6, MW-109, MW-314S, MW-314D, MW-316D and MW-337) were collected in this area during the 2016 monitoring event and submitted for VOC analysis. Three (3/7) groundwater samples (M&E MW-2, MW-314S, and MW-316D) were non-detect for VOCs during the 2016 event. Exceedances of the GB Groundwater Objectives for VOCs were limited to one (1/7) monitoring well: MW-109. Benzene was detected in three samples (3/7) at concentrations ranging from 0.008 mg/L to 0.312 mg/L, with one sample (1/7) exceeding the GB Groundwater Objective of 0.14 mg/L (MW-109 at a concentration of 0.312 mg/L). Ethylbenzene was detected in three (3/7) samples at concentrations ranging from 0.0018 mg/L to 0.0119 mg/L, with no exceedances of the GB Groundwater Objective of 1.6 mg/L. Naphthalene was detected in two (2/7) samples at concentrations ranging from 0.0019 mg/L to 0.0255 mg/L, with no exceedances of the GB derived Groundwater Objective of 2.67 mg/L.

Historically, exceedances of the GB Groundwater Objectives have been limited to relatively low levels of benzene at MW-109 which is located near the existing switching station (former power plant building) and a former UST.

SFA (A.P. 65B Lots 647 and 649, portions of A.P. 65B Lot 648 and portions of A.P. 67B Lot 11)

Five (5) groundwater samples were collected from this area during the 2016 sampling event (MW-107, MW-318S, MW-318D, MW-334S, and MW-334D) and analyzed for VOCs. The groundwater samples collected from MW-107 and MW-318D had no VOCs detected. Benzene was detected in three samples (3/5) at concentrations ranging from 0.0022 mg/L to 0.0426 mg/L, with no exceedances of the GB Groundwater Objective of 0.14 mg/L. Ethylbenzene was detected in one (1/5) sample, MW-318, with no exceedances of the GB Groundwater Objective of 1.6 mg/L. Naphthalene was detected in three (3/5) samples at concentrations ranging from 0.0302 mg/L to 0.504 mg/L, with no exceedances of the GB derived Groundwater Objective of 2.67 mg/L.

Consistent with historic data, no VOCs were detected in excess of the GB Groundwater Objectives in the SFA during the 2016 sampling event.

4.0 CONCLUSIONS

As part of the annual groundwater monitoring for 2016, twenty-five (25) monitoring wells were sampled in November 2016 for VOCs, all accessible wells were gauged for the elevation of groundwater and the presence of NAPL on a quarterly basis, NAPL recovery was performed at certain well locations, and inspections for sheens in the Seekonk River adjacent to



the Site were made at least twice-monthly throughout the year. In general, observations made and the results of analytical testing during 2016 were consistent with historic results as summarized below:

- Sheen observations were consistent with historic results and were limited to the bulkhead area in the central portion of the shoreline in the FPPA and FGPA. Sheen observations were limited to localized and immediate areas of the shoreline (including near a CSO outfall) and were generally observed at mid- or low-tide.
- Measureable NAPL was limited to thirteen (13) monitoring well locations in 2016. LNAPL was observed in six (6) monitoring wells (5 in the FGPA and 1 in the FPPA) and DNAPL was observed in seven (7) monitoring wells (4 in the FGPA and 3 in the SFA). LNAPL thicknesses ranged from trace amounts to 3.06 feet and DNAPL thicknesses ranged from trace amounts to 14.2 feet. Approximately 11.25 gallons of NAPL/groundwater was recovered from Site monitoring wells and was containerized and transported off-Site for disposal. Observations of both LNAPL and DNAPL continue to be localized and do not indicate the presence of significant contiguous layers in the subsurface. In addition, and typical of MGP sites, recovery attempts suggest that observed NAPLs are unlikely to be significantly mobile.
- Exceedances of the GB Groundwater Objectives were limited to six (6/25) wells sampled during the 2016 monitoring round. Compounds detected in excess of the GB Groundwater Objectives were limited to naphthalene, benzene and ethylbenzene. The presence of these compounds in groundwater samples is typical for former MGP and power plant sites. The most significant dissolved phase groundwater impacts were generally detected in the FGPA and NFA, with limited impacts detected in the very northern portion of the FPPA.

The 2017 monitoring program will be performed consistent with the 2016 program.



TABLES

TABLE 1
SUMMARY OF SHEEN OBSERVATIONS

File No. 05.0043654.00

1/12/2017

Former Tidewater Facility
Pawtucket, Rhode Island

Date	Approximate Tidal Stage	Sheen Observation Location	Sheen Characteristics
1/6/2016	No Sheen observed at mid-low tide.		
1/21/2016	No Sheen observed at low tide.		
2/8/2016	No Sheen observed at high tide.		
2/17/2016	Mid-low tide	34" CSO pipe outfall washout adjacent to MW-103	Slight dull spots of sheen
3/2/2016	No Sheen observed at high tide.		
3/28/2016	Mid-high tide	34" CSO pipe outfall washout adjacent to MW-103	Dull bands of sheen
4/15/2016	No Sheen observed at mid tide.		
4/30/2016	Mid-low tide	Adjacent to MW-326 S/D and TB-12/MW-3	Slight spots of sheen
4/30/2016	Mid-low tide	34" CSO pipe outfall washout adjacent to MW-103	Slight spots of sheen
5/10/2016	No Sheen observed at high tide.		
5/27/2016	Mid-low tide	34" CSO pipe outfall washout adjacent to MW-103	Moderate dull to bright bands of sheen
6/2/2016	Mid-low tide	34" CSO pipe outfall washout adjacent to MW-103	Slight dull spots of sheen
6/10/2016	Mid-Low tide	34" CSO pipe outfall washout adjacent to MW-103	Slight bright bands of sheen
6/24/2016	No Sheen observed at high tide.		
7/5/2016	No Sheen observed at high tide.		
7/20/2016	Mid-low tide	34" CSO pipe outfall washout adjacent to MW-103	Slight sheen
8/1/2016	No Sheen observed at high tide.		
8/12/2016	No Sheen observed at high tide.		
9/1/2016	No Sheen observed at high tide.		
9/23/2016	Mid-low tide	34" CSO pipe outfall washout adjacent to MW-103	Slight streaks of sheen
10/18/2016	No Sheen observed at high tide.		
10/31/2016	Low	Adjacent to MW-326 S/D and TB-12/MW-3	Moderate bright bands and plates of sheen
11/2/2016	No Sheen observed at high tide.		
11/15/2017	Low	34" CSO pipe outfall washout adjacent to MW-103	Slight bright bands of sheen
12/1/2016	Low	Adjacent to MW-326 S/D and TB-12/MW-3	Moderate bright bands and plates of sheen
12/13/2016	No Sheen observed at high tide.		

Notes:

1. SFA refers to the South Fill Area.
2. FPPA refers to the Former Power Plant Area.
3. FGPA refers to the Former Gas Plant Area.
4. NFA refers to the North Fill Area.
5. This table shows observations that were made along the Site shoreline. Observations were made at least twice a month.
6. This table shows observations that were made during 2016. The January 2011 SIDR, July 2011 RAE and previous groundwater monitoring reports presents sheen observations between 2009 and 2015.

TABLE 2A
SUMMARY OF GROUNDWATER MEASUREMENTS

Former Tidewater Facility
Pawtucket, Rhode Island

Site Area	Well ID	Measured Well Depth (Feet below Top of PVC)	Top of PVC Elevation (Feet)	Range of LNAPL Observed (feet)	Range of DNAPL Observed (feet)	January 2016 Groundwater Gauging Information						April 2016 Groundwater Gauging Information					
						Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)
NFA	MW-5	11.60	32.23	NP	NP	dry	11.74	dry	NP	NP	dry	dry	11.8	dry	NP	NP	dry
NFA	MW-7	27.45	31.98	NP	NP	20.81	27.8	11.17	NP	NP	11.17	18.47	27.4	13.51	NP	NP	13.51
NFA	MW-204	16.77	9.47	NP	NP	7.47	16.76	2.00	NP	NP	2.00	9.2	16.75	0.27	NP	NP	0.27
NFA	MW-205	15.00	12.20	NP	NP	2.25	14.87	9.95	NP	NP	9.95	1.55	15	10.65	NP	NP	10.65
NFA	MW-206	28.77	37.22	NP	NP	27.13	29.35	10.09	NP	NP	10.09	25.86	29.3	11.36	NP	NP	11.36
NFA	MW-310S	17.35	9.59	NP	NP	7.19	16.26	2.40	NP	NP	2.40	9.31	16.5	0.28	NP	NP	0.28
NFA	MW-310D	36.20	9.18	NP	NP	6.79	36.3	2.39	NP	NP	2.39	9.04	36.1	0.14	NP	NP	0.14
NFA	MW-311	22.00	10.26	NP	NP	8.23	21.82	2.03	NP	NP	2.03	9.79	21.75	0.47	NP	NP	0.47
FGPA	MW-201	15.00	13.76	NP	NP	8.53	14.92	5.23	NP	NP	5.23	8.98	15	4.78	NP	NP	4.78
FGPA	MW-202	13.80	14.39	NP	NP	4.4	13.8	9.99	NP	NP	9.99	3.7	13.8	10.69	NP	NP	10.69
FGPA	MW-203	14.80	10.29	NP	NP	7.94	14.71	2.35	NP	NP	2.35	8.16	14.7	2.13	NP	NP	2.13
FGPA	MW-207 (2)	11.75	14.50	NP	NP	Destroyed						Destroyed					
FGPA	MW-208	21.75	28.23	NP	NP	16.57	21.82	11.66	NP	NP	11.66	13.85	21.7	14.38	NP	NP	14.38
FGPA	MW-209	21.05	24.74	NP	NP	13.07	21.09	11.67	NP	NP	11.67	10.8	21	13.94	NP	NP	13.94
FGPA	MW-210	17.28	11.35	trace-2.54	NP	11.15	17.28	0.20	1.83	NP	1.76	10.5	17.9	0.85	1.93	NP	2.49
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	12.14	16.8	-0.68	trace	NP	-0.68	11.36	16.95	0.10	trace	NP	0.10
FGPA	MW-4	17.65	10.58	NP	trace - 1.44	12.36	15.68	-1.78	NP	trace	-1.78	10.97	15.85	-0.39	NP	trace	-0.39
FGPA	MW-303	41.85	9.07	NP	trace - 6.34	10.23	42	-1.16	NP	6.34	-1.16	8.99	42	0.08	NP	5.4	0.08
FGPA	MW-312S	23.55	10.64	trace - 3.06	trace	12.1	24.1	-1.46	1.65	NP	-0.06	12.41	23.5	-1.77	3.06	NP	0.83
FGPA	MW-312D	31.90	10.57	NP	trace	11.51	31.9	-0.94	NP	NP	-0.94	10.31	31.9	0.26	NP	NP	0.26
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	12.52	24.7	-0.78	trace	NP	-0.78	11.63	24.68	0.11	0.06	NP	0.16
FGPA	MW-313D	47.35	12.01	NP	NP	12.61	47.17	-0.60	NP	NP	-0.60	11.62	47.2	0.39	NP	NP	0.39
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	13.54	27	-0.93	0.01	NP	-0.92	12.7	26.55	-0.09	NP	NP	-0.09
FGPA	MW-326D	45.05	11.91	NP	NP	12.88	45.14	-0.97	NP	NP	-0.97	12.05	45.1	-0.14	NP	NP	-0.14
FGPA	MW-333S	18.30	12.30	NP	NP	10.79	17.57	1.51	NP	NP	1.51	11.98	17.7	0.32	NP	NP	0.32
FGPA	MW-333D	45.20	12.30	NP	NP	10.35	44.96	1.95	NP	NP	1.95	12	44.8	0.30	NP	NP	0.30
FGPA	MW-335S	15.75	11.50	NP	NP	8.89	15.05	2.61	NP	NP	2.61	9.85	15.7	1.65	NP	NP	1.65
FGPA	MW-335D	36.50	11.96	NP	NP	9.75	36.19	2.21	NP	NP	2.21	11.28	35.9	0.68	NP	NP	0.68
FGPA	MW-336	15.00	12.73	NP	NP	11.15	15.13	1.58	NP	NP	1.58	11.12	15	1.61	NP	NP	1.61
FGPA	MW-339S	12.35	15.26	NP	NP	7.13	12.32	8.13	NP	NP	8.13	5.46	12.3	9.80	NP	NP	9.80
FGPA	MW-339D	20.95	15.42	NP	trace	6.9	21.2	8.52	NP	trace	8.52	5.36	21.2	10.06	NP	0.2	10.06
FGPA	MW-341	30.10	19.62	NP	trace - 2.65	9.62	30.15	10.00	NP	2.55	10.00	7.42	30.15	12.20	NP	2.35	12.20

TABLE 2A
SUMMARY OF GROUNDWATER MEASUREMENTS

Former Tidewater Facility
Pawtucket, Rhode Island

Site Area	Well ID	Measured Well Depth (Feet below Top of PVC)	Top of PVC Elevation (Feet)	Range of LNAPL Observed (feet)	Range of DNAPL Observed (feet)	January 2016 Groundwater Gauging Information						April 2016 Groundwater Gauging Information					
						Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)
FPPA	M&E MW-1	15.05	9.36	NP	NP	9.84	17.25	-0.48	NP	NP	-0.48	8	15.15	1.36	NP	NP	1.36
FPPA	M&E MW-2	13.85	10.81	NP	NP	9.72	13.68	1.09	NP	NP	1.09	10.82	13.17	-0.01	NP	NP	-0.01
FPPA	M&E MW-4 (1)	7.81		NP	NP	Not Found						Not Found					
FPPA	M&E MW-5 (3)	16.88	8.92	trace - 3.24	NP	8.52	13.94	0.40	0.02	NP	0.42	11.05	14.5	-2.13	2.95	NP	0.38
FPPA	MW-6	19.03	13.49	NP	NP	11.95	18.75	1.54	NP	NP	1.54	11.91	18.74	1.58	NP	NP	1.58
FPPA	MW-101	16.00	10.94	NP	NP	9.97	16.04	0.97	NP	NP	0.97	9.94	16.00	1.00	NP	NP	1.00
FPPA	MW-102	26.80	19.74	NP	NP	18.58	26.51	1.16	NP	NP	1.16	18.33	26.6	1.41	NP	NP	1.41
FPPA	MW-103	16.90	11.33	trace - 0.31	trace - 0.08	10.59	16.85	0.74	NP	NP	0.74	10.1	16.91	1.23	NP	NP	1.23
FPPA	MW-104	14.90	11.77	NP	NP	10.28	14.85	1.49	NP	NP	1.49	10.10	14.88	1.67	NP	NP	1.67
FPPA	MW-105	27.55	22.14	NP	NP	20.35	27.55	1.79	NP	NP	1.79	20.15	27.5	1.99	NP	NP	1.99
FPPA	MW-109	19.30	14.09	NP	NP	12.02	19.43	2.07	NP	NP	2.07	11.9	19.3	2.19	NP	NP	2.19
FPPA	MW-314S	24.50	10.37	0.01	NP	9.64	24.27	0.73	NP	NP	0.73	10.25	24.11	0.12	NP	NP	0.12
FPPA	MW-314D	43.40	10.38	NP	NP	9.78	43.47	0.60	NP	NP	0.60	10.47	43.38	-0.09	NP	NP	-0.09
FPPA	MW-315S	26.40	10.98	NP	NP	10.54	25.52	0.44	NP	NP	0.44	11.10	25.65	-0.12	NP	NP	-0.12
FPPA	MW-315D	41.70	10.69	NP	NP	10.47	41.78	0.22	NP	NP	0.22	10.97	41.89	-0.28	NP	NP	-0.28
FPPA	MW-316S	22.30	24.52	NP	NP	22.27	22.55	2.25	NP	NP	2.25	21.29	22.52	3.23	NP	NP	3.23
FPPA	MW-316D	31.55	24.68	NP	NP	22.42	31.53	2.26	NP	NP	2.26	21.62	31.65	3.06	NP	NP	3.06
FPPA	MW-317S	27.40	25.35	NP	NP	23.64	27.49	1.71	NP	NP	1.71	22.3	27.3	3.05	NP	NP	3.05
FPPA	MW-317D	36.20	25.47	NP	NP	22.92	36.42	2.55	NP	NP	2.55	22.3	36.35	3.17	NP	NP	3.17
FPPA	MW-337	20.00	13.53	NP	NP	12.08	19.91	1.45	NP	NP	1.45	11.89	19.89	1.64	NP	NP	1.64
FPPA	MW-338S	18.45	13.94	NP	NP	12.34	18.43	1.60	NP	NP	1.60	12.18	18.45	1.76	NP	NP	1.76
FPPA	MW-338D	39.65	13.48	NP	NP	13.25	39.83	0.23	NP	NP	0.23	13.45	39.68	0.03	NP	NP	0.03
FPPA	MW-400 (5)	24.30	29.62	NP	NP	19.26	24.22	10.36	NP	NP	10.36	12.07	19.25	17.55	NP	NP	17.55
FPPA	MW-401 (5)	19.30	24.99	NP	NP	14.62	19.3	10.37	NP	NP	10.37	17.2	24.1	7.79	NP	NP	7.79
SFA	MW-1	23.20	19.59	NP	trace - 0.8	17.87	23.18	1.72	NP	0.01	1.72	17.73	23.35	1.86	NP	trace	1.86
SFA	MW-107	27.35	21.80	NP	NP	21.58	43.45	0.22	NP	NP	0.22	19.73	27.78	2.07	NP	NP	2.07
SFA	MW-318S	27.00	18.96	NP	NP	17.43	26.83	1.53	NP	NP	1.53	17.4	26.82	1.56	NP	NP	1.56
SFA	MW-318D (4)	43.60	18.70	NP	NP	16.93	26.53	1.77	NP	NP	1.77	18.84	32.85	-0.14	NP	NP	-0.14
SFA	MW-319S	27.10	19.96	NP	NP	18.8	27.04	1.16	NP	NP	1.16	18.53	27.14	1.43	NP	NP	1.43
SFA	MW-319D	43.85	20.33	NP	NP	20.4	44.06	-0.07	NP	NP	-0.07	19.85	43.85	0.48	NP	NP	0.48
SFA	MW-320S	10.95	7.73	NP	trace - 2.45	6.4	10.84	1.33	NP	0.2	1.33	8.2	10.95	-0.47	NP	2.45	-0.47
SFA	MW-320D	25.70	8.69	NP	0.55 - 14.2	8.17	25.7	0.52	NP	14	0.52	7.23	25.7	1.46	NP	13.01	1.46
SFA	MW-321S	12.55	6.47	NP	NP	5.4	12.45	1.07	NP	NP	1.07	5.09	12.64	1.38	NP	NP	1.38
SFA	MW-321D	29.10	6.51	NP	NP	6.07	29.12	0.44	NP	NP	0.44	5.29	29.19	1.22	NP	NP	1.22
SFA	MW-334S	28.80	21.34	NP	NP	19.6	28.85	1.74	NP	NP	1.74	19.27	27.68	2.07	NP	NP	2.07
SFA	MW-334D	43.20	21.53	NP	NP	20	27.6	1.53	NP	trace	1.53	21.14	43.36	0.39	NP	NP	0.39

Notes

- NFA = North Fill Area
- FGPA = Former Gas Plant Area
- FPPA = Former Power Plant Area
- SFA = South Fill Area

Elevations are relative to NGVD-1929.

NP - Indicates No Product observed. NM = Not Measured

Blanks indicate no measurement collected during the event.

Potentiometric elevations for wells exhibiting LNAPL include 0.85 correction factor.

- Not found after June 16, 2010.
- Buried during gasholders Nos. 7 and 8 decommissioning and demolition.
- Found to have casing broken on December 3, 2010.
- Well was found to be damaged in April 2014.
- Well was installed in April 2014.
- This table presents gauging results from 2016. The January 2011 SIDR, July 2011 RAE and previous Groundwater Monitoring Reports presents historical gauging results collected between 2009 and 2015.

TABLE 2A
SUMMARY OF GROUNDWATER MEASUREMENTS

Former Tidewater Facility
Pawtucket, Rhode Island

Site Area	Well ID	Measured Well Depth (Feet below Top of PVC)	Top of PVC Elevation (Feet)	Range of LNAPL Observed (feet)	Range of DNAPL Observed (feet)	July 2016 Groundwater Gauging Information						October 2016 Groundwater Gauging Information					
						Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)
NFA	MW-5	11.60	32.23	NP	NP	dry	11.86	dry	NP	NP	dry	dry	11.84	dry	NP	NP	dry
NFA	MW-7	27.45	31.98	NP	NP	20.7	27.45	11.28	NP	NP	11.28	22.2	29.35	9.78	NP	NP	9.78
NFA	MW-204	16.77	9.47	NP	NP	6.58	16.74	2.89	NP	NP	2.89	6.5	16.75	2.97	NP	NP	2.97
NFA	MW-205	15.00	12.20	NP	NP	2.32	14.98	9.88	NP	NP	9.88	3.19	14.96	9.01	NP	NP	9.01
NFA	MW-206	28.77	37.22	NP	NP	27.14	29.23	10.08	NP	NP	10.08	28.14	29.31	9.08	NP	NP	9.08
NFA	MW-310S	17.35	9.59	NP	NP	6.69	16.85	2.90	NP	NP	2.90	6.43	16.74	3.16	NP	NP	3.16
NFA	MW-310D	36.20	9.18	NP	NP	6.07	36.24	3.11	NP	NP	3.11	5.87	36.3	3.31	NP	NP	3.31
NFA	MW-311	22.00	10.26	NP	NP	7.56	21.84	2.70	NP	NP	2.70	7.22	21.62	3.04	NP	NP	3.04
FGPA	MW-201	15.00	13.76	NP	NP	11.29	15.08	2.47	NP	NP	2.47	10.37	15	3.39	NP	NP	3.39
FGPA	MW-202	13.80	14.39	NP	NP	4.79	13.82	9.60	NP	NP	9.60	5.71	13.79	8.68	NP	NP	8.68
FGPA	MW-203	14.80	10.29	NP	NP	9.08	14.78	1.21	NP	NP	1.21	8.5	14.77	1.79	NP	NP	1.79
FGPA	MW-207 (2)	11.75	14.50	NP	NP	Destroyed						Destroyed					
FGPA	MW-208	21.75	28.23	NP	NP	16.46	21.73	11.77	NP	NP	11.77	17.92	21.79	10.31	NP	NP	10.31
FGPA	MW-209	21.05	24.74	NP	NP	12.97	21.04	11.77	NP	NP	11.77	14.48	21.03	10.26	NP	NP	10.26
FGPA	MW-210	17.28	11.35	trace-2.54	NP	10.42	17.35	0.93	trace	NP	0.93	9.63	17.29	1.72	NP	NP	1.72
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	9.42	16.98	2.04	NP	NP	2.04	11.12	16.7	0.34	NP	NP	0.34
FGPA	MW-4	17.65	10.58	NP	trace - 1.44	11.98	13.7	-1.40	NP	trace	-1.40	11.05	17.1	-0.47	NP	0.9	-0.47
FGPA	MW-303	41.85	9.07	NP	trace - 6.34	10.02	41.87	-0.95	NP	4.77	-0.95	9.68	42.2	-0.61	NP	4.35	-0.61
FGPA	MW-312S	23.55	10.64	trace - 3.06	trace	11.49	23.52	-0.85	1.39	NP	0.33	10.08	23.52	0.56	NP	NP	0.56
FGPA	MW-312D	31.90	10.57	NP	trace	7.92	31.91	2.65	NP	NP	2.65	10.76	31.64	-0.19	NP	NP	-0.19
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	9.41	24.69	2.33	NP	NP	2.33	11.85	24.7	-0.11	trace	NP	-0.11
FGPA	MW-313D	47.35	12.01	NP	NP	9.45	47.2	2.56	NP	NP	2.56	11.89	47.5	0.12	NP	NP	0.12
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	10.42	26.58	2.19	NP	NP	2.19	12.51	29.38	0.10	trace	NP	0.10
FGPA	MW-326D	45.05	11.91	NP	NP	9.53	45.07	2.38	NP	NP	2.38	11.96	45.43	-0.05	NP	NP	-0.05
FGPA	MW-333S	18.30	12.30	NP	NP	9.76	17.6	2.54	NP	NP	2.54	9.33	17.51	2.97	NP	NP	2.97
FGPA	MW-333D	45.20	12.30	NP	NP	9.78	44.82	2.52	NP	NP	2.52	9.71	44.95	2.59	NP	NP	2.59
FGPA	MW-335S	15.75	11.50	NP	NP	10.11	15.75	1.39	NP	NP	1.39	9.94	15.59	1.56	NP	NP	1.56
FGPA	MW-335D	36.50	11.96	NP	NP	9.52	35.9	2.44	NP	NP	2.44	9.39	35.89	2.57	NP	NP	2.57
FGPA	MW-336	15.00	12.73	NP	NP	12.14	15.04	0.59	NP	NP	0.59	11.7	15.02	1.03	NP	NP	1.03
FGPA	MW-339S	12.35	15.26	NP	NP	7.42	12.32	7.84	NP	trace	7.84	8	12.33	7.26	NP	NP	7.26
FGPA	MW-339D	20.95	15.42	NP	trace	7.28	21.2	8.14	NP	trace	8.14	7.93	21.2	7.49	NP	NP	7.49
FGPA	MW-341	30.10	19.62	NP	trace - 2.65	9.66	30.06	9.96	NP	2.35	9.96	10.92	30.15	8.70	NP	1.95	8.70

TABLE 2A
SUMMARY OF GROUNDWATER MEASUREMENTS

Former Tidewater Facility
Pawtucket, Rhode Island

Site Area	Well ID	Measured Well Depth (Feet below Top of PVC)	Top of PVC Elevation (Feet)	Range of LNAPL Observed (feet)	Range of DNAPL Observed (feet)	July 2016 Groundwater Gauging Information						October 2016 Groundwater Gauging Information					
						Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwater Elevation (feet)
FPPA	M&E MW-1	15.05	9.36	NP	NP	8.10	15.17	1.26	NP	NP	1.26	9.78	17.35	-0.42	NP	NP	-0.42
FPPA	M&E MW-2	13.85	10.81	NP	NP	9.49	13.72	1.32	NP	NP	1.32	8.54	13.65	2.27	NP	NP	2.27
FPPA	M&E MW-4 (1)	7.81		NP	NP	Not Found						Not Found					
FPPA	M&E MW-5 (3)	16.88	8.92	trace - 3.24	NP	8.68	14.51	0.24	NP	trace	0.24	6.74	14.52	2.18	trace	NP	2.18
FPPA	MW-6	19.03	13.49	NP	NP	11.94	19.04	1.55	NP	NP	1.55	11.83	18.76	1.66	NP	NP	1.66
FPPA	MW-101	16.00	10.94	NP	NP	9.75	16	1.19	NP	NP	1.19	9.52	16.04	1.42	NP	NP	1.42
FPPA	MW-102	26.80	19.74	NP	NP	18.02	26.69	1.72	NP	NP	1.72	17.97	29.5	1.77	NP	NP	1.77
FPPA	MW-103	16.90	11.33	trace - 0.31	trace - 0.08	9.87	16.86	1.46	NP	NP	1.46	9.19	16.91	2.14	NP	NP	2.14
FPPA	MW-104	14.90	11.77	NP	NP	10.32	14.84	1.45	NP	NP	1.45	10.25	14.8	1.52	NP	NP	1.52
FPPA	MW-105	27.55	22.14	NP	NP	20.37	27.53	1.77	NP	NP	1.77	20.39	27.5	1.75	NP	NP	1.75
FPPA	MW-109	19.30	14.09	NP	NP	12.1	19.3	1.99	NP	NP	1.99	12	19.12	2.09	NP	NP	2.09
FPPA	MW-314S	24.50	10.37	0.01	NP	9.18	24.34	1.19	NP	NP	1.19	8.1	24.34	2.27	NP	NP	2.27
FPPA	MW-314D	43.40	10.38	NP	NP	9.25	43.36	1.13	NP	NP	1.13	8.03	43.56	2.35	NP	NP	2.35
FPPA	MW-315S	26.40	10.98	NP	NP	10.13	25.6	0.85	NP	NP	0.85	8.73	25.35	2.25	NP	NP	2.25
FPPA	MW-315D	41.70	10.69	NP	NP	10.37	41.68	0.32	NP	NP	0.32	8.57	41.95	2.12	NP	NP	2.12
FPPA	MW-316S	22.30	24.52	NP	NP	22.03	22.47	2.49	NP	NP	2.49	22.35	22.53	2.17	NP	NP	2.17
FPPA	MW-316D	31.55	24.68	NP	NP	22.16	31.4	2.52	NP	NP	2.52	22.43	31.53	2.25	NP	NP	2.25
FPPA	MW-317S	27.40	25.35	NP	NP	23.6	27.36	1.75	NP	NP	1.75	23.65	27.39	1.70	NP	NP	1.70
FPPA	MW-317D	36.20	25.47	NP	NP	22.35	36.19	3.12	NP	NP	3.12	22.72	36.36	2.75	NP	NP	2.75
FPPA	MW-337	20.00	13.53	NP	NP	11.8	19.87	1.73	NP	NP	1.73	11.85	19.89	1.68	NP	NP	1.68
FPPA	MW-338S	18.45	13.94	NP	NP	12.4	18.36	1.54	NP	NP	1.54	12.36	18.38	1.58	NP	NP	1.58
FPPA	MW-338D	39.65	13.48	NP	NP	10.89	39.6	2.59	NP	NP	2.59	11.38	39.79	2.10	NP	NP	2.10
FPPA	MW-400 (5)	24.30	29.62	NP	NP	18.61	24.3	11.01	NP	NP	11.01	19.9	24.21	9.72	NP	NP	9.72
FPPA	MW-401 (5)	19.30	24.99	NP	NP	14.01	19.12	10.98	NP	NP	10.98	15.35	19.28	9.64	NP	NP	9.64
SFA	MW-1	23.20	19.59	NP	trace - 0.8	21.13	23.42	-1.54	NP	trace	-1.54	17.8	23.2	1.79	NP	NP	1.79
SFA	MW-107	27.35	21.80	NP	NP	20.05	27.68	1.75	NP	NP	1.75	20.05	27.65	1.75	NP	NP	1.75
SFA	MW-318S	27.00	18.96	NP	NP	17.21	26.84	1.75	NP	NP	1.75	17.11	29.87	1.85	NP	NP	1.85
SFA	MW-318D (4)	43.60	18.70	NP	NP	16.22	43.5	2.48	NP	NP	2.48	Well Clogged with roots - Unable to Gauge					
SFA	MW-319S	27.10	19.96	NP	NP	18.22	27.12	1.74	NP	NP	1.74	18.64	43.47	1.32	NP	NP	1.32
SFA	MW-319D	43.85	20.33	NP	NP	17.93	43.71	2.40	NP	NP	2.40	18.14	27.13	2.19	NP	NP	2.19
SFA	MW-320S	10.95	7.73	NP	trace - 2.45	9.58	11.2	-1.85	NP	trace	-1.85	5.79	11.2	1.94	NP	1.3	1.94
SFA	MW-320D	25.70	8.69	NP	0.55 - 14.2	11.85	25.6	-3.16	NP	13.6	-3.16	7.25	25.7	1.44	NP	14.2	1.44
SFA	MW-321S	12.55	6.47	NP	NP	8.76	11.56	-2.29	NP	NP	-2.29	4.76	12.04	1.71	NP	NP	1.71
SFA	MW-321D	29.10	6.51	NP	NP	9.52	29.19	-3.01	NP	NP	-3.01	4.75	28.97	1.76	NP	NP	1.76
SFA	MW-334S	28.80	21.34	NP	NP	19.62	28.73	1.72	NP	NP	1.72	19.6	28.75	1.74	NP	NP	1.74
SFA	MW-334D	43.20	21.53	NP	NP	19.2	43.04	2.33	NP	NP	2.33	19.65	37.42	1.88	NP	NP	1.88

Notes

- NFA = North Fill Area
- FGPA = Former Gas Plant Area
- FPPA = Former Power Plant Area
- SFA = South Fill Area

Elevations are relative to NGVD-1929.

NP - Indicates No Product observed. NM = Not Measured

Blanks indicate no measurement collected during the event.

Potentiometric elevations for wells exhibiting LNAPL include 0.85 correction factor.

- Not found after June 16, 2010.
- Buried during gasholders Nos. 7 and 8 decommissioning and demolition.
- Found to have casing broken on December 3, 2010.
- Well was found to be damaged in April 2014.
- Well was installed in April 2014.
- This table presents gauging results from 2016. The January 2011 SIDR, July 2011 RAE and previous Groundwater Monitoring Reports presents historical gauging results collected between 2009 and 2015.

TABLE 2B
SUMMARY OF NAPL MEASUREMENTS
Former Tidewater Facility
Pawtucket, Rhode Island

Site Area	Well ID	Measured Well Depth (Feet below Top of PVC)	Top of PVC Elevation (Feet)	Range of LNAPL Observed (feet)	Range of DNAPL Observed (feet)	January 2016					April 2016				
						Depth to Water (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to DNAPL (feet)	DNAPL Thickness (feet)	Depth to Water (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to DNAPL (feet)	DNAPL Thickness (feet)
NFA	MW-5	11.60	32.23	NP	NP	dry	-	NP	-	NP	dry	-	NP	-	NP
NFA	MW-7	27.45	31.98	NP	NP	20.81	-	NP	-	NP	18.47	-	NP	-	NP
NFA	MW-204	16.77	9.47	NP	NP	7.47	-	NP	-	NP	9.20	-	NP	-	NP
NFA	MW-205	15.00	12.20	NP	NP	2.25	-	NP	-	NP	1.55	-	NP	-	NP
NFA	MW-206	28.77	37.22	NP	NP	27.13	-	NP	-	NP	25.86	-	NP	-	NP
NFA	MW-310S	17.35	9.59	NP	NP	7.19	-	NP	-	NP	9.31	-	NP	-	NP
NFA	MW-310D	36.20	9.18	NP	NP	6.79	-	NP	-	NP	9.04	-	NP	-	NP
NFA	MW-311	22.00	10.26	NP	NP	8.23	-	NP	-	NP	9.79	-	NP	-	NP
FGPA	MW-201	15.00	13.76	NP	NP	8.53	-	NP	-	NP	8.98	-	NP	-	NP
FGPA	MW-202	13.80	14.39	NP	NP	4.40	-	NP	-	NP	3.70	-	NP	-	NP
FGPA	MW-203	14.80	10.29	NP	NP	7.94	-	NP	-	NP	8.16	-	NP	-	NP
FGPA	MW-207 (2)	11.75	14.50	NP	NP	Destroyed					Destroyed				
FGPA	MW-208	21.75	28.23	NP	NP	16.57	-	NP	-	NP	13.85	-	NP	-	NP
FGPA	MW-209	21.05	24.74	NP	NP	13.07	-	NP	-	NP	10.80	-	NP	-	NP
FGPA	MW-210	17.28	11.35	trace-2.54	NP	11.15	9.32	1.83	-	NP	10.50	8.57	1.93	-	NP
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	12.14	trace	trace	-	NP	11.36	trace	trace	-	NP
FGPA	MW-4	17.65	10.58	NP	trace - 1.44	12.36	-	NP	trace	trace	10.97	-	NP	trace	trace
FGPA	MW-303	41.85	9.07	NP	trace - 6.34	10.23	-	NP	35.66	6.34	8.99	-	NP	36.6	5.4
FGPA	MW-312S	23.55	10.64	trace - 3.06	trace	12.10	10.45	1.65	-	NP	12.41	9.35	3.06	-	NP
FGPA	MW-312D	31.90	10.57	NP	trace	11.51	-	NP	-	NP	10.31	-	NP	-	NP
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	12.52	trace	trace	-	NP	11.63	11.57	0.06	-	NP
FGPA	MW-313D	47.35	12.01	NP	NP	12.61	-	NP	-	NP	11.62	-	NP	-	NP
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	13.54	13.53	0.01	-	NP	12.70	-	NP	-	NP
FGPA	MW-326D	45.05	11.91	NP	NP	12.88	-	NP	-	NP	12.05	-	NP	-	NP
FGPA	MW-333S	18.30	12.30	NP	NP	10.79	-	NP	-	NP	11.98	-	NP	-	NP
FGPA	MW-333D	45.20	12.30	NP	NP	10.35	-	NP	-	NP	12.00	-	NP	-	NP
FGPA	MW-335S	15.75	11.50	NP	NP	8.89	-	NP	-	NP	9.85	-	NP	-	NP
FGPA	MW-335D	36.50	11.96	NP	NP	9.75	-	NP	-	NP	11.28	-	NP	-	NP
FGPA	MW-336	15.00	12.73	NP	NP	11.15	-	NP	-	NP	11.12	-	NP	-	NP
FGPA	MW-339S	12.35	15.26	NP	NP	7.13	-	NP	-	NP	5.46	-	NP	-	NP
FGPA	MW-339D	20.95	15.42	NP	trace	6.90	-	NP	trace	trace	5.36	-	NP	21	0.2
FGPA	MW-341	30.10	19.62	NP	trace - 2.65	9.62	-	NP	27.6	2.55	7.42	-	NP	27.8	2.35

TABLE 2B
SUMMARY OF NAPL MEASUREMENTS
Former Tidewater Facility
Pawtucket, Rhode Island

Site Area	Well ID	Measured Well Depth (Feet below Top of PVC)	Top of PVC Elevation (Feet)	Range of LNAPL Observed (feet)	Range of DNAPL Observed (feet)	July 2016					October 2016				
						Depth to Water (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to DNAPL (feet)	DNAPL Thickness (feet)	Depth to Water (feet)	Depth to LNAPL (feet)	LNAPL Thickness (feet)	Depth to DNAPL (feet)	DNAPL Thickness (feet)
NFA	MW-5	11.60	32.23	NP	NP	dry	-	NP	-	NP	dry	-	NP	-	NP
NFA	MW-7	27.45	31.98	NP	NP	20.70	-	NP	-	NP	22.20	-	NP	-	NP
NFA	MW-204	16.77	9.47	NP	NP	6.58	-	NP	-	NP	6.50	-	NP	-	NP
NFA	MW-205	15.00	12.20	NP	NP	2.32	-	NP	-	NP	3.19	-	NP	-	NP
NFA	MW-206	28.77	37.22	NP	NP	27.14	-	NP	-	NP	28.14	-	NP	-	NP
NFA	MW-310S	17.35	9.59	NP	NP	6.69	-	NP	-	NP	6.43	-	NP	-	NP
NFA	MW-310D	36.20	9.18	NP	NP	6.07	-	NP	-	NP	5.87	-	NP	-	NP
NFA	MW-311	22.00	10.26	NP	NP	7.56	-	NP	-	NP	7.22	-	NP	-	NP
FGPA	MW-201	15.00	13.76	NP	NP	11.29	-	NP	-	NP	10.37	-	NP	-	NP
FGPA	MW-202	13.80	14.39	NP	NP	4.79	-	NP	-	NP	5.71	-	NP	-	NP
FGPA	MW-203	14.80	10.29	NP	NP	9.08	-	NP	-	NP	8.50	-	NP	-	NP
FGPA	MW-207 (2)	11.75	14.50	NP	NP	Destroyed					Destroyed				
FGPA	MW-208	21.75	28.23	NP	NP	16.46	-	NP	-	NP	17.92	-	NP	-	NP
FGPA	MW-209	21.05	24.74	NP	NP	12.97	-	NP	-	NP	14.48	-	NP	-	NP
FGPA	MW-210	17.28	11.35	trace-2.54	NP	10.42	trace	trace	-	NP	9.63	-	NP	-	NP
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	9.42	-	NP	-	NP	11.12	-	NP	-	NP
FGPA	MW-4	17.65	10.58	NP	trace - 1.44	11.98	-	NP	trace	trace	11.05	-	NP	16.2	0.9
FGPA	MW-303	41.85	9.07	NP	trace - 6.34	10.02	-	NP	37.1	4.77	9.68	-	NP	37.85	4.35
FGPA	MW-312S	23.55	10.64	trace - 3.06	trace	11.49	10.1	1.39	-	NP	10.08	-	NP	-	NP
FGPA	MW-312D	31.90	10.57	NP	trace	7.92	-	NP	-	NP	10.76	-	NP	-	NP
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	9.41	-	NP	-	NP	11.85	trace	trace	-	NP
FGPA	MW-313D	47.35	12.01	NP	NP	9.45	-	NP	-	NP	11.89	-	NP	-	NP
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	10.42	-	NP	-	NP	12.51	trace	trace	-	NP
FGPA	MW-326D	45.05	11.91	NP	NP	9.53	-	NP	-	NP	11.96	-	NP	-	NP
FGPA	MW-333S	18.30	12.30	NP	NP	9.76	-	NP	-	NP	9.33	-	NP	-	NP
FGPA	MW-333D	45.20	12.30	NP	NP	9.78	-	NP	-	NP	9.71	-	NP	-	NP
FGPA	MW-335S	15.75	11.50	NP	NP	10.11	-	NP	-	NP	9.94	-	NP	-	NP
FGPA	MW-335D	36.50	11.96	NP	NP	9.52	-	NP	-	NP	9.39	-	NP	-	NP
FGPA	MW-336	15.00	12.73	NP	NP	12.14	-	NP	-	NP	11.70	-	NP	-	NP
FGPA	MW-339S	12.35	15.26	NP	NP	7.42	-	NP	trace	trace	8.00	-	NP	-	NP
FGPA	MW-339D	20.95	15.42	NP	trace	7.28	-	NP	trace	trace	7.93	-	NP	-	NP
FGPA	MW-341	30.10	19.62	NP	trace - 2.65	9.66	-	NP	27.71	2.35	10.92	-	NP	28.2	1.95

Former Tidewater Facility

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NFA = North Fill Area

FGPA = Former Gas Plant Area

FPPA = Former Power Plant Area

SFA = South Fill Area

Elevations are relative to NGVD-1929.

NP - Indicates No Product observed.

NM = Not Measured

Blanks indicate no measurement collected during the event.

TABLE 2C
LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL) WELL GAUGING DATA

Former Tidewater Facility
Pawtucket, Rhode Island

	LNAPL Thickness (feet)																
Date	4/23/2009	6/18/2009	5/17/2010	5/20/2010	6/16/2010	11/2/2010	11/19/2010	12/3/2010	1/24/2011	2/17/2011	3/29/2011	4/26/2011	5/4/2011	6/3/2011	6/29/2011	7/26/2011	10/18/2011
	Former Gas Plant Area																
MW-3 (1) (3)		0.02			trace	trace	0.05	trace	5.57	0.80	1.71	1.64	0.27	0.80	0.03	0.15	0.05
MW-4 (2) (3)		NP			NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-210 (3)		0.05			0.05	NP		NP	0.23	0.92	2.54	2.48	2.02	1.00	0.33	0.13	1.03
MW-312S				NP	NP	0.45	0.13	trace	trace	trace	trace	0.20	0.28	0.01	0.14	0.25	0.48
MW-313S			0.10		trace	NP	NP	NP	4.52	0.22	0.04	0.05	0.02	trace	0.01	0.02	0.09
MW-326S					NP	trace	0.30	trace	NP	trace	trace	0.03	0.01	trace	0.01	0.02	0.03
	Former Power Plant Area																
M&E MW-5 (5)	1.35	0.44			NP	0.04	1.17				3.24	3.16	1.12	1.20	0.40	0.13	0.05
MW-102 (4) (6)	NP	NP			NP	NP		NP	NP			NP				NP	NP
MW-103 (4)	NP	NP			NP	0.01	NP	trace	0.31	trace	trace	0.02	0.18	0.09	0.01	0.02	trace
MW-109 (4)	NP	NP			NP	NP		NP		NP		NP				NP	NP
MW-314S			0.01	NP	NP	NP	NP	NP	NP		NP	NP	NP	NP	NP	NP	NP

Notes: Blank cells indicate well was not gauged during the event.
trace - trace amounts of NAPL were found on the probe
NP - No Product was detected
Well is Located in Former Gas Plant Area
Well is Located in Former Power Plant Area

- (1) Well was guaged by AES as part of their 1996 Site Investigation activities. Sheens were noted.
(2) Well was gauged by AES as part of their 1996 Site Investigation activities. Floating product was noted.
(3) Well was gauged by VHB as part of their 2006 Site Investigation activities. Inconsistent, but measurable LNAPL was present.
(4) Well was gauged by VHB as part of their 2006 Site Investigation activities. Sheens were noted.
(5) Casing was found broken on December 3, 2010. Repairs were made in March 2011.
(6) Well was not located on January 29, 2013 due to snow.

TABLE 2C
LIGHT NON-AQUEOUS PHASE LIQUID (LNAPL) WELL GAUGING DATA

Former Tidewater Facility
Pawtucket, Rhode Island

	LNAPL Thickness (feet)																			
Date	1/19/2012	4/18/2012	#####	10/15/2012	1/29/2013	4/26/2013	8/6/2013	10/29/2013	1/27/2014	4/24/2014	7/30/2014	10/22/2014	1/22/2015	4/27/2015	7/29/2015	11/11/2015	1/21/2016	4/30/2016	7/20/2016	10/31/2016
	Former Gas Plant Area																			
MW-3 (1) (3)	0.02	0.03	0.02	trace	NP	NP	0.05	trace	NP	0.01	0.01	0.01	trace	trace	0.03	trace	trace	0.01	NP	NP
MW-4 (2) (3)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-210 (3)	2.25	NP	0.11	NP	0.04	1.44	0.08	trace	0.8	2.43	0.01	NP	0.02	2.55	0.01	trace	1.83	1.93	trace	NP
MW-312S	0.12	0.46	1.1	0.01	0.04	0.76	0.93	0.07	0.03	0.24	1.38	0.39	0.38	0.43	1.2	0.4	1.65	3.06	1.39	NP
MW-313S	NP	NP	trace	NP	NP	NP	trace	NP	trace	0.05	0.01	NP	trace	0.06	0.03	trace	trace	0.06	NP	trace
MW-326S	NP	NP	NP	NP	NP	NP	NP	trace	trace	0.02	NP	NP	NP	NP	NP	trace	0.01	NP	NP	trace
	Former Power Plant Area																			
M&E MW-5 (5)	0.08	0.04	0.05	0.29	0.02	0.14	0.01	0.33	trace	1.97	0.05	0.04	0.41	0.2	0.03	NP	0.02	2.95	NP	trace
MW-102 (4) (6)	NP	NP	NP	NP		NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-103 (4)	0.02	trace	trace	trace	trace	trace	trace	trace	NP	NP	NP	trace	NP	NP	NP	NP	NP	NP	NP	NP
MW-109 (4)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-314S	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP

Notes: Blank cells indicate well was not gauged during the event.
trace - trace amounts of NAPL were found on the probe
NP - No Product was detected
Well is Located in Former Gas Plant Area
Well is Located in Former Power Plant Area

- (1) Well was guaged by AES as part of their 1996 Site Investigation activities. Sheens were noted.
- (2) Well was gauged by AES as part of their 1996 Site Investigation activities. Floating product was noted.
- (3) Well was gauged by VHB as part of their 2006 Site Investigation activities. Inconsistent, but measurable LNAPL was present.
- (4) Well was gauged by VHB as part of their 2006 Site Investigation activities. Sheens were noted.
- (5) Casing was found broken on December 3, 2010. Repairs were made in March 2011.
- (6) Well was not located on January 29, 2013 due to snow.

TABLE 2D
DENSE NON-AQUEOUS PHASE LIQUID (DNAPL) WELL GAUGING DATA

Former Tidewater Facility
Pawtucket, Rhode Island

	DNAPL Thickness (feet)																
Date	4/23/2009	6/18/2009	5/17/2010	5/20/2010	6/16/2010	11/2/2010	11/19/2010	12/3/2010	1/24/2011	2/17/2011	3/29/2011	4/26/2011	5/4/2011	6/3/2011	6/29/2011	7/26/2011	10/18/2011
	Former Gas Plant Area																
MW-4 (1) (4)		NP			trace	trace	trace	trace	1.15	trace	trace	trace	trace	trace	trace	trace	trace
MW-303			NP		trace	2.53	0.55	0.50	trace	0.88	0.15	0.55	0.75	0.13	0.30	trace	0.80
MW-312S				NP	trace	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-312D				NP	trace	NP		NP	NP		NP	NP	NP	NP	NP	NP	NP
MW-313S			NP		NP	trace	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-339D								NP	NP	NP	trace	trace	NP	NP	NP	NP	trace
MW-341								trace	1.45	1.00	1.75	1.45	1.95	1.50	1.25	0.95	1.68
	Former Power Plant Area																
MW-103	NP	NP			NP	trace	0.08	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	South Fill Area																
MW-1 (2) (3)	0.29	0.80			trace	trace	NP	0.50	trace	NP	0.40	0.67		0.15	0.60	trace	trace
MW-320S			0.18		NP	1.88	NP	0.20	trace	trace	trace	trace		trace	trace	trace	0.98
MW-320D			3.70		1.10	8.98	1.50	10.00	3.20	2.15	4.15	3.38		4.50	4.50	2.50	7.05

Notes: Blank cells indicate well was not gauged during the event.
trace - trace amounts of NAPL were found on the probe
NP - No Product was detected
Well is Located in Former Gas Plant Area
Well is Located in Former Power Plant Area
Well is Located in South Fill Area

- (1) Well was gauged by AES as part of their 1996 Site Investigation activities. "Thick tar product" was noted at the bottom of the well.
(2) Well was guaged by AES as part of their 1996 Site Investigation activities. "Tar" was noted on bailer and tubing.
(3) Well was gauged by VHB as part of their 2006 Site Investigation activities. Inconsistent, but measurable DNAPL was present, with thicknesses of up to 2.5 feet.
(4) MW-4 was periodically gauged between October 2009 and January 2010 to assess thickness of DNAPL:

Date	Depth to Water (feet below ground surface)	DNAPL Thickness (feet)
10/30/2009	11.25	0.2
11/3/2009	11.29	NP
11/4/2009	11.46	0.1
11/12/2009	11.3	0.27
1/21/2010	8.75	0.15

TABLE 2D
DENSE NON-AQUEOUS PHASE LIQUID (DNAPL) WELL GAUGING DATA

Former Tidewater Facility
Pawtucket, Rhode Island

	DNAPL Thickness (feet)																			
Date	1/19/2012	4/18/2012	7/10/2012	10/15/2012	1/29/2013	4/26/2013	8/6/2013	10/29/2013	#####	4/24/2014	7/30/2014	10/22/2014	1/22/2015	4/27/2015	7/29/2015	11/11/2015	1/21/2016	4/30/2016	7/20/2016	10/31/2016
	Former Gas Plant Area																			
MW-4 (1) (4)	NP	NP	0.25	trace	trace	trace	0.7	NP	2.25	trace	0.05	0.05	trace	trace	trace	NP	trace	trace	trace	0.9
MW-303	0.32	1.35	1.19	3.74	2.29	5.55	5.25	4.6	3.85	5.59	1.5	4.8	3.75	3	5.1	4.9	6.34	5.4	4.77	4.35
MW-312S	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-312D	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-313S	NP	trace	NP	trace	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-339D	trace	trace	trace	NP	trace	trace	NP	trace	trace	trace	trace	trace	trace	NP	trace	trace	trace	0.2	trace	NP
MW-341	1.48	1.38	1.08	1.5	1.4	1.95	2.57	2	1.85	1.25	3	2.65	2.43	1.25	3	2.45	2.55	2.35	2.35	1.95
	Former Power Plant Area																			
MW-103	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	South Fill Area																			
MW-1 (2) (3)	trace	trace	NP	NP	trace	trace	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.01	trace	trace	NP
MW-320S	0.1	0.05	trace	0.75	trace	trace	trace	0.18	trace	0.15	trace	1.15	1.7	0.05	0.15	1.07	0.2	2.45	trace	1.3
MW-320D	1.1	8.67	1.05	2.56	8.45	8.15	7.85	8.14	13.72	13.9	13.7	13.4	13.7	13.2	13.6	13.9	14	13.01	13.6	14.2

Notes: Blank cells indicate well was not gauged during the event.
trace - trace amounts of NAPL were found on the probe
NP - No Product was detected
Well is Located in Former Gas Plant Area
Well is Located in Former Power Plant Area
Well is Located in South Fill Area

- (1) Well was gauged by AES as part of their 1996 Site Investigation activities. "Thick tar product" was noted at the bottom of the well.
(2) Well was guaged by AES as part of their 1996 Site Investigation activities. "Tar" was noted on bailer and tubing.
(3) Well was gauged by VHB as part of their 2006 Site Investigation activities. Inconsistent, but measurable DNAPL was present, with thicknesses of up to 2.5 feet.
(4) MW-4 was periodically gauged between October 2009 and January 2010 to assess thickness of DNAPL:

Date	Depth to Water (feet below ground surface)	DNAPL Thickness (feet)
#####	11.25	0.2
11/3/2009	11.29	NP
11/4/2009	11.46	0.1
#####	11.3	0.27
1/21/2010	8.75	0.15

TABLE 3A
SUMMARY OF LNAPL RECOVERY
Former Tidewater Facility
Pawtucket, Rhode Island

File No. 05.0043654.00
1/12/2017

Well ID	Date	Start Pumping	Depth to LNAPL (feet)	Depth to Water (feet)	Depth to Bottom (feet)	Estimated Volume Purged (gallons)	Tide Condition	Notes
MW-3	11/19/2010	9:22	10.47	10.54	17	0.20	Mid	
	2/17/2011	10:40	9.21	10.01	16.72	0.50	Mid	
	3/29/2011	11:59	10.6	12.31	17.05	0.25	Low	
	5/5/2011	13:31	9.22	9.49	17.1	0.20	Mid	
	6/3/2011	12:37	9.63	10.43	17.1	0.10	Mid	
MW-210	7/2/2010		9.6	9.75	17.3	0.05		
	2/17/2011	12:14	8.42	9.34	17.15	0.5	Low	
	3/29/2011	11:25	7.82	10.36	17.3	0.5	Low	
	5/5/2011	11:10	7.01	9.03	17.3	0.5	High	
	6/3/2011	11:50	8.05	9.05	17.3	0.5	Mid	
	6/29/2011	10:45	8.65	8.98	17.3	0.10	Mid	
	10/20/2011	11:14	7.12	8.22	17.3	1	Mid	
	1/20/2012	11:05	8.14	10.3	17.3	1	Low	
	4/26/2013	13:30	7.88	9.32	17.3	0.75	Low	
	8/8/2013	10:15	9.17	9.25	17.3	0.05	High	
	1/30/2014	12:30	9.48	10.28	17.3	0.50	Low	
	4/24/2014	13:40	6.57	9	17.3	1	High	
	4/27/2015	14:00	7.21	9.76	17.3	1	Low	
	1/21/2016	14:15	9.32	11.15	17.3	1.50	Low	
	4/30/2016	8:15	8.57	10.5	17.9	1.00	Low	
MW-312S	7/2/2010		10.02	10.11	23.5	0.05		
	11/2/2010	14:45	10.85	11.25	23.5	0.5	Mid	
	11/19/2010	9:40	9.45	9.58	23.5	0.25	Mid	
	5/5/2011	12:45	8.24	8.52	23.5	0.10	Mid	
	7/27/2011	16:30	10.25	10.35	23.5	0.25	Mid/High	
	10/20/2011	10:21	8.49	8.97	23.5	0.50	Mid	
	1/20/2012	9:40	9.19	9.66	23.5	0.25	Mid	
	4/19/2012	11:09	8.76	9.22	23.5	0.50	Low/Mid	
	7/12/2012	11:18	9.98	10.6	23.5	0.75	Mid	
	4/26/2013	14:30	8.42	9.18	23.5	1.00	Low	
	8/8/2013	10:00	8.4	9.38	23.5	0.75	High	
	4/24/2014	13:20	7.79	8.03	23.5	0.50	High	
	7/30/2014	14:00	8.99	10.37	23.5	1.50	High	
	10/24/2014	13:00	8.61	9	23.5	0.50	Low	
	1/22/2015	12:13	9.54	9.92	23.5	0.15	Low	
	4/27/2015	12:30	9.09	9.52	23.5	0.50	Low	
	7/29/2015	14:00	9.08	10.28	23.5	1.00	Low	
	1/22/2015	14:00	9.54	9.92	23.5	0.25	Low	
	4/29/2015	15:00	9.09	9.52	23.5	0.50	Low	
	7/29/2015	14:00	9.08	10.28	23.5	1.00	Low	
	11/13/2015	12:00	8.1	8.5	23.5	1.00	Low	
	1/21/2016	14:30	10.45	12.1	23.5	1.50	Low	
	4/30/2016	8:40	9.35	12.41	23.5	1.00	Low	
	7/20/2016	15:08	10.1	11.49	23.52	0.50	Low	
MW-313S	2/17/2011	11:56	9.59	9.81	24.76	0.10	Low	
	10/20/2011	12:35	8.85	8.9	24.76	0.10	Mid/High	
MW-326S	11/19/2010	9:20	11.61	11.91	26.6	0.25	Mid	
M&E MW-5	7/2/2010		6.43	6.6	14.6	0.05		
	11/19/2010	11:20	8.03	9.2	14.6	0.35	Low	
	3/29/2011	15:28	10.29	13.53	16.88	0.75	Mid	elevations adjusted for broken PVC
	5/5/2011	9:32	9.63	10.75	16.88	0.50	High	elevations adjusted for broken PVC
	6/3/2011	14:15	7.20	8.4	14.65	0.50	Low	elevations adjusted for broken PVC
	6/29/2011	13:05	8.00	8.4	14.65	0.50	Low	elevations adjusted for broken PVC
	10/20/2011	9:22	7.33	7.75	14.65	0.25	Low	elevations adjusted for broken PVC
	1/20/2012	8:12	6.73	6.95	14.65	0.10	Mid	elevations adjusted for broken PVC
	10/24/2012	14:27	8.05	8.22	14.65	0.20	Mid	elevations adjusted for broken PVC
	4/26/2013	13:00	6.99	7.13	14.65	0.25	Low	elevations adjusted for broken PVC
	10/30/2013	8:00	7.97	8.30	14.65	0.50	Mid	elevations adjusted for broken PVC
	4/24/2014	14:00	7.58	9.55	14.65	1.50	High	elevations adjusted for broken PVC
	1/22/2015	12:30	7.64	8.05	14.64	0.50	Low	elevations adjusted for broken PVC
	4/27/2015	12:00	7.9	8.10	14.64	0.50	Low	elevations adjusted for broken PVC
	4/30/2016	9:30	8.1	11.05	14.5	0.50	Low	elevations adjusted for broken PVC
MW-103	7/2/2010		10.31	10.32	16.82	trace		
	11/19/2010	12:00	10.35	10.36	16.85	trace	Low	Blebs in purge water

Notes:

Depth to bottom in this table are from 11/2/2010 gauging round, if not recorded

Well is located in Former Gas Plant Area

Well is located in Former Power Plant Area

TABLE 3B
SUMMARY OF DNAPL RECOVERY
Former Tidewater Facility
Pawtucket, Rhode Island

Well ID	Date	Start Pumping	Depth to Water (feet)	Depth to DNAPL (feet)	Depth to Bottom (feet)	Estimated Volume Purged (gallons)	Tide Condition	Notes
MW-4	7/2/2010		10.85	trace	15.5	0.05		
	11/19/2010	10:12	10.73	trace	15.95		Mid	
MW-303	7/2/2010		8.8	41.18	42	Trace		
	11/2/2010	14:10	10.12	39.32	42	0.75	Mid	Measured thickness of DNAPL from probe, was not able to get to bottom, so estimate by probe
	11/19/2010	10:15	8.74	41.6	42	0.10	Low	DNAPL is very viscous
	2/17/2011	12:44	6.99	40.97	42.02	0.10	Low	DNAPL is very viscous
	5/5/2011	10:32	6.12	41.1	41.7	0.05	High	DNAPL is very viscous
	6/29/2011	10:02	7.1	41.55	41.7	Trace	Mid	Was not able to recover any DNAPL due to extreme viscosity
	10/20/2011	11:00	6.78	40.94	41.8	Trace	Mid	Was not able to recover any DNAPL due to extreme viscosity
	1/20/2012	10:42	7.69	41.37	41.8	Trace	Low	Was not able to recover any DNAPL due to extreme viscosity
	4/19/2012	10:45	6.54	40.65	41.8	0.15	Low/Mid	DNAPL is very viscous
	8/8/2013	11:30	6.43	36.7	41.8	0.25	High	Pumped for approximately 30 minutes. Was not able to recover all the DNAPL due to extreme viscosity.
	10/30/2013	10:00	9.10	35.2	41.8	Trace	Mid	Pumped for approximately 20 minutes. Was not able to recover all the DNAPL due to extreme viscosity.
	4/24/2014	12:00	5.64	36.31	41.9	<0.1 gallons	High	Pumped for approximately 20 minutes. Was not able to recover all the DNAPL due to extreme viscosity.
	7/29/2015	14:00	6.46	36.9	42	Trace	Low	Was not able to recover all the DNAPL due to extreme viscosity.
	7/20/2016	15:20	10.02	37.1	41.87	1.25	Low	
	11/2/2016	14:30	9.68	37.85	42.2	<0.1	Low	Was not able to recover DNAPL due to extreme viscosity.
MW-312D	7/2/2010		10.37	trace	31.87	Trace		
MW-313S	7/2/2010		dry		24.8	Trace		
	11/19/2010	9:30	10.86	trace	24.9		Mid	Did not pump
MW-341	3/29/2011	10:38	6.88	28.35	30.15	0.25	Low	
	5/5/2011	10:27	8.45	28.15	30.15	0.5	High	
	6/3/2011	10:54	7.28	28.6	30.15	0.5	High	
	6/17/2011	9:50	7.56	28.55	30.15	0.1	High	
	6/29/2011	9:24	8.1	28.85	30.15	0.5	Mid/High	
	7/25/2011	15:00				0.5	High	Did not gauge, recover only.
	7/27/2011	17:07	8.93	29.15	30.15	1	High	
	7/28/2011	15:00	9.11	29.15	30.15	0.5	Mid	
	10/20/2011	10:05	7.77	29	30.15	0.5	Low/Mid	
	1/20/2012	9:18	7.21	28.82	30.15	0.5	Low/Mid	
	4/19/2012	10:38	9.26	28.77	30.15	0.5	Low/Mid	
	7/12/2012	11:50		28.72	30.15	1	Mid	
	10/24/2012	15:02	10.45	28.45	30.15	0.75	Mid	
	1/30/2013	12:45	6.79	28.75	30.15	1.5	Low/Mid	
	4/26/2013	15:15	7.1	28.2	30.15	1.5	Low	
	8/8/2013	11:00	8.08	27.58	30.15	1.25	High	
	10/30/2013	9:30	10.10	28.15	30.15	1	Mid	
	1/30/2014	12:00	10.15	28.3	30.15	1	Low	
	4/24/2014	13:00	6.08	28.24	30.15	1	High	
	7/30/2014	13:30	9.10	28.05	30.15	0.5	High	
	10/24/2014	13:30	11.18	27.51	30.15	1	Low	
	1/22/2015	16:00	8.2	27.72	30.15	1	Low	
	4/27/2015	14:00	6.45	28.9	30.15	1	Low	
	7/29/2015	14:00	9.44	27.15	30.15	1	Low	
	11/13/2015	12:00	10.73	27.7	30.15	1	Low	
	1/21/2016	14:00	9.62	27.6	30.15	1.50	Low	
	4/30/2016	9:15	7.42	27.8	30.15	1	Low	
	7/20/2016	15:35	9.66	27.71	30.06	0.5	Low	
	11/2/2016	15:40	10.92	28.2	30.15	1	Low	
MW-1	7/2/2010		17.99	22.9	22.72	0.25		
	11/19/2010	12:30	17.86	trace	22.75		Low	DNAPL on probe (0.25")
MW-320S	7/2/2010		6.4	9.23	10.8	Trace		
	11/19/2010	13:00	6.28	9.68	10.9		Low	Did not pump due to viscosity of DNAPL.
MW-320D	7/2/2010		8.15	15.6	23.2	0.25		
	11/2/2010	15:20	8.77	16.72	23.3		Mid	Was not able to recover any DNAPL due to extreme viscosity
	11/19/2010	13:15	10	24.2	26.4	0.1	Low	Measured from top of casing, DNAPL is very viscous

Notes:

- Depth to bottom in this table are from 11/2/2010 gauging round, if not recorded
- Well is located in Former Gas Plant Area
- Well is located in South Fill Area

TABLE 4A
SUMMARY OF GROUNDWATER VOC ANALYTICAL RESULTS
Former Tidewater Facility
Pawtucket, Rhode Island

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-7	MW 310S	MW 310D	MW-201	MW 208	MW 312S	MW 312D	MW 326S	MW 326D	MW 333S	MW 333D	MW 339S	MW 339D			
					11/01/2016	11/02/2016	11/02/2016	11/01/2016	11/01/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/01/2016	11/01/2016
					1611052-14	1611051-01	1611051-02	1611052-15	1611052-18	1611051-04	1611051-03	1611051-06	1611051-07	1611051-05	1611051-08	1611052-12	1611052-13			
					Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous			
EPA 8260	VOLATILE ORGANICS																			
	1,1,1,2-Tetrachloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,1,1-Trichloroethane	mg/L	68	3.1	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,1,2,2-Tetrachloroethane	mg/L	NE	NE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			
	1,1,2-Trichloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,1-Dichloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,1-Dichloroethene	mg/L	23	0.007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,1-Dichloropropene	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020			
	1,2,3-Trichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,2,3-Trichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,2,4-Trichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,2,4-Trimethylbenzene	mg/L	NE	NE	<0.0010	<0.0010	0.554	0.0051	<0.0010	0.091	0.348	0.0103	<0.0010	<0.0010	0.103	0.0248	0.437			
	1,2-Dibromo-3-Chloropropane	mg/L	NE	0.002	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050			
	1,2-Dibromoethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,2-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,2-Dichloroethane	mg/L	670	0.11	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,2-Dichloropropane	mg/L	140	3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,3,5-Trimethylbenzene	mg/L	NE	NE	<0.0010	<0.0010	0.147	<0.0010	<0.0010	0.0055	0.0177	0.0044	<0.0010	<0.0010	<0.0010	0.0114	0.121			
	1,3-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,3-Dichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,4-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	1,4-Dioxane - Screen	mg/L	NE	NE	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500			
	1-Chlorohexane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	2,2-Dichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	2-Butanone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100			
	2-Chlorotoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	2-Hexanone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100			
	4-Chlorotoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	4-Isopropyltoluene	mg/L	NE	NE	<0.0010	<0.0010	0.013	<0.0010	<0.0010	0.0023	0.008	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0098			
	4-Methyl-2-Pentanone	mg/L	NE	NE	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250			
	Acetone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0164	<0.0100	0.0115	<0.0100	<0.0100	0.0148	<0.0100			
	Benzene	mg/L	18	0.14	<0.0010	<0.0010	0.617	0.0686	0.001	0.0241	5.97	0.335	0.0024	<0.0010	0.327	<0.0010	0.0129			
	Bromobenzene	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020			
	Bromochloromethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	Bromodichloromethane	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006			
	Bromoform	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	Bromomethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020			
	Carbon Disulfide	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	Carbon Tetrachloride	mg/L	NE	0.07	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	Chlorobenzene	mg/L	56	3.2	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	Chloroethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020			
	Chloroform	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	Chloromethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020			
	cis-1,2-Dichloroethene	mg/L	69	2.4	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			
	cis-1,3-Dichloropropene	mg/L	NE	NE	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004			
	Dibromochloromethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010			

Notes

NE = Not Established ND = Not Detected

"B" qualifier indicates that the analyte was present in the method blank

"D" qualifier indicates analytes reported from a diluted run of the original analysis.

"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.

S = Shallow Screened Well

D = Deep Screened Well

NFA = North Fill Area

FGPA = Former Gas Plant Area

FPPA = Former Power Plant Area

SFA = South Fill Area

Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.

Gray shaded cells and bold text indicate the concentration exceeds the GB Groundwater Objective.

Underlined concentrations exceed the RIDEM GB Groundwater Upper Concentration Limit

Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.

This table presents analytical results from 2016. The January 2011 SIDR, the July 2011 RAE and previous groundwater monitoring reports presents historical analytical results.

TABLE 4A
SUMMARY OF GROUNDWATER VOC ANALYTICAL RESULTS

Former Tidewater Facility
Pawtucket, Rhode Island

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	M&E MW-2 11/01/2016 1611052-17	MW6 11/01/2016 1611052-08	MW-109 11/01/2016 1611052-16	MW 314S 11/01/2016 1611052-10	MW 314D 11/01/2016 1611052-11	MW-316D 11/01/2016 1611052-07	MW-337 11/01/2016 1611052-09	MW-107 11/01/2016 1611052-05	MW-318S 11/01/2016 1611052-01	MW-318D 11/01/2016 1611052-02	MW-334S 11/01/2016 1611052-03	MW-334D 11/01/2016 1611052-04
					Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
EPA 8260	VOLATILE ORGANICS															
	1,1,1,2-Tetrachloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1,1-Trichloroethane	mg/L	68	3.1	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1,2,2-Tetrachloroethane	mg/L	NE	NE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1,1,2-Trichloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1-Dichloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1-Dichloroethene	mg/L	23	0.007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1-Dichloropropene	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	1,2,3-Trichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,3-Trichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,4-Trichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,4-Trimethylbenzene	mg/L	NE	NE	<0.0010	<0.0010	0.0058	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0183	<0.0010	0.0014	<0.0010
	1,2-Dibromo-3-Chloropropane	mg/L	NE	0.002	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	1,2-Dibromoethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dichloroethane	mg/L	670	0.11	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dichloropropane	mg/L	140	3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3,5-Trimethylbenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0075	<0.0010	<0.0010	<0.0010
	1,3-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3-Dichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,4-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,4-Dioxane - Screen	mg/L	NE	NE	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
	1-Chlorohexane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	2,2-Dichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	2-Butanone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	2-Chlorotoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	2-Hexanone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	4-Chlorotoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4-Isopropyltoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4-Methyl-2-Pentanone	mg/L	NE	NE	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
	Acetone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	Benzene	mg/L	18	0.14	<0.0010	0.0185	0.312	<0.0010	<0.0010	<0.0010	0.008	<0.0010	0.0426	<0.0010	0.0028	0.0022
	Bromobenzene	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Bromochloromethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Bromodichloromethane	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
	Bromoform	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Bromomethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Carbon Disulfide	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Carbon Tetrachloride	mg/L	NE	0.07	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chlorobenzene	mg/L	56	3.2	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chloroethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Chloroform	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chloromethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	cis-1,2-Dichloroethene	mg/L	69	2.4	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011
	cis-1,3-Dichloropropene	mg/L	NE	NE	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
	Dibromochloromethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Notes

NE = Not Established ND = Not Detected

"B" qualifier indicates that the analyte was present in the method blank

"D" qualifier indicates analytes reported from a diluted run of the original analysis.

"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.

S = Shallow Screened Well

D = Deep Screened Well

NFA = North Fill Area

FGPA = Former Gas Plant Area

FPPA = Former Power Plant Area

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Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.

Gray shaded cells and bold text indicate the concentration exceeds the GB Groundwater Objective.

Underlined concentrations exceed the RIDEM GB Groundwater Upper Concentration Limit

Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.

This table presents analytical results from 2016. The January 2011 SIDR, the July 2011 RAE and previous groundwater monitoring reports presents historical analytical results.

TABLE 4B
SUMMARY OF GROUNDWATER VOC QA/QC ANALYTICAL RESULTS
Former Tidewater Facility
Pawtucket, Rhode Island

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW 310S 11/02/2016 1611051-01	BD11216 11/02/2016 1611051-09	MW-107 11/01/2016 1611052-05	BD-1116 11/01/2016 1611052-06	Trip Blank 11/01/2016 1611052-19
					Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
EPA 8260	VOLATILE ORGANICS								
	1,1,1,2-Tetrachloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1,1-Trichloroethane	mg/L	68	3.1	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1,2,2-Tetrachloroethane	mg/L	NE	NE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1,1,2-Trichloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1-Dichloroethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1-Dichloroethene	mg/L	23	0.007	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,1-Dichloropropene	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	1,2,3-Trichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,3-Trichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,4-Trichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2,4-Trimethylbenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dibromo-3-Chloropropane	mg/L	NE	0.002	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	1,2-Dibromoethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dichloroethane	mg/L	670	0.11	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,2-Dichloropropane	mg/L	140	3	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3,5-Trimethylbenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,3-Dichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,4-Dichlorobenzene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	1,4-Dioxane - Screen	mg/L	NE	NE	<0.500	<0.500	<0.500	<0.500	<0.500
	1-Chlorohexane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	2,2-Dichloropropane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	2-Butanone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	2-Chlorotoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	2-Hexanone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	4-Chlorotoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4-Isopropyltoluene	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4-Methyl-2-Pentanone	mg/L	NE	NE	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250
	Acetone	mg/L	NE	NE	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
	Benzene	mg/L	18	0.14	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Bromobenzene	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Bromochloromethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Bromodichloromethane	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
	Bromoform	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Bromomethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Carbon Disulfide	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Carbon Tetrachloride	mg/L	NE	0.07	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chlorobenzene	mg/L	56	3.2	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chloroethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	Chloroform	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Chloromethane	mg/L	NE	NE	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	cis-1,2-Dichloroethene	mg/L	69	2.4	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	cis-1,3-Dichloropropene	mg/L	NE	NE	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
	Dibromochloromethane	mg/L	NE	NE	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Former Tidewater Facility
Pawtucket, Rhode Island

Notes

NE = Not Established ND = Not Detected

"B" qualifier indicates that the analyte was present in the method blank

"D" qualifier indicates analytes reported from a diluted run of the original analysis.

"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.

S = Shallow Screened Well
D = Deep Screened Well

NFA = North Fill Area

FGPA = Former Gas Plant Area

FPPA = Former Power Plant Area

SFA = South Fill Area

Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.

Gray shaded cells and bold text indicate the concentration exceeds the GB Groundwater Objective.

Underlined concentrations exceed the RIDEM GB Groundwater Upper Concentration Limit

Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.

Blind Duplicate sample BD11216 was collected from MW-310S

Blind Duplicate sample BD-1116 was collected from MW-107

TABLE 5A
GROUNDWATER MONITORING DATA
North Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-5											
	Collected By:		AES	VHB	GZA		GZA		GZA		GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		July 2010		Dec 2010		July 2011	July 2012	Aug 2013	Oct 2014
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (5)	Note (5)			Note (2)		Note (6)		Note (2)	Note (2)	Note (2)	Note (2)
					Result	DL								
VOCs (ppm)														
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001								
1,1-Dichloroethene	23	0.007			<	0.001								
1,2,4-Trimethylbenzene	NE	NE			<	0.001								
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005								
1,3,5-Trimethylbenzene	NE	NE			<	0.001								
4-Isopropyltoluene	NE	NE												
Acetone	NE	NE			<	0.025								
Benzene	18	0.14			<	0.001								
Carbon Disulfide	NE	NE												
Carbon Tetrachloride	NE	0.07			<	0.001								
Chloroform	NE	NE			<	0.001								
cis-1,2-Dichloroethene	69	2.4			<	0.001								
Ethylbenzene	16	1.6			<	0.001								
Isopropylbenzene	NE	NE			<	0.001								
Methyl tert-Butyl Ether	NE	5			<	0.001								
Methylene Chloride	NE	NE			<	0.002								
Naphthalene	NE	2.67			<	0.002								
n-Butylbenzene	NE	NE			<	0.001								
n-Propylbenzene	NE	NE			<	0.001								
sec-Butylbenzene	NE	NE			<	0.001								
Styrene	50	2.2			<	0.001								
tert-Butylbenzene	NE	NE			<	0.001								
Tertiary-amyl methyl ether	NE	NE			<	0.001								
Tetrachloroethene	NE	0.15			<	0.001								
Toluene	21	1.7			<	0.001								
Trichloroethene	87	0.54			<	0.001								
Vinyl Chloride	NE	0.002			<	0.001								
Xylene O	NE	NE			<	0.001								
Xylene P,M	NE	NE			<	0.002								
Xylenes (Total)	NE	NE			<	0.003								
Total VOCs	NE	NE			ND									
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE			<	0.2								
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE			<	0.002								
Acenaphthene	NE	NE			<	0.002								
Acenaphthylene	NE	NE			<	0.002								
Anthracene	NE	NE			<	0.002								
Benzo [a] Anthracene	NE	NE			<	0.002								
Benzo [a] Pyrene	NE	NE			<	0.002								
Benzo [b] Fluoranthene	NE	NE			<	0.002								
Benzo [g,h,i] Perylene	NE	NE			<	0.002								
Benzo [k] Fluoranthene	NE	NE			<	0.002								
Chrysene	NE	NE			<	0.002								
Dibenzo [a,h] Anthracene	NE	NE			<	0.002								
Fluoranthene	NE	NE			<	0.002								
Fluorene	NE	NE			<	0.002								
Indeno [1,2,3-cd] Pyrene	NE	NE			<	0.002								
Naphthalene	NE	2.67			<	0.002								
Phenanthrene	NE	NE			<	0.002								
Pyrene	NE	NE			<	0.002								
INORGANICS (ppm)														
Total Cyanide	NE	NE			0.020	0.010								
Dissolved Free Cyanide	NE	NE			<	0.010								
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5B
GROUNDWATER MONITORING DATA
North Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-7													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA	GZA	GZA	GZA	GZA	GZA	
	Sample Date:		1996	2006	Jan 2010		July 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O							Note (6)							
VOCs (ppm)			Result	Result	Result	DL	Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.002		<	0.002	<0.005	<0.005	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.001	<0.001	<0.0010
Acetone	NE	NE			<	0.025	<	0.010		<	0.010	<0.01	<0.01	<0.01	<0.01	<0.0100
Benzene	18	0.14	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE		0.0048	<	0.001	<	0.001		<	0.001	<0.001	0.0018	<0.001	J 0.0005	<0.0010
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Isopropylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE			<	0.002	<	0.002		<	0.002	<0.002	<0.002	<0.002	<0.002	<0.0020
Naphthalene	NE	2.67		<0.001	<	0.002	0.0035	0.002		<	0.002	<0.001	<0.001	<0.001	<0.001	<0.0010
n-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2	<0.02		<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
tert-Butylbenzene	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	J 0.0003	<0.0010
Toluene	21	1.7	<0.02		<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	0.0003 J	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Xylene P,M	NE	NE	<0.02	<0.002	<	0.002	<	0.002		<	0.002	<0.002	<0.002	<0.002	<0.002	<0.0020
Xylenes (Total)	NE	NE	<0.04	<0.03	<	0.003	<	0.003		<	0.003	<0.003	<0.002	<0.003	<0.002	<0.0020
Total VOCs	NE	NE	ND	0.0048	ND		0.0035			ND		ND	0.0021	ND	0.0008	ND
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE			<	0.2	<	0.2		<	0.2	<0.2	<0.19	<0.19		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Acenaphthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Acenaphthylene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [a] Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [a] Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Chrysene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Fluorene	NE	NE	<0.02	<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Indeno [1,2,3-cd] Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Naphthalene	NE	2.67	<0.02	<0.0003	<	0.002	<	0.002		<	0.002	0.001	0.0004	0.0012		
Phenanthrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
INORGANICS (ppm)																
Total Cyanide	NE	NE	<0.02	<0.05	<	0.010	<	0.010		0.02	0.010	0.0205	0.0316	0.0454		
Dissolved Free Cyanide	NE	NE		<0.05	<	0.010	<	0.010		<	0.010	<0.005	0.0239	0.02		
Physiologically Available Cyanide	NE	NE		<0.05												
Arsenic	NE	NE	<0.002	<0.0025												
Beryllium	NE	NE	<0.002	<0.0005												
Chromium	NE	NE	<0.024	<0.010												
Copper	NE	NE	<0.024	<0.010												
Lead	NE	NE	<0.05	<0.0025												
Nickel	NE	NE	<0.024	<0.025												
Zinc	NE	NE	0.023	<0.025												
Dissolved Arsenic	NE	NE		<0.0025												
Dissolved Beryllium	NE	NE		<0.0005												
Dissolved Chromium	NE	NE		<0.010												
Dissolved Copper	NE	NE		<0.010												
Dissolved Lead	NE	NE		<0.0025												
Dissolved Nickel	NE	NE		<0.025												
Dissolved Zinc	NE	NE		<0.025												

Notes:	
	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5C
GROUNDWATER MONITORING DATA
North Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-310S											
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)					
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010
Acetone	NE	NE					<	0.01		<	0.01	<0.01	<0.01	<0.0100
Benzene	18	0.14					<	0.001		<	0.001	0.0029	0.0035	0.002
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6					<	0.001		<	0.001	0.0012	0.0004 J	<0.0010
Isopropylbenzene	NE	NE					<	0.001		<	0.001	<0.001	0.0004 J	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE					<	0.002		<	0.002	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					<	0.002		<	0.002	<0.001	<0.001	<0.0010
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2					<	0.001		<	0.001	<0.001	<0.001	<0.0010
tert-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE					<	0.001		<	0.001	<0.001	0.0006 J	<0.0010
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.002	<0.002	<0.0020
Xylenes (Total)	NE	NE					<	0.003		<	0.003	<0.003	0.0006 J	<0.003
Total VOCs	NE	NE					ND			ND		0.0041	0.0049	0.0033
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					0.41	0.2		<	0.2	<0.2	<0.19	<0.19
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Acenaphthene	NE	NE					<	0.002		<	0.002	0.0004	0.0008	0.0021
Acenaphthylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	0.0003
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Fluorene	NE	NE					<	0.002		<	0.002	<0.0002	0.0002	0.0006
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Naphthalene	NE	2.67					<	0.002		<	0.002	0.0004	0.0002	0.0002
Phenanthrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
INORGANICS (ppm)														
Total Cyanide	NE	NE					0.090	0.010		0.06	0.010	0.0531	0.0548	0.069
Dissolved Free Cyanide	NE	NE					<	0.010		<	0.010	<0.005	0.0414	0.0685
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

- Notes:
- D

E

J

B

NE

Bold Text

(1)

(2)

(3)

(4)

(5)

(6)
- Blank cells indicate that the parameter was not analyzed during this sampling round

"D" qualifier indicates analytes reported from a diluted run of the original analysis.

"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value

"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.

"B" qualifier indicates that the analyte was present in the method blank

Regulatory Limit is not established

ND = Not Detected

= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)

=detection limit equals or exceeds the RIDEM GB Groundwater Objective

Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.

Well was not sampled because there was limited water

NAPL was noted to be present

Well was not sampled because it had not been installed yet.

Well was not sampled because of an unknown reason

Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5D
GROUNDWATER MONITORING DATA
North Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-310D											
	Collected By:		AES	VHB	GZA	GZA		GZA	GZA		GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010	June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)			Note (6)						
VOCs (ppm)						Result	DL		Result	DL	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE				<	0.025		<	0.05	<0.001	0.13 D	<0.100	<0.100
1,1-Dichloroethene	23	0.007				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
1,2,4-Trimethylbenzene	NE	NE				0.32	0.025		0.64	0.05	0.712	0.473 D	0.652	0.577
1,2-Dibromo-3-Chloropropane	NE	0.002				<	0.050		<	0.10	<0.005	<0.5 D	<0.500	<0.500
1,3,5-Trimethylbenzene	NE	NE				0.84	0.025		0.17	0.05	0.18	0.102 D	0.162	0.148
4-Isopropyltoluene	NE	NE									0.017	<0.1 D	<0.100	0.015
Acetone	NE	NE				<	0.250		<	0.50	<0.01	<1 D	<1.00	<1.00
Benzene	18	0.14				0.29	0.025		0.65	0.05	0.618	0.678 D	0.652	0.739
Carbon Disulfide	NE	NE							<	0.05	<0.001	<0.1 D	<0.100	<0.100
Carbon Tetrachloride	NE	0.07				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
Chloroform	NE	NE				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
cis-1,2-Dichloroethene	69	2.4				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
Ethylbenzene	16	1.6				0.4	0.025		0.92	0.05	1.07	0.72 D	0.918	0.975
Isopropylbenzene	NE	NE				0.05	0.025		0.092	0.05	0.101	0.063 J D	<0.100	E 0.108
Methyl tert-Butyl Ether	NE	5				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
Methylene Chloride	NE	NE				<	0.050		<	0.10	<0.002	<0.2 D	<0.200	<0.200
Naphthalene	NE	2.67				3.9	0.050		6.8	0.10	9.8	6.6 D	8.96	9.75
n-Butylbenzene	NE	NE				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
n-Propylbenzene	NE	NE				<	0.025		<	0.05	0.0524	<0.1 D	<0.100	0.0438
sec-Butylbenzene	NE	NE				<	0.025		<	0.05	0.005	<0.1 D	<0.100	0.0019
Styrene	50	2.2				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	0.0235
tert-Butylbenzene	NE	NE				<	0.025		<	0.05	<0.100	<0.1 D	<0.100	<0.100
Tertiary-amyl methyl ether	NE	NE									<0.001	<0.1 D	<0.100	<0.100
Tetrachloroethene	NE	0.15				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
Toluene	21	1.7				0.061	0.025		0.19	0.05	0.198	0.174 D	0.173	0.213
Trichloroethene	87	0.54				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
Vinyl Chloride	NE	0.002				<	0.025		<	0.05	<0.001	<0.1 D	<0.100	<0.100
Xylene O	NE	NE				0.33	0.025		0.66	0.05	0.735	0.489 D	0.646	0.64
Xylene P,M	NE	NE				0.29	0.050		0.67	0.10	0.775	0.478 D	0.659	0.709
Xylenes (Total)	NE	NE				0.62	0.075		1.33	0.15	1.51	0.967 D	1.3	1.35
Total VOCs	NE	NE				6.48			10.79		14.26	9.907	12.822	13.9432
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE				6.8	1		8.7	0.2	11.6	13.5	11.6	
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE				0.17 D	0.05		0.2	0.01	0.394	0.403 D	0.319	
Acenaphthene	NE	NE				0.088	0.002		0.054	0.002	0.158	0.0914 D	0.115	
Acenaphthylene	NE	NE				0.027	0.002		0.023	0.002	0.064	0.0454 D	0.0436	
Anthracene	NE	NE				0.010	0.002		<	0.002	<0.02	0.0024 D	<0.0093	
Benzo [a] Anthracene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Benzo [a] Pyrene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Benzo [b] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Benzo [g,h,i] Perylene	NE	NE				<	0.002		<	0.002	<0.02	<0.0019 D	<0.0093	
Benzo [k] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Chrysene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Dibenzo [a,h] Anthracene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Fluoranthene	NE	NE				<	0.002		<	0.002	<0.02	<0.0019 D	<0.0093	
Fluorene	NE	NE				0.022	0.002		0.018	0.002	0.047	0.0311 D	0.0354	
Indeno [1,2,3-cd] Pyrene	NE	NE				<	0.002		<	0.002	<0.02	<0.0005 D	<0.0023	
Naphthalene	NE	2.67				2.2 D	0.05		2.5	0.04	5.76	4.57 D	4.87	
Phenanthrene	NE	NE				0.010	0.002		0.012	0.002	0.029	0.0207 D	0.0205	
Pyrene	NE	NE				<	0.002		<	0.002	<0.02	<0.0019 D	<0.0093	
INORGANICS (ppm)														
Total Cyanide	NE	NE				0.18	0.010		0.12	0.010	0.132	0.139	0.136	
Dissolved Free Cyanide	NE	NE				0.070	0.010		0.15	0.010	0.0293	0.133	0.135	
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5E
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-201													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)						Note (6)							
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE		0.0907	0.017	0.001	0.0094	0.001		0.0047	0.001	0.0019	0.0248	0.0066	0.0219	0.0051
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.005		<	0.005	<0.005	<0.005	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE		0.0024	<	0.001	<	0.001		<	0.001	<0.001	0.0024	<0.001	0.0012	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.001	J 0.0007	<0.0010
Acetone	NE	NE			<	0.025	<	0.025		<	0.025	<0.01	<0.01	<0.01	0.0239	<0.0100
Benzene	18	0.14		0.0047	0.032	0.001	0.050	0.001		0.050	0.001	0.0397	0.0948 D	0.133	0.133	0.0686
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	0.0094	0.0019	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6		0.0228	0.055	0.001	0.064	0.001		0.035	0.001	0.0163	0.0658	0.0166	0.0346	0.0061
Isopropylbenzene	NE	NE		0.0164	0.025	0.001	0.020	0.001		0.017	0.001	0.0129	0.0274	0.0172	0.0252	0.0151
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE			<	0.002	<	0.002		<	0.002	<0.002	<0.002	<0.002	<0.002	<0.0020
Naphthalene	NE	2.67		0.0028	0.019	0.002	0.020	0.002		0.010	0.002	0.0032	0.0781	0.0115	0.0198	0.0028
n-Butylbenzene	NE	NE		<0.001	0.0067	0.001	0.0062	0.001		0.0056	0.001	0.0056	0.0068	0.0048	0.007	0.0041
n-Propylbenzene	NE	NE		0.0149	0.018	0.001	0.018	0.001		0.015	0.001	0.0124	0.0227	0.0142	0.02	0.012
sec-Butylbenzene	NE	NE		0.0031	0.0024	0.001	0.0024	0.001		0.0021	0.001	0.0018	0.0026	0.0016	0.0024	0.0016
Styrene	50	2.2			<	0.001	<	0.001		<	0.001	<0.001	0.0043	0.0015	0.0042	<0.0010
tert-Butylbenzene	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	J 0.0003	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7		0.0018	<	0.001	0.0024	0.001		<	0.001	<0.001	<0.001	0.0012	0.0026	<0.0010
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE		0.0113	0.021	0.001	0.0062	0.001		0.0053	0.001	0.0021	0.0252	0.0056	0.0239	0.0026
Xylene P,M	NE	NE		0.0024	<	0.002	<	0.002		<	0.002	<0.002	0.0051	<0.002	B <0.0040	<0.0020
Xylenes (Total)	NE	NE		0.0137	0.021	0.003	0.0062	0.003		0.0053	0.003	0.0021	0.0303	0.0056	0.0265	0.0026
Total VOCs	NE	NE		0.1733	0.1961		0.1986			0.1447		0.0959	0.3987	0.2232	0.3226	0.118
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE			0.66	0.2	<	0.2		0.6	0.2	1.77	1.86	1.65		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE		0.00076	<	0.002	0.0068	0.002		<	0.002	<0.0002	0.0004	0.0002		
Acenaphthene	NE	NE		0.0088	0.0052	0.002	<	0.002		0.0053 D	0.002	0.006	0.0061	0.0052		
Acenaphthylene	NE	NE		0.00209	<	0.002	<	0.002		<	0.002	0.002	0.0019	0.0011		
Anthracene	NE	NE		0.0035	<	0.002	<	0.002		<	0.002	0.004	0.003	0.0025		
Benzo [a] Anthracene	NE	NE		0.00102	<	0.002	<	0.002		<	0.002	0.0004	0.0005	0.0003		
Benzo [a] Pyrene	NE	NE		0.00085	<	0.002	<	0.002		<	0.002	0.0003	0.0003	0.0001		
Benzo [b] Fluoranthene	NE	NE		0.00051	<	0.002	<	0.002		<	0.002	0.0003	0.0003	0.0001		
Benzo [g,h,i] Perylene	NE	NE		0.00035	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE		0.00063	<	0.002	<	0.002		<	0.002	<0.0002	0.0001	<0.00005		
Chrysene	NE	NE		0.00112	<	0.002	<	0.002		<	0.002	0.0004	0.0005	0.0002		
Dibenzo [a,h] Anthracene	NE	NE		0.00023	<	0.002	<	0.002		<	0.002	<0.0002	0.00006	<0.00005		
Fluoranthene	NE	NE		0.00503	<	0.002	<	0.002		<	0.002	0.002	0.0014	0.0015		
Fluorene	NE	NE		0.014	0.011	0.002	<	0.002		0.011 D	0.002	0.012	0.0108	0.0103		
Indeno [1,2,3-cd] Pyrene	NE	NE		0.00039	<	0.002	<	0.002		<	0.002	<0.0002	0.0002	0.00008		
Naphthalene	NE	2.67		0.012	0.0069	0.002	<	0.002		0.0042 D	0.002	0.002	0.0306 D	0.0065		
Phenanthrene	NE	NE		0.012	0.085	0.002	<	0.002		0.086 D	0.002	0.012	0.0094	0.0075		
Pyrene	NE	NE		0.00356	<	0.002	<	0.002		<	0.002	0.003	0.0024	0.0019		
INORGANICS (ppm)																
Total Cyanide	NE	NE		2.52	4.1	0.010	3.5	0.010		4.0	0.010	0.0075	3.68 D	1.16		
Dissolved Free Cyanide	NE	NE		<0.05	0.020	0.010	0.15	0.010		0.13	0.010	0.0067	2.37 D	1		
Physiologically Available Cyanide	NE	NE		0.215												
Arsenic	NE	NE		<0.0050												
Beryllium	NE	NE		<0.001												
Chromium	NE	NE		<0.020												
Copper	NE	NE		<0.020												
Lead	NE	NE		0.0181												
Nickel	NE	NE		<0.050												
Zinc	NE	NE		<0.050												
Dissolved Arsenic	NE	NE		<0.0050												
Dissolved Beryllium	NE	NE		<0.001												
Dissolved Chromium	NE	NE		<0.020												
Dissolved Copper	NE	NE		<0.020												
Dissolved Lead	NE	NE		<0.0050												
Dissolved Nickel	NE	NE		<0.050												
Dissolved Zinc	NE	NE		<0.050												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5F
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-208													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA	GZA	GZA	GZA	GZA	GZA	
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)						Note (6)							
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE	<0.001	<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	0.0012	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.002	<	0.002		<	0.002	<0.005	<0.005	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE	<0.001	<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	J 0.0003	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	0.0009 J	<0.001	J 0.0003	<0.0010
Acetone	NE	NE			<	0.025	<	0.01		<	0.01	<0.01	<0.01	<0.01	J 0.0080	<0.0100
Benzene	18	0.14	0.0016	0.004	0.001	<	0.001			<	0.001	0.0017	0.0006 J	0.0016	0.0032	0.001
Carbon Disulfide	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE	<0.001	<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6	0.0012	0.0033	0.001	<	0.001			0.0037	0.001	0.005	0.0096	<0.001	0.0012	<0.0010
Isopropylbenzene	NE	NE	0.0126	0.011	0.001	<	0.001			0.0037	0.001	0.0037	0.0027	<0.001	J 0.0004	<0.0010
Methyl tert-Butyl Ether	NE	5	<0.001	<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE													<0.002	<0.0020
Naphthalene	NE	2.67	0.0014	0.0023	0.002	<	0.002			0.0021	0.002	0.0028	<0.001	<0.001	0.0187	<0.0010
n-Butylbenzene	NE	NE	<0.001	0.015	0.001	0.0012	0.001			0.0076	0.001	0.0154	0.0132	<0.001	<0.001	0.0034
n-Propylbenzene	NE	NE	0.0075	0.0090	0.001	<	0.001			0.0021	0.001	0.0019	0.0012	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE	0.0092	0.0074	0.001	<	0.001			0.0068	0.001	0.0077	0.0066	0.0032	0.0024	0.0026
Styrene	50	2.2		<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	J 0.0001	<0.0010
tert-Butylbenzene	NE	NE		<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15		<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7	<0.001	0.0017	0.001	<	0.001			<	0.001	<0.001	0.0004 J	<0.001	J 0.0004	<0.0010
Trichloroethene	87	0.54		<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002		<	0.001	<	0.001			<	0.001	<0.001	<0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE	0.0036	0.0025	0.001	<	0.001			0.002	0.001	0.0039	0.0044	<0.001	0.001	<0.0010
Xylene P,M	NE	NE	<0.002	<	0.002	<	0.002			<	0.002	<0.002	0.0009 J	<0.002	J 0.0011	<0.0020
Xylenes (Total)	NE	NE	0.0036	0.0025	0.003	<	0.003			0.002	0.003	0.0039	0.0053	<0.003	0.0021	<0.0020
Total VOCs	NE	NE	0.0371	0.056		0.0012				0.028	0.0421	0.0405	0.0048	0.0383		0.007
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE			0.57	0.2	0.8	0.2		0.31	0.2	1	0.9	0.48		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE	<0.0002	<	0.002	0.033	0.002			<	0.002	<0.0002	<0.0002	0.0002		
Acenaphthene	NE	NE	0.00156	<	0.002	0.0067	0.002			<	0.002	0.003	0.0023	0.0014		
Acenaphthylene	NE	NE	0.0013	<	0.002	<	0.002			<	0.002	0.002	0.002	0.0005		
Anthracene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	0.0005	0.0005	0.0002		
Benzo [a] Anthracene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [a] Pyrene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Chrysene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Fluoranthene	NE	NE	<0.0002	<	0.002	<	0.002			<	0.002	0.0003	0.0002	<0.0002		
Fluorene	NE	NE	0.00139	<	0.002	0.011	0.002			<	0.002	0.002	0.0015	0.002		
Indeno [1,2,3-cd] Pyrene	NE	NE	<0.0003	<	0.002	<	0.002			<	0.002	<0.0002	<0.00005	<0.00005		
Naphthalene	NE	2.67	0.00094	<	0.002	0.0076	0.002			<	0.002	0.002	0.0013	0.0047		
Phenanthrene	NE	NE	0.00074	<	0.002	0.01	0.002			<	0.002	0.002	0.002	0.0012		
Pyrene	NE	NE	0.00027	<	0.002	<	0.002			<	0.002	0.0005	0.0003	0.0002		
INORGANICS (ppm)																
Total Cyanide	NE	NE		0.17	0.010	0.010	0.050	0.010		0.030	0.010	0.0299	0.0302	0.108		
Dissolved Free Cyanide	NE	NE	<0.06	<	0.010	<	0.010			<	0.010	<0.005	0.0237	0.09		
Physiologically Available Cyanide	NE	NE		0.073												
Arsenic	NE	NE		0.0155												
Beryllium	NE	NE	<0.001													
Chromium	NE	NE	<0.020													
Copper	NE	NE	<0.020													
Lead	NE	NE	<0.0050													
Nickel	NE	NE	<0.050													
Zinc	NE	NE	<0.050													
Dissolved Arsenic	NE	NE	<0.0050													
Dissolved Beryllium	NE	NE	<0.001													
Dissolved Chromium	NE	NE	<0.020													
Dissolved Copper	NE	NE	<0.020													
Dissolved Lead	NE	NE	<0.0050													
Dissolved Nickel	NE	NE	<0.050													
Dissolved Zinc	NE	NE	<0.050													

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5G
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-312S													
	Collected By:		AES	VHB	GZA	GZA		GZA	GZA	GZA	GZA	GZA	GZA	GZA	GZA	
	Sample Date:		1996	2006	Jan 2010	July 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016	
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)	Note (3)		Note (6)	Note (3)		Note (3)	Note (3)	Note (3)	Note (3)	Note (3)	Note (3)
VOCs (ppm)						Result	DL		Result	DL	Result	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE				0.18	0.025		0.26	0.05	0.186	0.104 D	0.114	0.093	0.091	
1,2-Dibromo-3-Chloropropane	NE	0.002				<	0.050		<	0.10	<0.1	<0.5 D	<0.005	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE				0.05	0.025		0.063	0.05	<0.05	0.024 J D	0.0131	0.0177	0.0055	
4-Isopropyltoluene	NE	NE									<0.05	<0.1 D	0.0026	0.0036	0.0023	
Acetone	NE	NE				<	0.250		<	0.50	<0.5	<1 D	0.0347	J 0.0031	<0.0100	
Benzene	18	0.14				0.052	0.025		0.13	0.05	0.0685	<0.1 D	0.0437	0.0295	0.0241	
Carbon Disulfide	NE	NE							<	0.05	<0.05	<0.1 D	0.0097	<0.0010	<0.0010	
Carbon Tetrachloride	NE	0.07				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6				0.84	0.025		1.1	0.05	0.856	0.546 D	0.588	0.606	0.466	
Isopropylbenzene	NE	NE				0.04	0.025		0.053	0.05	<0.05	0.022 J D	0.0235	0.0333	0.0249	
Methyl tert-Butyl Ether	NE	5				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE				<	0.025		<	0.05	<0.05	<0.1 D	<0.002	<0.002	<0.002	<0.0020
Naphthalene	NE	2.67				2.8	0.050		4.3	0.10	2.85	2.03 D	2.03	1.93	0.565	
n-Butylbenzene	NE	NE				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	0.005	<0.001	<0.0010
n-Propylbenzene	NE	NE				<	0.025		<	0.05	<0.05	<0.1 D	0.0102	0.0133	0.0102	
sec-Butylbenzene	NE	NE				<	0.025		<	0.05	<0.05	<0.1 D	0.0013	0.0018	0.0013	
Styrene	50	2.2				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	0.0018	<0.001	<0.0010
tert-Butylbenzene	NE	NE				<	0.025		<	0.05	<0.1	<0.1 D	<0.001	J 0.0002	<0.001	<0.0010
Tertiary-amyl methyl ether	NE	NE									<0.1	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7				<	0.025		<	0.05	<0.05	<0.1 D	0.0069	0.0057	0.0048	
Trichloroethene	87	0.54				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002				<	0.025		<	0.05	<0.05	<0.1 D	<0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE				0.22	0.025		0.24	0.05	0.119	0.088 J D	0.0935	0.088	0.0867	
Xylene P,M	NE	NE				<	0.050		<	0.10	<0.1	0.027 J D	0.0263	0.0285	0.0154	
Xylenes (Total)	NE	NE				0.22	0.750		0.24	0.150	0.119	0.115 J D	0.12	0.117	0.102	
Total VOCs	NE	NE				4.18			6.15		4.0795	2.841	2.9975	2.8605	1.297	
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE					5.2	1		48	0.2	8.61	8.84	6.22		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE					0.11	0.002		3.1 D	0.2	0.068	0.101 D	0.0309		
Acenaphthene	NE	NE					0.094	0.002		3.9 D	0.2	0.214	0.221 D	0.134		
Acenaphthylene	NE	NE					0.028	0.002		0.4 D	0.2	0.026	0.0336 D	0.0087		
Anthracene	NE	NE					0.025	0.002		1.7 D	0.2	0.032	0.0377 D	0.0207		
Benzo [a] Anthracene	NE	NE					0.0091	0.002		0.8 D	0.2	<0.02	0.0145 D	0.0056		
Benzo [a] Pyrene	NE	NE					0.0073	0.002		0.45 D	0.2	<0.02	0.0123 D	0.0044		
Benzo [b] Fluoranthene	NE	NE					0.006	0.002		0.41 D	0.2	<0.02	0.009 D	0.0032		
Benzo [g,h,i] Perylene	NE	NE					0.0027	0.002		<	0.2	<0.02	0.0043 D	0.002		
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.2	<0.02	0.0033 D	0.0011		
Chrysene	NE	NE					0.009	0.002		0.64 D	0.2	<0.02	0.0137 D	0.0051		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.2	<0.02	0.0012 D	0.0005		
Fluoranthene	NE	NE					0.026	0.002		1.8 D	0.2	0.022	0.0327 D	0.0128		
Fluorene	NE	NE					0.047	0.002		2 D	0.2	0.078	0.0811 D	0.0443		
Indeno [1,2,3-cd] Pyrene	NE	NE					0.0025	0.002		<	0.2	<0.02	0.0045 D	0.002		
Naphthalene	NE	2.67					1 D	0.02		10 D	0.2	2.58	1.78 D	0.742		
Phenanthrene	NE	NE					0.088	0.002		5.6 D	0.2	0.115	0.114 D	0.0817		
Pyrene	NE	NE					0.035	0.002		2.5 D	0.2	0.031	0.0439 D	0.0186		
INORGANICS (ppm)																
Total Cyanide	NE	NE					0.51	0.010		0.33	0.010	0.319	0.307 D	0.638		
Dissolved Free Cyanide	NE	NE					<	0.010		0.040	0.010	<0.005	0.3 D	0.5		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5H
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-312D													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		July 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)							
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE					0.31	0.025		0.42	0.05	0.432	<0.1 D	0.378	0.321	0.348
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.050		<	0.10	<0.5	<0.5 D	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE					0.055	0.025		<	0.05	<0.1	0.026 J D	0.0182	0.0272	0.0177
4-Isopropyltoluene	NE	NE										<0.1	<0.1 D	0.0063	0.0097	0.008
Acetone	NE	NE					<	0.250		<	0.50	<1	<1 D	<0.01	0.0216	0.0164
Benzene	18	0.14					2.5	0.025		2.8	0.05	2.29	3.56 D	5.98	5.55	5.97
Carbon Disulfide	NE	NE								<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Chloroform	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6					1.2	0.025		1.5	0.05	1.63	1.26 D	1.93	2.13	1.95
Isopropylbenzene	NE	NE					0.062	0.025		0.085	0.05	<0.1	0.054 J D	0.056	E 0.102	0.0788
Methyl tert-Butyl Ether	NE	5					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D	<0.002	<0.002	<0.0020
Naphthalene	NE	2.67					3.4	0.050		5.3	0.10	6.75	4.3 D	8.17	7.68	6.41
n-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE					<	0.025		<	0.05	<0.1	0.022 J D	0.0219	0.0389	0.0289
sec-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	0.0013	<0.0010
Styrene	50	2.2					<	0.025		<	0.05	<0.1	<0.1 D	0.0015	B <0.0020	<0.0010
tert-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.1	<0.1 D	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Toluene	21	1.7					<	0.025		<	0.05	<0.1	<0.1 D	0.0088	0.0093	0.0066
Trichloroethene	87	0.54					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002					<	0.025		<	0.05	<0.1	<0.1 D	<0.001	<0.001	<0.0010
Xylene O	NE	NE					0.3	0.025		0.41	0.05	0.422	0.309 D	0.515	0.494	0.542
Xylene P,M	NE	NE					<	0.050		<	0.10	<0.2	0.03 J D	0.0448	0.052	0.043
Xylenes (Total)	NE	NE					0.3	0.750		0.41	0.150	0.422	0.339 D	0.56	0.546	0.585
Total VOCs	NE	NE					7.8			10.52		11.524	9.561	17.1305	16.437	15.419
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE					4.6	2.0		6.5	0.2	10.7	9.42	8.39		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE					0.14	0.002		0.091	0.002	0.172	0.189 D	0.13		
Acenaphthene	NE	NE					0.07	0.002		0.051	0.002	0.108	0.0771 D	0.0905		
Acenaphthylene	NE	NE					0.0075	0.002		<	0.002	<0.02	0.0033 D	<0.0095		
Anthracene	NE	NE					0.0064	0.002		0.0035	0.002	<0.02	0.005 D	0.0219		
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.02	<0.0019 D	<0.0095		
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Chrysene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Fluoranthene	NE	NE					0.003	0.002		0.0024	0.002	<0.02	0.0023 D	<0.0095		
Fluorene	NE	NE					0.025	0.002		0.019	0.002	0.031	0.0255 D	0.0233		
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	<0.0024		
Naphthalene	NE	2.67					2 D	0.05		0.9	0.02	2.98	2.98 D	3.02		
Phenanthrene	NE	NE					0.032	0.002		0.018	0.002	0.033	0.0246 D	0.0218		
Pyrene	NE	NE					0.0036	0.002		0.003	0.002	<0.02	0.0028 D	<0.0095		
INORGANICS (ppm)																
Total Cyanide	NE	NE					0.62	0.010		0.74	0.010	0.48	0.531 D	0.875		
Dissolved Free Cyanide	NE	NE					<	0.010		0.020	0.010	<0.005	0.523 D	0.8		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 51
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-326S													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)	Note (3)						
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					0.073	0.005		0.140	0.005	0.0674	0.0478	0.0183	0.0113	0.0103
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.010		<	0.010	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					0.012	0.005		0.022	0.005	0.0098	0.0112	0.0082	0.0044	0.0044
4-Isopropyltoluene	NE	NE										0.0019	<0.001	<0.0010	J 0.0004	<0.0010
Acetone	NE	NE					<	0.050		<	0.050	<0.01	<0.01	<0.0100	<0.0100	<0.0100
Benzene	18	0.14					0.36	0.005		0.47	0.005	0.368	0.444 D	0.352	0.516	0.335
Carbon Disulfide	NE	NE								<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6					0.2	0.005		0.3	0.005	0.186	0.154 D	0.0574	0.0544	0.0294
Isopropylbenzene	NE	NE					0.026	0.005		0.051	0.005	0.0419	0.037	0.0287	0.034	0.0339
Methyl tert-Butyl Ether	NE	5					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.005		<	0.005	<0.001	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					0.27	0.010		0.13	0.010	0.0474	0.0516	0.0239	0.012	0.0043
n-Butylbenzene	NE	NE					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
n-Propylbenzene	NE	NE					0.007	0.005		0.018	0.005	0.0152	0.0128	0.0098	0.0103	0.0113
sec-Butylbenzene	NE	NE					<	0.005		<	0.005	0.0015	<0.001	<0.0010	J 0.0007	<0.0010
Styrene	50	2.2					<	0.005		<	0.005	<0.001	0.0018	<0.0010	J 0.0002	<0.0010
tert-Butylbenzene	NE	NE					<	0.005		<	0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7					<	0.005		0.006	0.005	0.0022	0.0025	0.0011	0.0012	<0.0010
Trichloroethene	87	0.54					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.005		<	0.005	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE					0.13	0.005		0.16	0.005	0.0735	0.0509	0.0126	0.0071	0.0044
Xylene P,M	NE	NE					0.015	0.010		0.021	0.010	0.012	0.0132	0.0059	0.005	0.0031
Xylenes (Total)	NE	NE					0.145	0.015		0.181	0.015	0.0855	0.0641	0.0186	0.0121	0.0075
Total VOCs	NE	NE					1.093			1.318		0.8268	0.8268	0.5179	0.657	0.436
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE					2.7	0.2		2.3	0.2	6.43	11.1	5.85		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE					0.023	0.002		0.017	0.002	0.024	0.0407 D	0.0205		
Acenaphthene	NE	NE					0.029	0.002		0.025	0.002	0.038	0.0545 D	0.0447		
Acenaphthylene	NE	NE					<	0.002		<	0.002	0.0008	0.0006	0.0003		
Anthracene	NE	NE					<	0.002		<	0.002	0.001	0.0018	0.0009		
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	0.0003	0.0014	0.0006		
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	0.0003	0.0012	0.0008		
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	0.0003	0.0009	0.0006		
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	0.0006	0.0005		
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	0.0009	0.0002		
Chrysene	NE	NE					<	0.002		<	0.002	0.0003	0.0013	0.0007		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	0.0002	0.0001		
Fluoranthene	NE	NE					<	0.002		<	0.002	0.001	0.0027	0.0013		
Fluorene	NE	NE					0.0054	0.002		0.0043	0.002	0.006	0.0058	0.004		
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	0.0006	0.0004		
Naphthalene	NE	2.67					0.099	0.002		0.026	0.002	0.008	0.0068	0.0042		
Phenanthrene	NE	NE					0.0037	0.002		<	0.002	0.002	0.0031	0.0021		
Pyrene	NE	NE					<	0.002		<	0.002	0.002	0.0037	0.0025		
INORGANICS (ppm)																
Total Cyanide	NE	NE					0.69	0.010		0.49	0.010	0.297	0.339 D	0.338		
Dissolved Free Cyanide	NE	NE					0.010	0.010		<	0.010	<0.005	0.337 D	0.3		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5J
GROUNDWATER MONITORING DATA

Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-326D													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)							
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					0.022	0.0025		0.0027	0.001	0.0023	0.0086	<0.0010	<0.0010	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.0050		<	0.002	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					0.0073	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Acetone	NE	NE					<	0.0250		<	0.010	<0.01	<0.01	<0.0010	<0.0100	0.0115
Benzene	18	0.14					0.26	0.0025		0.057	0.001	0.0588	0.0809	0.0049	0.002	0.0024
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6					0.13	0.0025		0.017	0.001	0.0201	0.0401	0.0012	0.001	<0.0010
Isopropylbenzene	NE	NE					0.016	0.0025		0.0038	0.001	0.0022	0.0026	<0.0010	<0.0010	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.0025		<	0.001	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					0.32	0.0050		0.052	0.002	0.0448	0.123 D	0.0026	B <0.0020	<0.0010
n-Butylbenzene	NE	NE					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
n-Propylbenzene	NE	NE					0.0051	0.0025		0.0014	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
sec-Butylbenzene	NE	NE					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Styrene	50	2.2					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
tert-Butylbenzene	NE	NE					<	0.0025		<	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Trichloroethene	87	0.54					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.0025		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE					0.034	0.0025		0.0029	0.001	0.0038	0.01	<0.0010	<0.0010	<0.0010
Xylene P,M	NE	NE					0.0068	0.0050		<	0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020
Xylenes (Total)	NE	NE					0.0408	0.0075		0.0029	0.003	0.0038	0.01	<0.0030	<0.0020	<0.0020
Total VOCs	NE	NE					0.8012			0.1368		0.132	0.2652	0.0087	0.003	0.014
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE					1.2	0.2		0.27	0.2	0.45	0.66	<0.19		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE					0.0038	0.002		<	0.002	<0.0002	0.0009	<0.0002		
Acenaphthene	NE	NE					0.0063	0.002		0.0022	0.002	0.001	0.0016	<0.0002		
Acenaphthylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Fluorene	NE	NE					<	0.002		<	0.002	0.0002	<0.0002	<0.0002		
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.0002		<	0.002	<0.0002	<0.00005	<0.00005		
Naphthalene	NE	2.67					0.042	0.002		0.02	0.002	0.012	0.0644 D	0.0003		
Phenanthrene	NE	NE					0.0026	0.002		<	0.002	0.0004	<0.0002	<0.0002		
Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
INORGANICS (ppm)																
Total Cyanide	NE	NE					0.54	0.010		0.67	0.010	0.665	0.808 D	0.709		
Dissolved Free Cyanide	NE	NE					0.080	0.010		0.010	0.010	<0.005	0.766 D	0.71		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5K
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-333S												
	Collected By:		AES	VHB	GZA	GZA	GZA	GZA		GZA	GZA	GZA	GZA	GZA	
	Sample Date:		1996	2006	Jan 2010	June 2010	Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016	
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)	Note (4)									
VOCs (ppm)							Result	DL	Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					<	0.001	0.0097	0.001	0.0136	<0.001	<0.0010	<0.0010	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002	<	0.002	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
4-Isopropyltoluene	NE	NE									<0.001	<0.001	<0.0010	<0.0010	<0.0010
Acetone	NE	NE					<	0.010	<	0.010	<0.1	<0.1	<0.0100	<0.0100	<0.0100
Benzene	18	0.14					<	0.001	0.039	0.001	0.0287	<0.001	<0.0010	<0.0010	<0.0010
Carbon Disulfide	NE	NE							<	0.001	<0.001	<0.001	0.0071	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6					<	0.001	0.13	0.001	0.212	<0.001	<0.0010	<0.0010	<0.0010
Isopropylbenzene	NE	NE					<	0.001	0.005	0.001	0.0068	<0.001	<0.0010	<0.0010	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.002	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					<	0.002	0.042	0.002	0.0122	<0.001	<0.0010	<0.0010	<0.0010
n-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
n-Propylbenzene	NE	NE					<	0.001	0.0015	0.001	0.0024	<0.001	<0.0010	<0.0010	<0.0010
sec-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Styrene	50	2.2					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
tert-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE									<0.001	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7					<	0.001	0.0026	0.001	0.0014	<0.001	<0.0010	<0.0010	<0.0010
Trichloroethene	87	0.54					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE					<	0.001	0.024	0.001	0.0144	<0.001	<0.0010	<0.0010	0.0356
Xylene P,M	NE	NE					<	0.002	0.0048	0.002	0.0023	<0.002	<0.0020	<0.0020	0.0052
Xylenes (Total)	NE	NE					<	0	0.029	0.003	0.0167	<0.003	<0.0030	<0.0020	0.0408
Total VOCs	NE	NE					ND		0.2586		0.2938	ND	0.0071	ND	0.041
TOTAL PETROLEUM HYDROCARBON (ppm)															
Hydrocarbon Content	NE	NE					0.31	0.2	0.32	0.2	1.07	<0.19	<0.19		
PAHS BY GCMS (ppm)															
2-Methylnaphthalene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002	<0.0002		
Acenaphthene	NE	NE					<	0.002	<	0.002	0.002	<0.0002	0.0005		
Acenaphthylene	NE	NE					<	0.002	<	0.002	0.001	<0.0002	0.0003		
Anthracene	NE	NE					<	0.002	<	0.002	0.0002	<0.0002	<0.0002		
Benzo [a] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [a] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Chrysene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Fluoranthene	NE	NE					<	0.002	<	0.002	0.0002	<0.0002	<0.0002		
Fluorene	NE	NE					<	0.002	<	0.002	0.0006	<0.0002	<0.0002		
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005	<0.00005		
Naphthalene	NE	2.67					<	0.002	0.013	0.002	0.005	0.0012	0.0002		
Phenanthrene	NE	NE					<	0.002	<	0.002	0.0005	<0.0002	<0.0002		
Pyrene	NE	NE					<	0.002	<	0.002	0.0003	<0.0002	<0.0002		
INORGANICS (ppm)															
Total Cyanide	NE	NE					0.050	0.01	0.150	0.01	0.0815	0.014	0.028		
Dissolved Free Cyanide	NE	NE					<	0.01	0.010	0.01	<0.005	0.0137	0.02		
Physiologically Available Cyanide	NE	NE													
Arsenic	NE	NE													
Beryllium	NE	NE													
Chromium	NE	NE													
Copper	NE	NE													
Lead	NE	NE													
Nickel	NE	NE													
Zinc	NE	NE													
Dissolved Arsenic	NE	NE													
Dissolved Beryllium	NE	NE													
Dissolved Chromium	NE	NE													
Dissolved Copper	NE	NE													
Dissolved Lead	NE	NE													
Dissolved Nickel	NE	NE													
Dissolved Zinc	NE	NE													

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5L
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-333D											
	Collected By:		AES	VHB	GZA	GZA	GZA		GZA		GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010	June 2010	Dec 2010		July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)	Note (4)								
VOCs (ppm)							Result	DL	Result	DL	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					0.19	0.025	0.43	0.025	0.344	0.353 D	0.155	0.076
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.050	<	0.050	<0.5	<0.005	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.025	<	0.025	<0.1	<0.001	0.0024	J 0.001
4-Isopropyltoluene	NE	NE									<0.1	<0.001	0.0022	J 0.0008
Acetone	NE	NE					<	0.250	<	0.250	<1	<0.01	<0.0100	J 0.0038
Benzene	18	0.14					1.2	0.025	1.6	0.025	1.77	2.67 D	1.76	0.902
Carbon Disulfide	NE	NE							<	0.025	<0.1	<0.001	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
Chloroform	NE	NE					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
Ethylbenzene	16	1.6					0.91	0.025	0.98	0.025	0.981	1.14 D	0.58	0.233
Isopropylbenzene	NE	NE					0.041	0.025	0.080	0.025	<0.1	0.09	0.0647	0.0517
Methyl tert-Butyl Ether	NE	5					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.025	<	0.025	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					1.8	0.050	3	0.050	3.55	3.96 D	2.3	0.861
n-Butylbenzene	NE	NE					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
n-Propylbenzene	NE	NE					<	0.025	0.035	0.025	<0.1	0.0346	0.0226	0.0165
sec-Butylbenzene	NE	NE					<	0.025	<	0.025	<0.1	<0.001	0.001	J 0.0009
Styrene	50	2.2					<	0.025	<	0.025	<0.1	0.0039	0.0014	B <0.0020
tert-Butylbenzene	NE	NE					<	0.025	<	0.025	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE									<0.1	<0.001	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
Toluene	21	1.7					0.065	0.025	<	0.025	<0.1	0.0152	0.0055	0.0015
Trichloroethene	87	0.54					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.025	<	0.025	<0.1	<0.001	<0.0010	<0.0010
Xylene O	NE	NE					0.36	0.025	0.34	0.025	0.205	0.163 D	0.089	0.0419
Xylene P,M	NE	NE					0.27	0.050	0.093	0.050	<0.2	0.0393	0.0143	0.0429
Xylenes (Total)	NE	NE					0.63	0.08	0.433	0.075	0.205	0.202 D	0.103	0.0848
Total VOCs	NE	NE					4.84		6.558		6.85	8.469	4.9981	2.233
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					3.5	0.2	2	0.2	7.82	6.6	3.54	
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					0.13	0.04	0.046	0.002	0.066	0.0755 D	0.0145	
Acenaphthene	NE	NE					0.059	0.04	0.039	0.002	0.073	0.0584 D	0.038	
Acenaphthylene	NE	NE					<	0.04	<	0.002	<0.02	0.0024 D	0.001	
Anthracene	NE	NE					<	0.04	0.0027	0.002	<0.02	0.0037 D	0.0013	
Benzo [a] Anthracene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	0.0003	
Benzo [a] Pyrene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	0.0002	
Benzo [b] Fluoranthene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	0.0002	
Benzo [g,h,i] Perylene	NE	NE					<	0.04	<	0.002	<0.02	<0.0021 D	<0.0002	
Benzo [k] Fluoranthene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	0.00006	
Chrysene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	0.0003	
Dibenzo [a,h] Anthracene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	<0.00005	
Fluoranthene	NE	NE					<	0.04	<	0.002	<0.02	<0.0021 D	0.001	
Fluorene	NE	NE					<	0.04	0.014	0.002	<0.02	0.0153 D	0.0061	
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D	0.0001	
Naphthalene	NE	2.67					0.96	0.04	0.98	0.02	2.07	1.98 D	0.433	
Phenanthrene	NE	NE					<	0.04	0.013	0.002	0.022	0.0169 D	0.0067	
Pyrene	NE	NE					<	0.04	<	0.002	<0.02	<0.0021 D	0.0011	
INORGANICS (ppm)														
Total Cyanide	NE	NE					0.72	0.010	1.1	0.010	0.742	4.05 D	0.725	
Dissolved Free Cyanide	NE	NE					<	0.010	0.020	0.010	<0.005	3.95 D	0.732	
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE SM
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-339S													
	Collected By:		AES	VHB	GZA		GZA	GZA	GZA		GZA	GZA	GZA	GZA	GZA	
	Sample Date:		1996	2006	Jan 2010		June 2010	Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016	
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)		Note (4)									
VOCs (ppm)								Result	DL	Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE						0.41	0.1	0.02	0.005	0.0092	0.0092	0.0082	0.0035	0.0248
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.2	<	0.010	<0.01	<0.005	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE						0.13	0.1	0.0068	0.005	<0.005	0.0032	0.0026	0.0012	0.0114
4-Isopropyltoluene	NE	NE										<0.005	<0.001	<0.001	<0.001	<0.0010
Acetone	NE	NE						<	1.0	<	0.050	<0.05	<0.01	0.0546	J 0.0051	0.0148
Benzene	18	0.14						<	0.1	<	0.005	<0.005	0.0011	<0.001	J 0.0002	<0.0010
Carbon Disulfide	NE	NE								<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	0.0021	<0.0010
cis-1,2-Dichloroethene	69	2.4						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Isopropylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Methyl tert-Butyl Ether	NE	5						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE						<	0.1	<	0.005	<0.005	<0.002	<0.002	<0.002	<0.0020
Naphthalene	NE	2.67						10	0.2	0.76	0.010	0.35	0.286 D	0.3	0.235	1.31
n-Butylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	0.001
sec-Butylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2						<	0.1	<	0.005	<0.005	0.0016	<0.001	J 0.0001	0.0029
tert-Butylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.01	<0.001	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7						<	0.1	<	0.005	<0.005	<0.001	<0.001	J 0.0003	0.0018
Trichloroethene	87	0.54						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002						<	0.1	<	0.005	<0.005	<0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE						<	0.1	<	0.005	<0.005	0.0013	0.001	J 0.0003	0.008
Xylene P,M	NE	NE						<	0.2	<	0.010	<0.01	0.0021	<0.002	J 0.0005	0.0056
Xylenes (Total)	NE	NE						<	0.3	<	0.015	<0.015	0.0034	0.001	<0.002	0.0136
Total VOCs	NE	NE						10.54		0.7868		0.3592	0.3045	0.3664	0.2504	1.38
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE						15	10	1.1	0.2	0.83	0.61	1.03		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE						0.3	0.04	0.075	0.002	0.066	0.0323 D	0.0276		
Acenaphthene	NE	NE						<	0.04	<	0.002	<0.002	0.0004	0.0005		
Acenaphthylene	NE	NE						<	0.04	<	0.002	<0.002	<0.0002	0.0006		
Anthracene	NE	NE						<	0.04	<	0.002	<0.002	0.0003	0.0005		
Benzo [a] Anthracene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	0.0001		
Benzo [a] Pyrene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	0.00007		
Benzo [g,h,i] Perylene	NE	NE						<	0.04	<	0.002	<0.002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	<0.00005		
Chrysene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	0.0001		
Dibenzo [a,h] Anthracene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	<0.00005		
Fluoranthene	NE	NE						<	0.04	<	0.002	<0.002	0.0002	0.0004		
Fluorene	NE	NE						<	0.04	0.0029	0.002	0.002	0.0009	0.0011		
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005	<0.00005		
Naphthalene	NE	2.67						5.5 D	0.2	0.35	0.010	0.287	0.129 D	0.101		
Phenanthrene	NE	NE						<	0.04	0.005	0.002	0.003	0.0014	0.0014		
Pyrene	NE	NE						<	0.04	<	0.002	<0.002	0.0002	0.0005		
INORGANICS (ppm)																
Total Cyanide	NE	NE						0.84	0.010	0.44	0.010	0.52	0.364 D	0.218		
Dissolved Free Cyanide	NE	NE						<	0.010	0.080	0.010	<0.005	0.335 D	0.2		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5N
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-339D														
	Collected By:		AES	VHB	GZA		GZA	GZA	GZA		GZA	GZA	GZA	GZA	GZA		
	Sample Date:		1996	2006	Jan 2010		June 2010	Dec 2010		July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016	
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)		Note (4)						Note (3)	Note (3)	Note (3)	Note (3)	Note (3)
VOCs (ppm)								Result	DL	Result	DL	Result	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE						0.38	0.05	0.41	0.025	0.449	0.437 D	0.4	0.48	0.48	0.437
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.10	<	0.050	<0.1	<0.005	<0.005	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE						0.11	0.05	0.11	0.025	0.122	0.1 D	0.0855	0.113	0.113	0.121
4-Isopropyltoluene	NE	NE										<0.05	0.0087	0.0073	0.0117	0.0117	0.0098
Acetone	NE	NE						<	0.50	<	0.250	<0.5	<0.01	<0.01	J 0.0042	J 0.0042	<0.0100
Benzene	18	0.14						<	0.05	0.036	0.025	0.066	0.0232	0.0265	0.0186	0.0186	0.0129
Carbon Disulfide	NE	NE								<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6						0.20	0.05	0.24	0.025	0.26	0.19 D	0.183	0.155	0.155	0.13
Isopropylbenzene	NE	NE						<	0.05	0.046	0.025	<0.05	0.0472	0.0437	0.0744	0.0744	0.0591
Methyl tert-Butyl Ether	NE	5						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE						<	0.05	<	0.025	<0.05	<0.001	<0.001	J 0.0003	J 0.0003	<0.0020
Naphthalene	NE	2.67						3.3	0.10	2.7	0.050	3.13	3.91 D	4.29	3.6	3.6	3.88
n-Butylbenzene	NE	NE						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	0.01
n-Propylbenzene	NE	NE						<	0.05	0.034	0.025	<0.05	0.034	0.026	0.0424	0.0424	0.0341
sec-Butylbenzene	NE	NE						<	0.05	<	0.025	<0.05	<0.001	0.0013	0.0019	0.0019	0.0019
Styrene	50	2.2						<	0.05	0.044	0.025	<0.05	0.0342	0.0158	0.018	0.018	0.0124
tert-Butylbenzene	NE	NE						<	0.05	<	0.025	<0.05	<0.001	<0.001	J 0.0002	J 0.0002	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.1	<0.001	<0.001	<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7						0.058	0.05	0.041	0.025	0.05	0.0471	0.0398	0.0448	0.0448	0.0351
Trichloroethene	87	0.54						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002						<	0.05	<	0.025	<0.05	<0.001	<0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE						0.41	0.05	0.038	0.025	0.418	0.344 D	0.344	0.354	0.354	0.321
Xylene P,M	NE	NE						0.46	0.10	0.047	0.050	0.446	0.33 D	0.317	0.362	0.362	0.326
Xylenes (Total)	NE	NE						0.87	0.15	0.085	0.075	0.864	0.674 D	0.661	0.716	0.716	0.647
Total VOCs	NE	NE						4.92		3.746		4.941	5.5054	5.7799	5.2805	5.2805	5.39
TOTAL PETROLEUM HYDROCARBON (ppm)																	
Hydrocarbon Content	NE	NE						10	2.0	5.4	0.2	8.4	9.78	7.04			
PAHS BY GCMS (ppm)																	
2-Methylnaphthalene	NE	NE						0.41	0.04	0.23	0.01	0.275	0.303 D	0.19			
Acenaphthene	NE	NE						0.042	0.04	0.052	0.002	0.09	0.0591 D	0.0564			
Acenaphthylene	NE	NE						0.079	0.04	0.069	0.002	0.105	0.0789 D	0.0696			
Anthracene	NE	NE						<	0.04	0.0029	0.002	<0.02	0.0041 D	0.0037			
Benzo [a] Anthracene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Benzo [a] Pyrene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Benzo [b] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Benzo [g,h,i] Perylene	NE	NE						<	0.04	<	0.002	<0.02	<0.0021 D	<0.0009			
Benzo [k] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Chrysene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Dibenzo [a,h] Anthracene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Fluoranthene	NE	NE						<	0.04	<	0.002	<0.02	<0.0021 D	0.001			
Fluorene	NE	NE						<	0.04	0.024	0.002	0.04	0.0314 D	0.0287			
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D	<0.0002			
Naphthalene	NE	2.67						1.7	0.04	1.1	0.04	2.13	1.63 D	1.42			
Phenanthrene	NE	NE						<	0.04	0.023	0.002	0.041	0.0271 D	0.0259			
Pyrene	NE	NE						<	0.04	<	0.002	<0.02	<0.0021 D	0.0012			
INORGANICS (ppm)																	
Total Cyanide	NE	NE						0.29	0.010	0.13	0.010	0.0925	0.0777	0.09			
Dissolved Free Cyanide	NE	NE						0.020	0.010	0.010	0.010	<0.005	0.0761	0.144			
Physiologically Available Cyanide	NE	NE															
Arsenic	NE	NE															
Beryllium	NE	NE															
Chromium	NE	NE															
Copper	NE	NE															
Lead	NE	NE															
Nickel	NE	NE															
Zinc	NE	NE															
Dissolved Arsenic	NE	NE															
Dissolved Beryllium	NE	NE															
Dissolved Chromium	NE	NE															
Dissolved Copper	NE	NE															
Dissolved Lead	NE	NE															
Dissolved Nickel	NE	NE															
Dissolved Zinc	NE	NE															

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 50
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		M&E MW-2											
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (5)						Note (6)					
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.002	<	0.002		<	0.002	<0.002	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010
Acetone	NE	NE			<	0.010	<	0.010		<	0.010	<0.01	<0.01	<0.0100
Benzene	18	0.14		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Isopropylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE			<	0.002	<	0.002		<	0.002	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67		<0.001	<	0.002	<	0.002		<	0.002	<0.001	<0.001	0.0112
n-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
tert-Butylbenzene	NE	NE			<	0.001	<	0.001		<	0.001	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.002	<0.001	<0.0010
Tetrachloroethene	NE	0.15			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene P,M	NE	NE		<0.002	<	0.002	<	0.002		<	0.002	<0.002	<0.002	<0.0020
Xylenes (Total)	NE	NE		<0.003	<	0.003	<	0.003		<	0.003	<0.003	<0.003	<0.0030
Total VOCs	NE	NE		ND	ND		ND			ND		ND	ND	0.0112
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE			<	0.2	<	0.2		<	0.2	0.27	<0.19	<0.19
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Acenaphthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Acenaphthylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Fluorene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Naphthalene	NE	2.67		<0.0002	<	0.002	<	0.002		<	0.002	0.001	<0.0002	0.0003
Phenanthrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
INORGANICS (ppm)														
Total Cyanide	NE	NE		0.07	0.050	0.010	0.12	0.010		0.010	0.010	0.48	0.045	0.0734
Dissolved Free Cyanide	NE	NE		<0.05	<	0.010	<	0.010		<	0.010	<0.005	0.0395	0.058
Physiologically Available Cyanide	NE	NE		<0.05										
Arsenic	NE	NE		<0.0050										
Beryllium	NE	NE		<0.001										
Chromium	NE	NE		<0.020										
Copper	NE	NE		<0.020										
Lead	NE	NE		<0.0050										
Nickel	NE	NE		<0.050										
Zinc	NE	NE		<0.050										
Dissolved Arsenic	NE	NE		<0.0060										
Dissolved Beryllium	NE	NE		<0.001										
Dissolved Chromium	NE	NE		<0.020										
Dissolved Copper	NE	NE		<0.020										
Dissolved Lead	NE	NE		<0.0050										
Dissolved Nickel	NE	NE		<0.050										
Dissolved Zinc	NE	NE		<0.050										

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5P
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		TB-1 / MW-6													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		July 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O							Note (6)							
VOCs (ppm)			Result	Result	Result	DL	Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE	0.01 J	0.0054	0.0074	0.001	0.0031	0.001		0.0032	0.001	<0.001	0.0012	<0.0010	J 0.0001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.002		<	0.002	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE		0.01	0.0046	0.001	0.0003	0.001		<	0.001	<0.001	<0.001	<0.0010	0.0053	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Acetone	NE	NE			<	0.025	<	0.010		0.003	0.010	<0.01	<0.01	<0.0100	B <0.035	<0.0100
Benzene	18	0.14	0.02	0.0495	0.0035	0.001	0.0031	0.001		0.0034	0.001	0.0213	0.0263	0.0115	0.0095	0.0185
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6	0.03	0.0849	0.0016	0.001	0.068	0.001		0.0360	0.001	0.0243	0.0193	0.0079	0.0055	0.0119
Isopropylbenzene	NE	NE		0.0074	<	0.001	0.008	0.001		0.0049	0.001	0.0033	0.0037	0.002	J 0.0010	0.0022
Methyl tert-Butyl Ether	NE	5		<0.001	0.005	0.001	<	0.002		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE			<	0.002	<	0.002				<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67		0.0328	0.00267	0.002	0.14	0.001		0.011	0.002	0.0035	0.0045	0.0024	0.0015	0.0019
n-Butylbenzene	NE	NE		0.0027	<	0.001	<	0.001		0.0012	0.001	<0.001	<0.001	<0.0010	J 0.0006	0.0011
n-Propylbenzene	NE	NE		0.0079	<	0.001	0.008	0.001		0.0043	0.001	0.0027	0.0027	0.001	J 0.0007	0.0016
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	J 0.0001	<0.0010
Styrene	50	2.2	<0.02		0.0022	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
tert-Butylbenzene	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15			0.00015	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7	<0.02	0.0057	0.0017	0.001	0.004	0.001		0.0025	0.001	0.0011	0.0012	<0.0010	J 0.0005	0.0015
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE	0.02	0.082	<	0.001	0.079	0.001		0.042	0.001	0.0212	0.0186	0.0073	0.0057	0.0105
Xylene P,M	NE	NE	<0.02	0.0079	<	0.002	0.026	0.001		0.0055	0.002	0.0028	0.0028	<0.0020	J 0.0009	<0.0020
Xylenes (Total)	NE	NE	0.02	0.0899	<	0.003	0.105	0.002		0.048	0.003	0.024	0.0213	0.0073	0.0065	0.0105
Total VOCs	NE	NE	0.08	0.2962	0.02882		0.340			0.117		0.0802	0.0803	0.0321	0.0357	0.049
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE			2.6	0.2	3.7	0.2		1.8	0.2	3.65	2.98	1.47		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE	0.04	<0.0002	<	0.002	0.034	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Acenaphthene	NE	NE	0.004	0.0315	0.017	0.002	0.013	0.002		0.0082	0.002	0.01	0.0067	0.0052		
Acenaphthylene	NE	NE	0.013	0.1435	0.071	0.002	0.057	0.002		0.038	0.002	0.057	0.0414 D	0.0317		
Anthracene	NE	NE	<0.02	0.00134	<	0.002	0.012	0.002		<	0.002	0.0006	0.0005	0.0003		
Benzo [a] Anthracene	NE	NE	0.06	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	0.00006		
Benzo [a] Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Chrysene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Fluoranthene	NE	NE	<0.02	0.00203	<	0.002	<	0.002		<	0.002	0.0007	0.0004	0.0003		
Fluorene	NE	NE	0.003	0.0364	0.019	0.002	0.013	0.002		0.0081	0.002	0.01	0.0063	0.0058		
Indeno [1,2,3-cd] Pyrene	NE	NE	<0.02	<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Naphthalene	NE	2.67	<0.02	0.0269	0.0077	0.002	0.042	0.002		0.0038	0.002	0.002	0.0018	0.0003		
Phenanthrene	NE	NE	0.004	0.0306	0.014	0.002	0.012	0.002		0.0031	0.002	0.007	0.0037	0.0029		
Pyrene	NE	NE	0.01 J	0.00104	<	0.002	<	0.002		<	0.002	0.0004	0.0003	0.0002		
INORGANICS (ppm)																
Total Cyanide	NE	NE	0.18	0.2	0.21	0.010	0.13	0.010		0.21	0.010	0.174	0.271 D	0.178		
Dissolved Free Cyanide	NE	NE		<0.05	0.01	0.010	<	0.010		0.040	0.010	0.0063	0.263 D	0.153		
Physiologically Available Cyanide	NE	NE		<0.05												
Arsenic	NE	NE	<0.002	<0.0025												
Beryllium	NE	NE	<0.002	<0.0005												
Chromium	NE	NE	<0.024	<0.010												
Copper	NE	NE	<0.024	<0.010												
Lead	NE	NE	<0.050	<0.0025												
Nickel	NE	NE	<0.024	<0.025												
Zinc	NE	NE	0.023	<0.025												
Dissolved Arsenic	NE	NE		<0.0025												
Dissolved Beryllium	NE	NE		<0.0005												
Dissolved Chromium	NE	NE		<0.010												
Dissolved Copper	NE	NE		<0.010												
Dissolved Lead	NE	NE		<0.0025												
Dissolved Nickel	NE	NE		<0.025												
Dissolved Zinc	NE	NE		0.025												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5Q
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-109													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA	GZA	GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		July 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)						Note (6)							
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE		0.454	0.27	0.0025	0.26	0.010		0.21	0.0025	0.295	0.126 D	0.14	0.0259	0.0058
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.0130	<	0.002		<	0.0050	<0.05	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE		0.047	0.017	0.0025	0.02	0.001		0.0097	0.0025	0.0172	0.0057	0.005	J 0.0004	<0.0010
4-Isopropyltoluene	NE	NE										0.0104	0.0046	0.0037	J 0.0004	<0.0010
Acetone	NE	NE			<	0.0630	<	0.010		<	0.0250	<0.1	<0.01	<0.0100	J 0.0037	<0.0100
Benzene	18	0.14		0.0352	0.039	0.0025	0.024	0.001		0.03	0.0025	0.0402	0.115 D	0.135	0.171	0.312
Carbon Disulfide	NE	NE								<	0.0025	<0.01	<0.001	0.0015	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE		<0.001	<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6		0.177	0.086	0.0025	<	0.001		0.057	0.0025	0.0928	0.0404	0.0349	0.0338	0.0182
Isopropylbenzene	NE	NE		0.0418	0.038	0.0025	0.028	0.001		0.026	0.0025	0.0337	0.0194	0.022	0.0233	0.016
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.0025	<	0.002		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE			<	0.0025	<	0.002		<	0.0050	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67		0.724	0.41	0.0050	0.3	0.001		0.3	0.0050	0.559	0.163 D	0.248	0.0288	0.0255
n-Butylbenzene	NE	NE		<0.001	0.009	0.0025	<	0.001		0.0075	0.0025	<0.01	<0.001	<0.0010	0.0067	0.0052
n-Propylbenzene	NE	NE		0.0217	0.017	0.0025	0.015	0.001		0.014	0.0025	0.0189	0.0101	0.0117	0.0124	0.0083
sec-Butylbenzene	NE	NE		0.0056	0.0025	0.0025	<	0.001		0.0025	0.0025	<0.01	<0.001	0.0025	0.0024	0.0018
Styrene	50	2.2			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	B <0.0020	<0.0010
tert-Butylbenzene	NE	NE			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	J 0.0004	<0.0010
Tertiary-amyl methyl ether	NE	NE			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7		0.0058	0.0028	0.0025	0.003	0.001		0.0025	0.0025	<0.01	0.003	0.003	0.0033	0.002
Trichloroethene	87	0.54			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE		0.0875	0.031	0.0025	0.033	0.001		0.026	0.0025	0.0457	0.0183	0.0185	0.0176	0.0124
Xylene P,M	NE	NE		0.0875	0.026	0.0050	0.034	0.001		0.019	0.0050	0.0415	0.0128	0.0082	B <0.0040	0.0021
Xylenes (Total)	NE	NE		0.175	0.057	0.0075	0.067	0.002		0.045	0.0075	0.0872	0.0311	0.0266	0.021	0.0144
Total VOCs	NE	NE		1.6871		0.9483		0.717			0.7042	1.1544	0.5494	0.634	0.3306	0.409
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE			1.1	0.2	1.5	0.2		0.66	0.2	3.62	2.79	1.81		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE		0.073	0.026	0.002	0.04	0.002		0.021	0.002	0.026	0.0309 D	0.0105		
Acenaphthene	NE	NE		0.00583	0.0027	0.002	0.0028	0.002		0.0023	0.002	0.004	0.0033	0.0024		
Acenaphthylene	NE	NE		0.00124	<	0.002	<	0.002		<	0.002	<0.002	0.0004	0.0003		
Anthracene	NE	NE		0.00065	<	0.002	<	0.002		<	0.002	<0.002	0.0004	0.0003		
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Fluoranthene	NE	NE		0.00033	<	0.002	<	0.002		<	0.002	<0.002	<0.0002	<0.0002		
Fluorene	NE	NE		0.00336	<	0.002	<	0.002		<	0.002	0.002	0.0019	0.0015		
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.002	<0.00005	<0.00005		
Naphthalene	NE	2.67		0.602	0.1	0.002	0.12	0.002		0.096	0.002	0.204	0.0965 D	0.0727		
Phenanthrene	NE	NE		0.00317	<	0.002	<	0.002		<	0.002	0.002	0.0019	0.0015		
Pyrene	NE	NE		0.00031	<	0.002	<	0.002		<	0.002	<0.002	0.0002	0.0002		
INORGANICS (ppm)																
Total Cyanide	NE	NE		0.222	0.28	0.010	0.17	0.010		0.180	0.010	0.235	0.143	0.212		
Dissolved Free Cyanide	NE	NE		0.06	<	0.010	<	0.010		<	0.010	<0.005	0.132	0.213		
Physiologically Available Cyanide	NE	NE		<0.05												
Arsenic	NE	NE		0.0103												
Beryllium	NE	NE		<0.001												
Chromium	NE	NE		<0.020												
Copper	NE	NE		<0.020												
Lead	NE	NE		<0.0050												
Nickel	NE	NE		<0.050												
Zinc	NE	NE		<0.050												
Dissolved Arsenic	NE	NE		0.0085												
Dissolved Beryllium	NE	NE		<0.001												
Dissolved Chromium	NE	NE		<0.020												
Dissolved Copper	NE	NE		<0.020												
Dissolved Lead	NE	NE		<0.0050												
Dissolved Nickel	NE	NE		<0.050												
Dissolved Zinc	NE	NE		0.051												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5R
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-314S													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)							
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					0.0017	0.001		<	0.001	0.0053	<0.001	<0.0010	<0.0010	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
4-Isopropyltoluene	NE	NE										<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Acetone	NE	NE					<	0.010		<	0.010	<0.025	<0.01	<0.0100	<0.0100	<0.0100
Benzene	18	0.14					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Carbon Disulfide	NE	NE								<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	J 0.0002	<0.0010
Isopropylbenzene	NE	NE					0.0016	0.001		0.0016	0.001	0.0028	0.0007 J	<0.0010	J 0.0004	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.002		<	0.002	<0.0025	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					0.0041	0.002		<	0.002	0.0083	<0.001	0.0014	<0.001	<0.0010
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Styrene	50	2.2					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
tert-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.005	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.0025	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE					0.0041	0.001		<	0.001	0.0052	<0.001	<0.0010	J 0.0003	<0.0010
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.005	<0.002	<0.0020	<0.0020	<0.0020
Xylenes (Total)	NE	NE					0.0041	0.003		<	0.003	0.0052	<0.003	<0.0030	<0.0020	<0.0020
Total VOCs	NE	NE					0.0115			0.0016		0.0216	0.0007	0.0014	0.0009	ND
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE					1.2	0.2		1.4	0.2	4.65	2.08	0.57		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	0.0003	<0.0002	<0.0002		
Acenaphthene	NE	NE					0.0029	0.002		<	0.002	0.003	0.0025	0.0013		
Acenaphthylene	NE	NE					<	0.002		<	0.002	0.0006	0.0004	<0.0002		
Anthracene	NE	NE					<	0.002		<	0.002	0.0005	0.0004	<0.0002		
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002		
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Fluoranthene	NE	NE					<	0.002		<	0.002	0.0002	0.0003	<0.0002		
Fluorene	NE	NE					<	0.002		<	0.002	0.001	0.0008	0.0003		
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005		
Naphthalene	NE	2.67					<	0.002		<	0.002	0.004	0.0003	<0.0002		
Phenanthrene	NE	NE					<	0.002		<	0.002	0.0005	<0.0002	<0.0002		
Pyrene	NE	NE					<	0.002		<	0.002	0.0003	0.0004	0.0003		
INORGANICS (ppm)																
Total Cyanide	NE	NE					0.20	0.010		0.10	0.010	0.0637	0.0902	0.176		
Dissolved Free Cyanide	NE	NE					<	0.010		0.010	0.010	<0.005	0.0894	0.128		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5S
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-314D											
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)					
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.002	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010
Acetone	NE	NE					<	0.010		<	0.010	<0.01	<0.01	<0.0100
Benzene	18	0.14					0.0016	0.001		0.001	0.001	<0.001	<0.001	<0.0010
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6					<	0.001		<	0.001	<0.001	<0.001	B <0.0020
Isopropylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE					<	0.002		<	0.002	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					0.0023	0.002		<	0.002	<0.001	<0.001	<0.0010
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2					<	0.001		<	0.001	<0.001	<0.001	B <0.0020
tert-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.002	0.0004 J	<0.0010
Tetrachloroethene	NE	0.15					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7					<	0.001		<	0.001	<0.001	<0.001	J 0.0003
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.002	<0.002	B <0.0040
Xylenes (Total)	NE	NE					<	0.003		<	0.003	<0.003	<0.003	<0.0030
Total VOCs	NE	NE					0.0039			0.001		ND	0.0004	ND
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					<	0.2		0.33	0.2	1.69	0.53	0.37
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Acenaphthene	NE	NE					0.0037	0.002		0.0027	0.002	0.003	0.0031	0.0013
Acenaphthylene	NE	NE					<	0.002		<	0.002	0.0003	0.0002	<0.0002
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Fluoranthene	NE	NE					<	0.002		<	0.002	0.0002	<0.0002	<0.0002
Fluorene	NE	NE					<	0.002		<	0.002	0.0004	<0.0002	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005	<0.00005
Naphthalene	NE	2.67					<	0.002		<	0.002	0.004	0.0004	<0.0002
Phenanthrene	NE	NE					0.002	0.002		<	0.002	0.0002	<0.0002	<0.0002
Pyrene	NE	NE					<	0.002		<	0.002	0.0003	0.0002	<0.0002
INORGANICS (ppm)														
Total Cyanide	NE	NE					0.46	0.010		0.32	0.010	0.144	0.317 D	0.16
Dissolved Free Cyanide	NE	NE					<	0.010		0.050	0.010	<0.005	0.154	0.162
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5T
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-316S													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)					Note (2)	Note (2)	Note (2)
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE								<	0.001	<0.001	<0.001			
1,1-Dichloroethene	23	0.007								<	0.001	<0.001	<0.001			
1,2,4-Trimethylbenzene	NE	NE								<	0.001	<0.001	<0.001			
1,2-Dibromo-3-Chloropropane	NE	0.002								<	0.002	<0.005	<0.005			
1,3,5-Trimethylbenzene	NE	NE								<	0.001	<0.001	<0.001			
4-Isopropyltoluene	NE	NE										<0.001	<0.001			
Acetone	NE	NE								0.012	0.010	<0.01	<0.01			
Benzene	18	0.14								<	0.001	<0.001	<0.001			
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001			
Carbon Tetrachloride	NE	0.07								<	0.001	<0.001	<0.001			
Chloroform	NE	NE								<	0.001	<0.001	<0.001			
cis-1,2-Dichloroethene	69	2.4								<	0.001	<0.001	<0.001			
Ethylbenzene	16	1.6								<	0.001	<0.001	<0.001			
Isopropylbenzene	NE	NE								<	0.001	<0.001	<0.001			
Methyl tert-Butyl Ether	NE	5								<	0.001	<0.001	<0.001			
Methylene Chloride	NE	NE								<	0.002	<0.002	<0.002			
Naphthalene	NE	2.67								<	0.002	<0.001	<0.001			
n-Butylbenzene	NE	NE								<	0.001	<0.001	<0.001			
n-Propylbenzene	NE	NE								<	0.001	<0.001	<0.001			
sec-Butylbenzene	NE	NE								<	0.001	<0.001	<0.001			
Styrene	50	2.2								<	0.001	<0.001	<0.001			
tert-Butylbenzene	NE	NE								<	0.001	<0.001	<0.001			
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001			
Tetrachloroethene	NE	0.15								<	0.001	<0.001	<0.001			
Toluene	21	1.7								<	0.001	<0.001	<0.001			
Trichloroethene	87	0.54								<	0.001	<0.001	<0.001			
Vinyl Chloride	NE	0.002								<	0.001	<0.001	<0.001			
Xylene O	NE	NE								<	0.001	<0.001	<0.001			
Xylene P,M	NE	NE								<	0.002	<0.002	<0.002			
Xylenes (Total)	NE	NE								<	0.003	<0.003	<0.003			
Total VOCs	NE	NE								0.012		ND	ND			
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE														
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE														
Acenaphthene	NE	NE														
Acenaphthylene	NE	NE														
Anthracene	NE	NE														
Benzo [a] Anthracene	NE	NE														
Benzo [a] Pyrene	NE	NE														
Benzo [b] Fluoranthene	NE	NE														
Benzo [g,h,i] Perylene	NE	NE														
Benzo [k] Fluoranthene	NE	NE														
Chrysene	NE	NE														
Dibenzo [a,h] Anthracene	NE	NE														
Fluoranthene	NE	NE														
Fluorene	NE	NE														
Indeno [1,2,3-cd] Pyrene	NE	NE														
Naphthalene	NE	2.67														
Phenanthrene	NE	NE														
Pyrene	NE	NE														
INORGANICS (ppm)																
Total Cyanide	NE	NE														
Dissolved Free Cyanide	NE	NE					0.11	0.010								
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5U
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-316D													
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)							
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Acetone	NE	NE					<	0.010		<	0.010	<0.01	<0.01	<0.0100	J 0.0033	<0.0100
Benzene	18	0.14					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Isopropylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.002		<	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					<	0.002		<	0.002	<0.001	<0.001	<0.0010	<0.0010	<0.0010
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Styrene	50	2.2					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
tert-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.002	<0.002	<0.0020	<0.0020	<0.0020
Xylenes (Total)	NE	NE					<	0.003		<	0.003	<0.003	<0.003	<0.0030	<0.0020	<0.0020
Total VOCs	NE	NE					ND			ND		ND	ND	ND	0.0033	ND
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE					<	0.2		<	0.2	<0.2	<0.19	<0.19		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Acenaphthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Acenaphthylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Fluorene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005		
Naphthalene	NE	2.67					<	0.002		<	0.002	0.0004	<0.0009 D	<0.0002		
Phenanthrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002		
INORGANICS (ppm)																
Total Cyanide	NE	NE					0.020	0.010		0.010	0.010	0.0083	0.0129	0.011		
Dissolved Free Cyanide	NE	NE					<	0.010		<	0.010	<0.005	0.0129	<0.005		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5V
GROUNDWATER MONITORING DATA
Former Power Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-337											
	Collected By:		AES	VHB	GZA		GZA	GZA		GZA		GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010	June 2010	Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)	Note (4)								
VOCs (ppm)							Result	DL	Result	DL	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0004
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002	<	0.002	<0.005	<0.005	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
4-Isopropyltoluene	NE	NE									<0.001	<0.001	<0.0010	<0.0010
Acetone	NE	NE					<	0.010	<	0.010	<0.01	<0.01	<0.0100	<0.0100
Benzene	18	0.14					<	0.001	<	0.001	<0.001	<0.001	0.0036	0.0039
Carbon Disulfide	NE	NE							<	0.001	<0.001	<0.001	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Chloroform	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Ethylbenzene	16	1.6					<	0.001	<	0.001	<0.001	<0.001	J 0.0008	0.0018
Isopropylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0003
Methyl tert-Butyl Ether	NE	5					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.002	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					<	0.002	<	0.002	<0.001	<0.001	<0.0010	0.0033
n-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
n-Propylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
sec-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Styrene	50	2.2					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
tert-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE									<0.001	<0.001	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Toluene	21	1.7					<	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0001
Trichloroethene	87	0.54					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Xylene O	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0002
Xylene P,M	NE	NE					<	0.002	<	0.002	<0.002	<0.002	<0.0020	<0.0020
Xylenes (Total)	NE	NE					<	0.003	<	0.003	<0.003	<0.003	<0.0030	<0.0020
Total VOCs	NE	NE					ND		ND		ND	ND	0.0036	0.0057
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					0.69	0.2	0.46	0.2	0.91	1.36	1.32	
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0009 D	<0.0002	
Acenaphthene	NE	NE					<	0.002	<	0.002	0.0004	<0.0009 D	0.0015	
Acenaphthylene	NE	NE					<	0.002	<	0.002	0.0004	<0.001 D	0.0021	
Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0009 D	<0.0002	
Benzo [a] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	0.00007	
Benzo [a] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Benzo [b] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Benzo [g,h,i] Perylene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0009 D	<0.0002	
Benzo [k] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Chrysene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	0.00006	
Dibenzo [a,h] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Fluoranthene	NE	NE					<	0.002	<	0.002	0.001	0.0012 D	0.0011	
Fluorene	NE	NE					<	0.002	<	0.002	0.0009	0.0016 D	0.0021	
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Naphthalene	NE	2.67					<	0.002	<	0.002	0.0002	0.0014 D	0.0003	
Phenanthrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0009 D	<0.0002	
Pyrene	NE	NE					<	0.002	<	0.002	0.001	0.0012 D	0.0012	
INORGANICS (ppm)														
Total Cyanide	NE	NE					0.20	0.010	0.19	0.010	0.127	0.282 D	0.328	
Dissolved Free Cyanide	NE	NE					<	0.010	<	0.010	0.0099	0.267 D	0.237	
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE SW
GROUNDWATER MONITORING DATA
South Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-107											
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		July 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)						Note (6)					
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.002		<	0.002	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010
Acetone	NE	NE			<	0.025	<	0.010		<	0.010	<0.01	<0.01	<0.0100
Benzene	18	0.14		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	J 0.0002
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	J 0.0003
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Isopropylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.002		<	0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE			<	0.002	<	0.002		<	0.002	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67		<0.001	<	0.002	<	0.002		<	0.002	<0.001	<0.001	<0.0010
n-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
tert-Butylbenzene	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Toluene	21	1.7		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001	J 0.0004
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene P,M	NE	NE		<0.002	<	0.002	<	0.001		<	0.002	<0.002	<0.002	<0.0020
Xylenes (Total)	NE	NE		<0.003	<	0.003	<	0.002		<	0.003	<0.003	<0.003	<0.0030
Total VOCs	NE	NE		ND	ND		ND			ND		ND	ND	ND
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE			<	0.2	<	0.2		<	0.2	<0.21	<0.19	<0.19
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Acenaphthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Acenaphthylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Benzo [k] Fluoranthene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Fluorene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Naphthalene	NE	2.67		<0.0002	<	0.002	<	0.002		<	0.002	0.002	<0.0009 D	<0.0002
Phenanthrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
INORGANICS (ppm)														
Total Cyanide	NE	NE		0.07	0.020	0.010	0.052	0.010		0.040	0.010	0.0306	0.0472	0.0458
Dissolved Free Cyanide	NE	NE		<0.05	<	0.010	<	0.010		<	0.010	<0.005	0.0445	0.031
Physiologically Available Cyanide	NE	NE		<0.05										
Arsenic	NE	NE		<0.0050										
Beryllium	NE	NE		0.003										
Chromium	NE	NE		0.038										
Copper	NE	NE		0.12										
Lead	NE	NE		0.0075										
Nickel	NE	NE		0.092										
Zinc	NE	NE		0.255										
Dissolved Arsenic	NE	NE		<0.0050										
Dissolved Beryllium	NE	NE		0.003										
Dissolved Chromium	NE	NE		0.037										
Dissolved Copper	NE	NE		0.119										
Dissolved Lead	NE	NE		0.0075										
Dissolved Nickel	NE	NE		0.093										
Dissolved Zinc	NE	NE		0.259										

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5X
GROUNDWATER MONITORING DATA
South Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-318S													
	Collected By:		AES	VHB	GZA	GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA	
	Sample Date:		1996	2006	Jan 2010	June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016	
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)			Note (6)		DL						
VOCs (ppm)						Result	DL		Result	DL	Result	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE				0.052	0.01		0.04	0.01	<0.05	0.043	0.0303	0.0255	0.0183	0.0183
1,2-Dibromo-3-Chloropropane	NE	0.002				<	0.02		<	0.02	<0.25	<0.005	<0.0050	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE				0.023	0.01		0.017	0.01	<0.05	0.0177	0.0124	0.0108	0.0075	0.0075
4-Isopropyltoluene	NE	NE									<0.05	0.0012	<0.0010	J 0.0008	<0.0010	<0.0010
Acetone	NE	NE				<	0.10		<	0.10	<0.5	<0.01	<0.0100	J 0.0033	<0.0100	<0.0100
Benzene	18	0.14				0.088	0.01		0.089	0.01	0.063	0.0733	0.0516	0.0408	0.0426	0.0426
Carbon Disulfide	NE	NE							<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Ethylbenzene	16	1.6				0.012	0.01		0.01	0.01	<0.05	0.0099	0.0062	0.0061	0.0046	0.0046
Isopropylbenzene	NE	NE				<	0.01		<	0.01	<0.05	<0.001	<0.0010	J 0.0007	<0.0010	<0.0010
Methyl tert-Butyl Ether	NE	5				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE				<	0.01		<	0.01	<0.05	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67				1.2	0.02		1.1	0.02	1.22	0.988 D	0.883	0.755	0.504	0.504
n-Butylbenzene	NE	NE				<	0.01		<	0.01	<0.05	<0.001	<0.0010	0.0016	0.0014	0.0014
n-Propylbenzene	NE	NE				<	0.01		<	0.01	<0.05	0.002	0.0012	0.0013	<0.0010	<0.0010
sec-Butylbenzene	NE	NE				<	0.01		<	0.01	<0.05	<0.001	<0.0010	J 0.0003	<0.0010	<0.0010
Styrene	50	2.2				<	0.01		<	0.01	<0.05	0.0051	0.0024	0.0025	0.0024	0.0024
tert-Butylbenzene	NE	NE				<	0.01		<	0.01	<0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE									<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Toluene	21	1.7				0.076	0.01		0.072	0.01	0.0575	0.0659	0.0441	0.037	0.0314	0.0314
Trichloroethene	87	0.54				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Vinyl Chloride	NE	0.002				<	0.01		<	0.01	<0.05	<0.001	<0.0010	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE				0.046	0.01		0.039	0.01	<0.05	0.0374	0.0253	0.022	<0.0010	<0.0010
Xylene P,M	NE	NE				0.11	0.02		0.082	0.02	<0.1	0.083	0.0556	0.0486	<0.0020	<0.0020
Xylenes (Total)	NE	NE				0.156	0.03		0.121	0.03	<0.15	0.12	0.0809	0.0706	<0.0020	<0.0020
Total VOCs	NE	NE				1.61			1.449		1.3405	1.3265	1.1121	0.9563	0.612	0.612
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE				1	1.0		2.9	0.2	4.13	3.42	1.51			
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE				0.048	0.002		0.044	0.01	0.06	0.0397 D	0.0544			
Acenaphthene	NE	NE				0.006	0.002		<	0.01	0.009	0.0046 D	0.0057			
Acenaphthylene	NE	NE				0.021	0.002		0.014	0.01	0.024	0.0129 D	0.022			
Anthracene	NE	NE				0.019	0.002		<	0.01	0.007	0.0036 D	0.005			
Benzo [a] Anthracene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.0006			
Benzo [a] Pyrene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.0006			
Benzo [b] Fluoranthene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.0007			
Benzo [g,h,i] Perylene	NE	NE				<	0.002		<	0.01	<0.002	<0.0009 D	0.0004			
Benzo [k] Fluoranthene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.0003			
Chrysene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.0005			
Dibenzo [a,h] Anthracene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.00009			
Fluoranthene	NE	NE				0.004	0.002		<	0.01	<0.002	0.001 D	0.0027			
Fluorene	NE	NE				0.014	0.002		0.012	0.01	0.02	0.0111 D	0.0228			
Indeno [1,2,3-cd] Pyrene	NE	NE				<	0.002		<	0.01	<0.002	<0.0002 D	0.0005			
Naphthalene	NE	2.67				0.21	0.002		0.38	0.01	0.753	0.351 D	0.43			
Phenanthrene	NE	NE				0.018	0.002		<	0.01	0.019	0.0106 D	0.0235			
Pyrene	NE	NE				0.003	0.002		<	0.01	<0.002	<0.0009 D	0.0017			
INORGANICS (ppm)																
Total Cyanide	NE	NE				0.50	0.010		0.01	0.010	0.0359	0.0125	0.027			
Dissolved Free Cyanide	NE	NE				0.020	0.010		0.01	0.010	<0.005	0.0119	0.01			
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5Y
GROUNDWATER MONITORING DATA
South Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-318D											
	Collected By:		AES	VHB	GZA		GZA		GZA	GZA		GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010		June 2010		Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)				Note (6)					
VOCs (ppm)							Result	DL		Result	DL	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2,4-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.005	<0.005	<0.0050
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010
Acetone	NE	NE					<	0.010		<	0.010	<0.01	<0.01	<0.0100
Benzene	18	0.14					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Chloroform	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Ethylbenzene	16	1.6					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Isopropylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Methylene Chloride	NE	NE					<	0.002		<	0.002	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					0.0043	0.002		<	0.002	<0.001	<0.001	0.0013
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Styrene	50	2.2					<	0.001		<	0.001	<0.001	<0.001	<0.0010
tert-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010
Tetrachloroethene	NE	0.15					<	0.001		<	0.001	<0.001	<0.001	J 0.0002
Toluene	21	1.7					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene O	NE	NE					<	0.001		<	0.001	<0.001	<0.001	<0.0010
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.002	<0.002	<0.0020
Xylenes (Total)	NE	NE					<	0.003		<	0.003	<0.003	<0.003	<0.0030
Total VOCs	NE	NE					ND			ND		ND	ND	0.0013
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					<	0.2		<	0.2	<0.21	<0.19	<0.19
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	0.0008	<0.0009 D	<0.0002
Acenaphthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Acenaphthylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Fluorene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002 D	<0.00005
Naphthalene	NE	2.67					<	0.002		<	0.002	0.01	<0.0009 D	<0.0002
Phenanthrene	NE	NE					0.002	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0009 D	<0.0002
INORGANICS (ppm)														
Total Cyanide	NE	NE					<	0.010		<	0.010	<0.005	0.0163	0.0234
Dissolved Free Cyanide	NE	NE					<	0.010		<	0.010	<0.005	0.0138	0.015
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5Z
GROUNDWATER MONITORING DATA
South Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-334S											
	Collected By:		AES	VHB	GZA		GZA	GZA	GZA		GZA	GZA	GZA	GZA
	Sample Date:		1996	2006	Jan 2010	June 2010	Dec 2010	July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)	Note (4)								
VOCs (ppm)							Result	DL	Result	DL	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE					0.0034	0.001	<	0.001	0.0016	0.0011	0.0015	J 0.0005
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002	<	0.002	<0.005	<0.005	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE					0.0013	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0002
4-Isopropyltoluene	NE	NE									<0.001	<0.001	<0.0010	<0.0010
Acetone	NE	NE					<	0.010	<	0.010	<0.01	<0.01	<0.0100	J 0.0032
Benzene	18	0.14					0.0032	0.001	0.001	0.001	0.0021	0.002	0.0032	0.0019
Carbon Disulfide	NE	NE							<	0.001	<0.001	<0.001	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Chloroform	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Ethylbenzene	16	1.6					<	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0002
Isopropylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Methyl tert-Butyl Ether	NE	5					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Methylene Chloride	NE	NE					<	0.002	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67					0.071	0.002	0.014	0.002	0.0429	0.0334	0.0692	0.0246
n-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
n-Propylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
sec-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Styrene	50	2.2					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
tert-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE									<0.001	<0.001	<0.0010	<0.0010
Tetrachloroethene	NE	0.15					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Toluene	21	1.7					0.0018	0.001	0.0011	0.001	0.0012	0.001	0.0016	J 0.0009
Trichloroethene	87	0.54					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Vinyl Chloride	NE	0.002					<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010
Xylene O	NE	NE					0.0025	0.001	<	0.001	0.0013	<0.001	0.0013	J 0.0004
Xylene P,M	NE	NE					0.0042	0.002	<	0.002	<0.002	<0.002	0.0022	J 0.0008
Xylenes (Total)	NE	NE					0.0067	0	<	0.003	0.0013	<0.003	0.0035	<0.0020
Total VOCs	NE	NE					0.0874		0.0161	0.0491	0.0375	0.079	0.0327	0.052
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					0.5	0.2	0.22	0.2	0.55	0.52	<0.19	
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					0.0028	0.002	<	0.002	0.003	0.0019 D	0.0007	
Acenaphthene	NE	NE					<	0.002	<	0.002	0.001	<0.001 D	0.0004	
Acenaphthylene	NE	NE					<	0.002	<	0.002	0.0002	<0.001 D	<0.0002	
Anthracene	NE	NE					<	0.002	<	0.002	0.0005	<0.001 D	0.0004	
Benzo [a] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	0.00006	
Benzo [a] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Benzo [b] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Benzo [g,h,i] Perylene	NE	NE					<	0.002	<	0.002	<0.0002	<0.001 D	<0.0002	
Benzo [k] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Chrysene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Dibenzo [a,h] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Fluoranthene	NE	NE					<	0.002	<	0.002	0.0006	<0.001 D	0.0005	
Fluorene	NE	NE					<	0.002	<	0.002	0.001	<0.001 D	0.0006	
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005	
Naphthalene	NE	2.67					0.018	0.002	0.0075	0.002	0.023	0.0142 D	0.0044	
Phenanthrene	NE	NE					0.0021	0.002	<	0.002	0.003	0.0027 D	0.0027	
Pyrene	NE	NE					<	0.002	<	0.002	0.0004	<0.001 D	0.0004	
INORGANICS (ppm)														
Total Cyanide	NE	NE					0.040	0.010	0.02	0.010	0.0564	0.0352	0.0127	
Dissolved Free Cyanide	NE	NE					<	0.010	<	0.010	<0.005	0.0286	0.011	
Physiologically Available Cyanide	NE	NE												
Arsenic	NE	NE												
Beryllium	NE	NE												
Chromium	NE	NE												
Copper	NE	NE												
Lead	NE	NE												
Nickel	NE	NE												
Zinc	NE	NE												
Dissolved Arsenic	NE	NE												
Dissolved Beryllium	NE	NE												
Dissolved Chromium	NE	NE												
Dissolved Copper	NE	NE												
Dissolved Lead	NE	NE												
Dissolved Nickel	NE	NE												
Dissolved Zinc	NE	NE												

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.

TABLE 5AA
GROUNDWATER MONITORING DATA
South Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

ANALYTICAL	Sample ID:		MW-334D													
	Collected By:		AES	VHB	GZA		GZA	GZA		GZA	GZA	GZA	GZA	GZA		
	Sample Date:		1996	2006	Jan 2010		June 2010	Dec 2010		July 2011		July 2012	Aug 2013	Oct 2014	Nov 2015	Nov 2016
	RIDEM GB GW UCL	RIDEM GB GW-O	Note (4)	Note (4)	Note (4)		Note (4)									
VOCs (ppm)								Result	DL	Result	DL	Result	Result	Result	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,1-Dichloroethene	23	0.007						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
1,2,4-Trimethylbenzene	NE	NE						0.0042	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0002	<0.0010
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.002	<	0.002	<0.005	<0.005	<0.0050	<0.0050	<0.0050
1,3,5-Trimethylbenzene	NE	NE						0.0014	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
4-Isopropyltoluene	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Acetone	NE	NE						<	0.010	<	0.010	<0.01	<0.01	<0.0100	<0.0100	<0.0100
Benzene	18	0.14						0.0030	0.001	0.0013	0.001	0.0013	0.0015	0.0084	0.0012	0.0022
Carbon Disulfide	NE	NE								<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Carbon Tetrachloride	NE	0.07						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Chloroform	NE	NE						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
cis-1,2-Dichloroethene	69	2.4						0.0024	0.001	0.0011	0.001	0.0012	0.0012	0.0013	J 0.0007	0.0011
Ethylbenzene	16	1.6						0.0011	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Isopropylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methyl tert-Butyl Ether	NE	5						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Methylene Chloride	NE	NE						<	0.002	<	0.002	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Naphthalene	NE	2.67						0.11	0.002	0.0097	0.002	0.0213	0.0132	0.0178	0.0096	0.0302
n-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
n-Propylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
sec-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Styrene	50	2.2						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
tert-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001	<0.0010	<0.0010	<0.0010
Tetrachloroethene	NE	0.15						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Toluene	21	1.7						0.0018	0.001	<	0.001	<0.001	<0.001	0.0012	J 0.0004	0.0012
Trichloroethene	87	0.54						0.0045	0.001	0.0014	0.001	0.0023	0.0021	0.0024	0.0015	0.0018
Vinyl Chloride	NE	0.002						<	0.001	<	0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010
Xylene O	NE	NE						0.0036	0.001	<	0.001	<0.001	<0.001	<0.0010	J 0.0001	<0.0010
Xylene P,M	NE	NE						0.0040	0.002	<	0.002	<0.002	<0.002	<0.0020	J 0.0002	<0.0020
Xylenes (Total)	NE	NE						0.0076	0	<	0.003	<0.003	<0.003	<0.0030	<0.0020	<0.0020
Total VOCs	NE	NE						0.136		0.0135		0.0261	0.018	0.0311	0.0139	0.037
TOTAL PETROLEUM HYDROCARBON (ppm)																
Hydrocarbon Content	NE	NE						0.47	0.2	<	0.2	0.45	0.33	0.2		
PAHS BY GCMS (ppm)																
2-Methylnaphthalene	NE	NE						0.0099	0.002	<	0.002	0.002	0.0013 D	0.0007		
Acenaphthene	NE	NE						<	0.002	<	0.002	0.0008	<0.0009 D	0.0004		
Acenaphthylene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D	<0.0002		
Anthracene	NE	NE						<	0.002	<	0.002	0.0005	<0.0009 D	0.0004		
Benzo [a] Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	0.00006		
Benzo [a] Pyrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005		
Benzo [b] Fluoranthene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005		
Benzo [g,h,i] Perylene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D	<0.0002		
Benzo [k] Fluoranthene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005		
Chrysene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005		
Dibenzo [a,h] Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005		
Fluoranthene	NE	NE						<	0.002	<	0.002	0.0007	<0.0009 D	0.0005		
Fluorene	NE	NE						<	0.002	<	0.002	0.001	<0.0009 D	0.0006		
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D	<0.00005		
Naphthalene	NE	2.67						<	0.002	0.0036	0.002	0.008	0.0067 D	0.0044		
Phenanthrene	NE	NE						0.002	0.002	<	0.002	0.003	0.0029 D	0.0027		
Pyrene	NE	NE						<	0.002	<	0.002	0.0005	<0.0009 D	0.0004		
INORGANICS (ppm)																
Total Cyanide	NE	NE						0.35	0.010	0.02	0.010	0.0326	0.0256	0.0229		
Dissolved Free Cyanide	NE	NE						0.060	0.010	<	0.010	<0.005	0.0245	0.013		
Physiologically Available Cyanide	NE	NE														
Arsenic	NE	NE														
Beryllium	NE	NE														
Chromium	NE	NE														
Copper	NE	NE														
Lead	NE	NE														
Nickel	NE	NE														
Zinc	NE	NE														
Dissolved Arsenic	NE	NE														
Dissolved Beryllium	NE	NE														
Dissolved Chromium	NE	NE														
Dissolved Copper	NE	NE														
Dissolved Lead	NE	NE														
Dissolved Nickel	NE	NE														
Dissolved Zinc	NE	NE														

Notes:

	Blank cells indicate that the parameter was not analyzed during this sampling round
D	"D" qualifier indicates analytes reported from a diluted run of the original analysis.
E	"E" qualifier indicates that the analyte was reported above the quantitation limit; Estimated value
J	"J" qualifier indicates analyte value was below the Method reporting Limit; Estimated value.
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
	ND = Not Detected
Bold Text	= concentration equals or exceeds the RIDEM GB Groundwater Objective (RIDEM GB GW Objectives)
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(1)	Method 2 GB Objective criteria for naphthalene developed by GZA in accordance with the methods described in the Remediation Regulations.
(2)	Well was not sampled because there was limited water
(3)	NAPL was noted to be present
(4)	Well was not sampled because it had not been installed yet.
(5)	Well was not sampled because of an unknown reason
(6)	Well was not included in this sampling round

Please note that this table only includes compounds that have been detected or have detection limits that exceeded the RIDEM GB Groundwater Objective during groundwater monitoring at the Site between 1996 and present.



FIGURES

GROUNDWATER MONITORING REPORT

NATIONAL GRID

FORMER TIDEWATER FACILITY

PAWTUCKET, RHODE ISLAND

JANUARY 2017

PREPARED FOR:

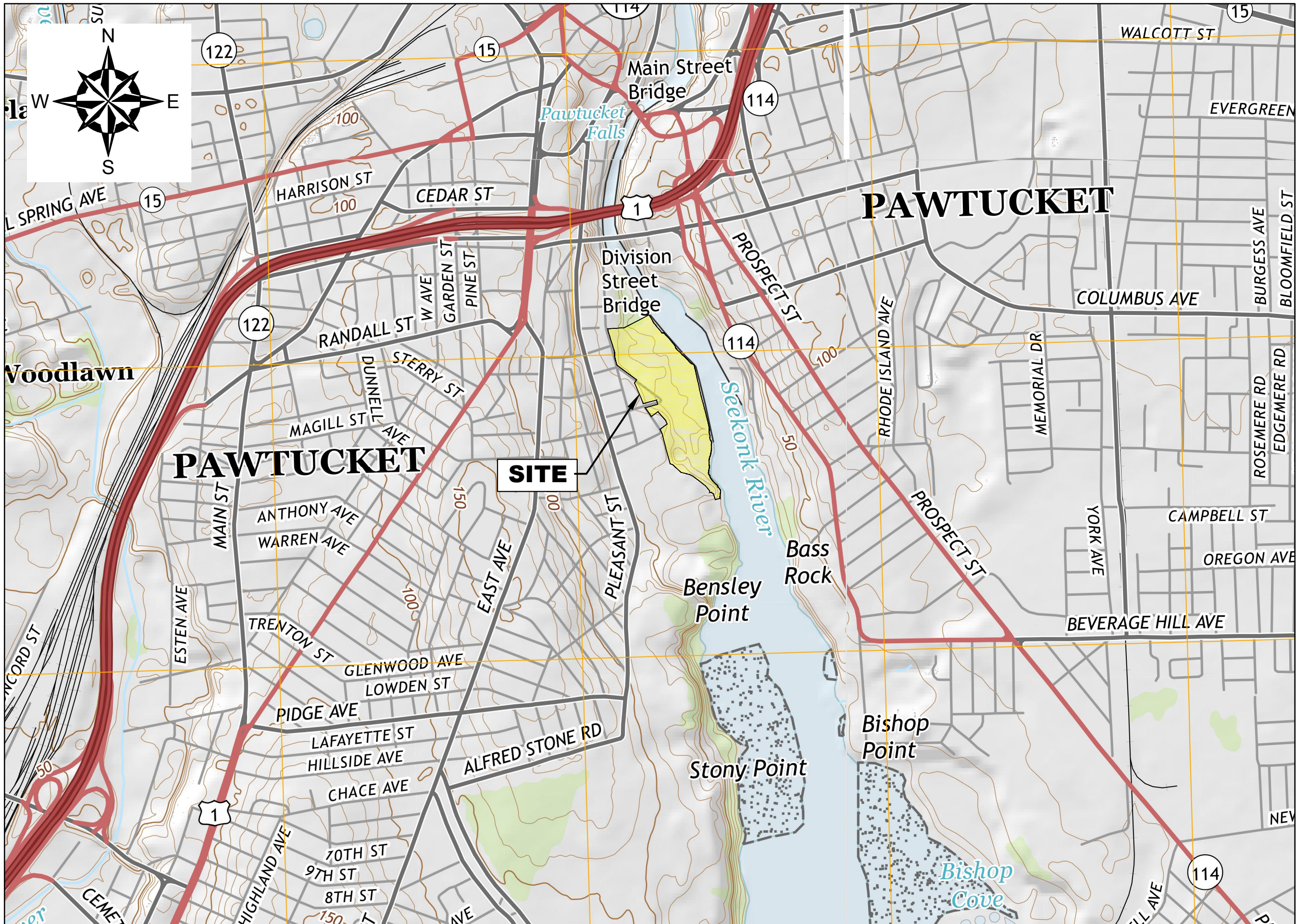
nationalgrid

PREPARED BY:



GZA

GeoEnvironmental, Inc.
Engineers and Scientists
530 Broadway
Providence, Rhode Island 02909



PROJECT LOCUS MAP

SOURCE: USGSSTORE.GOV

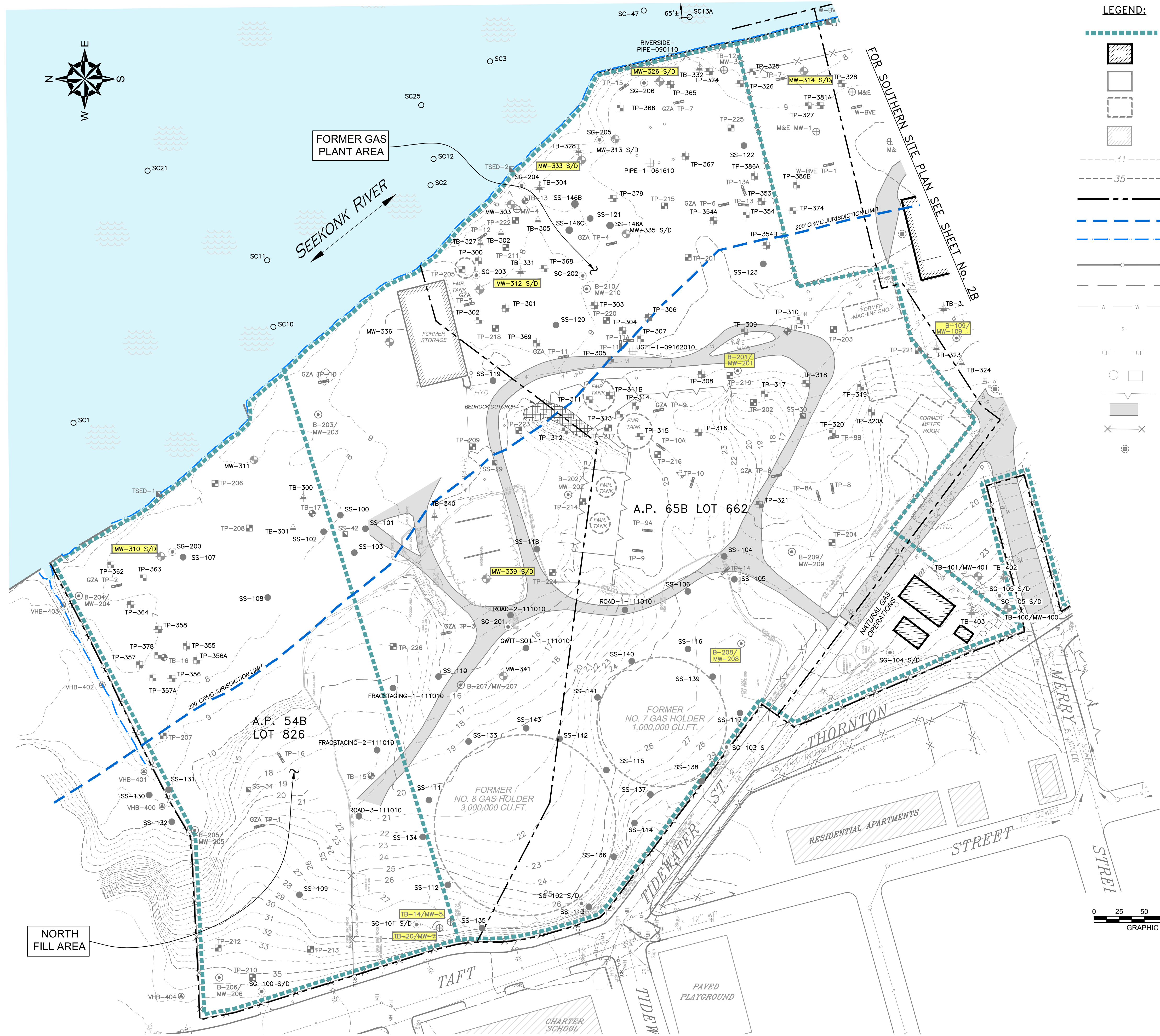


INDEX OF DRAWINGS

1. COVER SHEET, INDEX OF DRAWINGS AND PROJECT LOCUS MAP - FIGURE (1)
2. EXPLORATION LOCATION PLAN - NORTH FILL AREA AND FORMER GAS PLANT AREA - FIGURE (2A)
3. EXPLORATION LOCATION PLAN - FORMER POWER PLANT AREA AND SOUTH FILL AREA - FIGURE (2B)
4. SHALLOW GROUNDWATER CONTOUR PLAN - OCTOBER 31, 2016 - FIGURE (3)
5. 2016 NAPL & ANALYTICAL GROUNDWATER DATA - NORTH FILL AREA AND FORMER GAS PLANT AREA - FIGURE (4A)
6. 2016 NAPL & ANALYTICAL GROUNDWATER DATA - FORMER POWER PLANT AREA AND SOUTH FILL AREA - FIGURE (4B)

THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

2016 - GZA GeoEnvironmental, Inc. GZA-15-DNA-43654.mxd\G02\G2A\Groundwater Monitoring Report\2016\43654-00_72A-4B_PD_SSR-EOP-PLANS_2016_R-100.dwg [2A] January 06, 2017 - 2:45pm corl.bang



LEGEND:

- SITE AREA BOUNDARIES
- EXISTING BUILDINGS ON-SITE
- EXISTING FOUNDATION/PAD ON-SITE
- FORMER BUILDING/STRUCTURE
- EXISTING BUILDINGS/STRUCTURES OFF-SITE
- EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
- EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
- PROPERTY LINE
- APPROX. 200 FT. CRMC JURISDICTION LIMIT
- APPROX. WATERS EDGE
- EXISTING NBC INTERCEPTOR SANITARY SEWER
- EXISTING CITY OF PAWTUCKET STORM DRAIN
- EXISTING WATER LINE
- EXISTING STORM/COMBINED SAN. SEWER OVERFLOW
- EXISTING UNDERGROUND ELECTRIC CABLE IN CONDUIT
- EXISTING UNDERGROUND ELECTRIC MH/STRUCTURE
- EXISTING RETAINING WALLS
- EXISTING ACCESS ROAD
- EXISTING FENCE
- EXISTING CATCH BASIN LOCATIONS

SAMPLE LEGEND

- SS-9 ATLANTIC SURFACE SOIL SAMPLE LOCATION
- TS-6 ATLANTIC SEDIMENT SAMPLE LOCATION
- W-BVE SS-3 WESTON/BLACKSTONE VALLEY ELECTRIC SEDIMENT SAMPLE LOCATION
- RIDEM SS-3 RIDEM SURFACE SOIL SAMPLE LOCATION
- B-109/MW-109 MONITORING WELL/BORING (VHB) SURVEYED
- TP-3A ATLANTIC TEST PIT LOCATION
- W-BVE WESTON/BLACKSTONE VALLEY ELECTRIC TEST PIT LOCATION
- GZA TP-B GZA/VALLEY GAS TEST PIT LOCATION
- TB-15 ATLANTIC SOIL BORING LOCATION
- MW-3 ATLANTIC MONITORING WELL LOCATION
- M&E MW-1 METCALF & EDDY MONITORING WELL LOCATION
- VHB-400 VHB SURFACE SOIL SAMPLE LOCATION NON-SURVEYED
- TP-204 VHB TEST PIT (2006)
- GZ-01 GZA TEST PIT (2009)
- TB-300 GZA TEST BORING LOCATION (2010-2011)
- MW-320 S/D GZA MONITORING WELL LOCATION (2010-2011)
- TP-306 GZA TEST PIT LOCATION (2010)
- SS-100 GZA SURFACE SOIL SAMPLE LOCATION (2010)
- SC31 ARCADIS SEDIMENT SAMPLE LOCATION (2008)
- PIPE-1-061610 GZA RESIDUAL MATERIAL SAMPLE (2010)
- SG-200 INTERIOR SOIL GAS SAMPLING LOCATION
- SG-100 PERIMETER SOIL GAS SAMPLING LOCATION
- TB-400 GZA BORING LOCATION (2014)
- MW-400 GZA MONITORING WELL LOCATION (2014)

INDICATES THAT MONITORING WELL WAS SAMPLED AS PART OF THE 2016 GROUNDWATER MONITORING PROGRAM

GENERAL NOTES:

- EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
 - ELECTRONIC FILES FROM GEI CONSULTANTS, INC. (FORMERLY AES) ENTITLED "HISTORIC STRUCTURES AND SAMPLE LOCATIONS", ORIGINAL SCALE 1"=80', DATED JULY 1999
 - ELECTRONIC FILES FROM VANASSE HANGEN BRUSTLIN, INC. ENTITLED "SOIL BORING, TEST PIT AND MONITOR WELL LOCATIONS", SCALE: 1"=80', UNDATED
 - ELECTRONIC FILES FROM WELSH ASSOCIATES LAND SURVEYORS, INC. ENTITLED "TOPOGRAPHIC SURVEY (AS-BUILT), FORMER TIDEWATER FACILITY, DEMOLITION OF GAS HOLDERS NOS. 7 & 8", DATED DECEMBER 17, 2010
 - ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS DURING 2009 AND 2010.
 - ELECTRONIC FILES FROM WELCH ASSOCIATES, DATED DEC. 2, 2015 ENTITLED: "DEMOLITION FORMER GAS OPERATIONS BUILDINGS, FORMER TIDEWATER MGP FACILITY, 200 TAFT STREET, PAWTUCKET, RI.
 - ELECTRONIC FILES FROM NORBERT THERIEN, PLS, NATIONAL LAND SURVEYORS-DEVELOPERS, ENTITLED: "DRAINAGE AS-BUILT PLAN FINAL GRADES DATED 9/14/16, ORIGINAL SCALE 1"=10'.
 - ON-SITE TOPOGRAPHIC SURVEY BY GZA PERSONNEL, DEC. 12, 2016.
- PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "PERIMETER SURVEY OF LAND AT THE TIDEWATER FORMER MGP SITE IN PAWTUCKET, RHODE ISLAND FOR ATLANTIC ENVIRONMENTAL SERVICES INC." DEVELOPED BY LOUIS FEDERICI AND ASSOCIATES AND AN AUTO CAD FILE ENTITLED "MAX READ FIELD TRACK EXPANSION 2007" PROVIDED BY THE CITY OF PAWTUCKET.
- HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
- VERTICAL DATUM IS BASED ON NGVD 1929 (MSL) FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
- REFERENCE SEWER DATA FROM SCANNED IMAGE PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND, ENTITLED "STUDY OF SEWERAGE FACILITIES" BY WATERMAN ENGINEERING CO. & ANDERSON NICHOLS CO. DATED NOV. 1975, ORIGINAL SCALE 1"=400' & SCANNED IMAGES OF HISTORIC PLAN & PROFILE DRAWINGS PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND.
- SITE UTILITIES TAKEN FROM 1984 SANBORN MAP AND HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND SHOWN FOR REFERENCE ONLY.

THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY LIABILITY TO GZA AND NATIONAL GRID.

2016 GROUNDWATER MONITORING REPORT NATIONAL GRID FORMER TIDEWATER FACILITY PAWTUCKET, RHODE ISLAND

EXPLORATION LOCATION PLAN NORTH FILL AREA AND FORMER GAS PLANT AREA

PREPARED BY:



GZA GeoEnvironmental, Inc.
Engineers and Scientists
330 BROADWAY
PROVIDENCE, RHODE ISLAND 02909
(401) 421-4140

PREPARED FOR:

nationalgrid

PROJ MGR:

MSK

REVIEWED BY:

SDN

CHECKED BY:

SDN

DESIGNED BY:

SFD

DRAWN BY:

CRD

SCALE:

AS NOTED

DATE

JAN. 2017

PROJECT NO.

43654.00

REVISION NO.

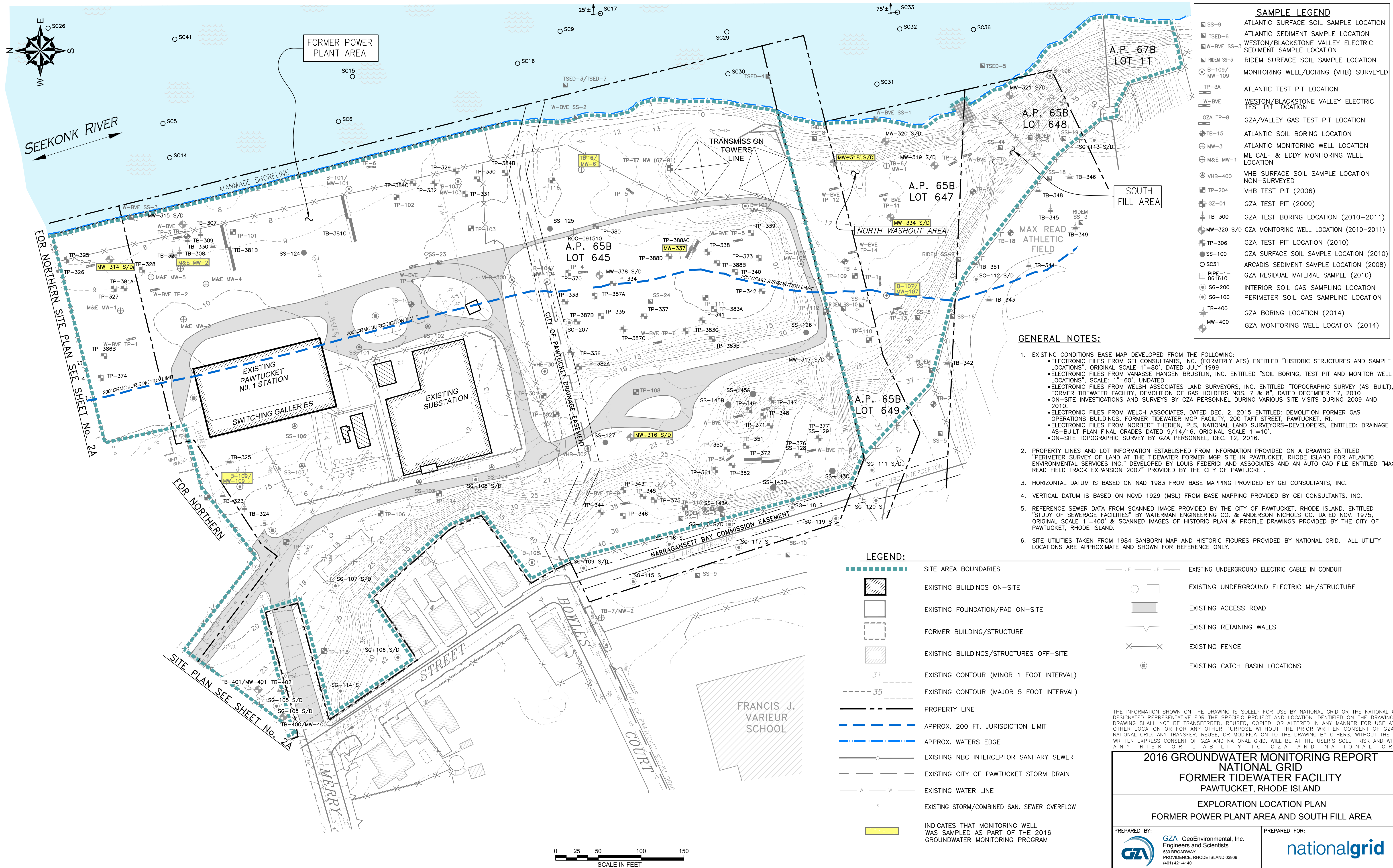
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FIGURE

2A

SHEET NO. 2 OF 6

2016 - GZA - GZA GeoEnvironmental, Inc. GZA-UNV-43654.mxd (GZA) DWG:Groundwater Monitoring Report\2016\43654-00_72A-4B_R0_SSR-EXP-PLAN_2016_R-SEC.dwg [28] January 06, 2017 - 2:41pm corl.bartan



SAMPLE LEGEND

- SS-9 ATLANTIC SURFACE SOIL SAMPLE LOCATION
- TS-6 ATLANTIC SEDIMENT SAMPLE LOCATION
- W-BVE SS-3 WESTON/BLACKSTONE VALLEY ELECTRIC SEDIMENT SAMPLE LOCATION
- RDEM SS-3 RIDEM SURFACE SOIL SAMPLE LOCATION
- B-109/MW-109 MONITORING WELL/BORING (VHB) SURVEYED
- TP-3A ATLANTIC TEST PIT LOCATION
- W-BVE WESTON/BLACKSTONE VALLEY ELECTRIC TEST PIT LOCATION
- GZA TP-8 GZA/VALLEY GAS TEST PIT LOCATION
- TB-15 ATLANTIC SOIL BORING LOCATION
- MW-3 ATLANTIC MONITORING WELL LOCATION
- M&E MW-1 METCALF & EDDY MONITORING WELL LOCATION
- VHB-400 VHB SURFACE SOIL SAMPLE LOCATION NON-SURVEYED
- TP-204 VHB TEST PIT (2006)
- GZ-01 GZA TEST PIT (2009)
- TB-300 GZA TEST BORING LOCATION (2010-2011)
- MW-320 S/D GZA MONITORING WELL LOCATION (2010-2011)
- TP-306 GZA TEST PIT LOCATION (2010)
- SS-100 GZA SURFACE SOIL SAMPLE LOCATION (2010)
- SC31 ARCADIS SEDIMENT SAMPLE LOCATION (2008)
- PIPE-1-061610 GZA RESIDUAL MATERIAL SAMPLE (2010)
- SG-200 INTERIOR SOIL GAS SAMPLING LOCATION
- SG-100 PERIMETER SOIL GAS SAMPLING LOCATION
- TB-400 GZA BORING LOCATION (2014)
- MW-400 GZA MONITORING WELL LOCATION (2014)

GENERAL NOTES:

- EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
 - ELECTRONIC FILES FROM GEI CONSULTANTS, INC. (FORMERLY AES) ENTITLED "HISTORIC STRUCTURES AND SAMPLE LOCATIONS", ORIGINAL SCALE 1"=80', DATED JULY 1999
 - ELECTRONIC FILES FROM VANASSE HANGEN BRUSTLIN, INC. ENTITLED "SOIL BORING, TEST PIT AND MONITOR WELL LOCATIONS", SCALE: 1"=60', UNDATED
 - ELECTRONIC FILES FROM WELSH ASSOCIATES LAND SURVEYORS, INC. ENTITLED "TOPOGRAPHIC SURVEY (AS-BUILT), FORMER TIDEWATER FACILITY, DEMOLITION OF GAS HOLDERS NOS. 7 & 8", DATED DECEMBER 17, 2010
 - ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS DURING 2009 AND 2010.
 - ELECTRONIC FILES FROM WELSH ASSOCIATES, DATED DEC. 2, 2015 ENTITLED: DEMOLITION FORMER GAS OPERATIONS BUILDINGS, FORMER TIDEWATER MGP FACILITY, 200 TAPT STREET, PAWTUCKET, RHODE ISLAND.
 - ELECTRONIC FILES FROM NORBERT THERIEN, PLS, NATIONAL LAND SURVEYORS-DEVELOPERS, ENTITLED: DRAINAGE AS-BUILT PLAN FINAL GRADES DATED 9/14/16, ORIGINAL SCALE 1"=10'.
 - ON-SITE TOPOGRAPHIC SURVEY BY GZA PERSONNEL, DEC. 12, 2016.
- PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "PERIMETER SURVEY OF LAND AT THE TIDEWATER FORMER MGP SITE IN PAWTUCKET, RHODE ISLAND FOR ATLANTIC ENVIRONMENTAL SERVICES INC." DEVELOPED BY LOUIS FEDERICI AND ASSOCIATES AND AN AUTO CAD FILE ENTITLED "MAX READ FIELD TRACK EXPANSION 2007" PROVIDED BY THE CITY OF PAWTUCKET.
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- VERTICAL DATUM IS BASED ON NGVD 1929 (MSL) FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
- REFERENCE SEWER DATA FROM SCANNED IMAGE PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND, ENTITLED "STUDY OF SEWERAGE FACILITIES" BY WATERMAN ENGINEERING CO. & ANDERSON NICHOLS CO. DATED NOV. 1975, ORIGINAL SCALE 1"=400' & SCANNED IMAGES OF HISTORIC PLAN & PROFILE DRAWINGS PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND.
- SITE UTILITIES TAKEN FROM 1984 SANBORN MAP AND HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND SHOWN FOR REFERENCE ONLY.

LEGEND:

- SITE AREA BOUNDARIES
 - EXISTING BUILDINGS ON-SITE
 - EXISTING FOUNDATION/PAD ON-SITE
 - FORMER BUILDING/STRUCTURE
 - EXISTING BUILDINGS/STRUCTURES OFF-SITE
 - EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
 - EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
 - PROPERTY LINE
 - APPROX. 200 FT. JURISDICTION LIMIT
 - APPROX. WATERS EDGE
 - EXISTING NBC INTERCEPTOR SANITARY SEWER
 - EXISTING CITY OF PAWTUCKET STORM DRAIN
 - EXISTING WATER LINE
 - EXISTING STORM/COMBINED SAN. SEWER OVERFLOW
 - EXISTING UNDERGROUND ELECTRIC CABLE IN CONDUIT
 - EXISTING UNDERGROUND ELECTRIC MH/STRUCTURE
 - EXISTING ACCESS ROAD
 - EXISTING RETAINING WALLS
 - EXISTING FENCE
 - EXISTING CATCH BASIN LOCATIONS
- INDICATES THAT MONITORING WELL WAS SAMPLED AS PART OF THE 2016 GROUNDWATER MONITORING PROGRAM

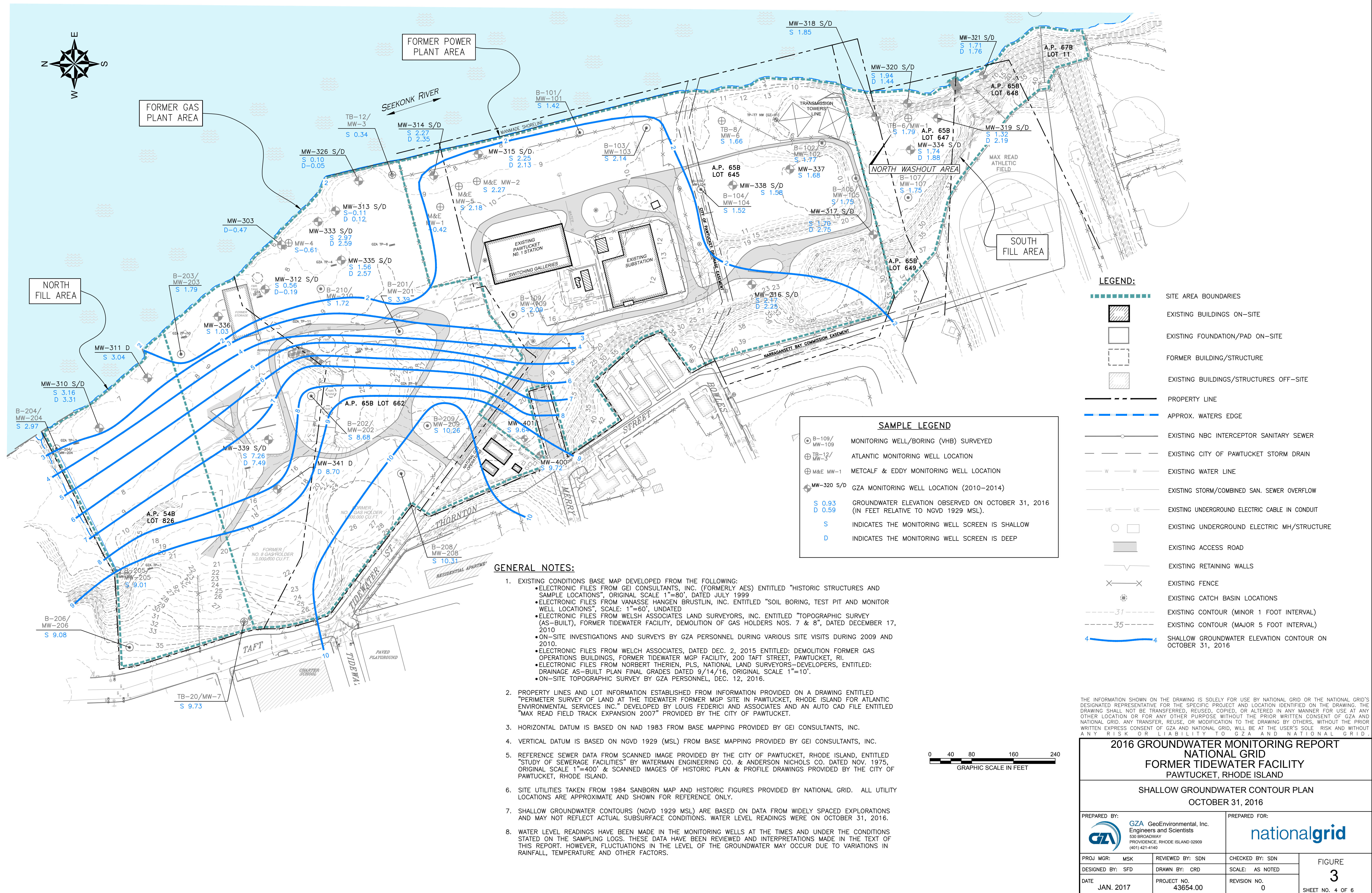
THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

2016 GROUNDWATER MONITORING REPORT NATIONAL GRID FORMER TIDEWATER FACILITY PAWTUCKET, RHODE ISLAND

EXPLORATION LOCATION PLAN FORMER POWER PLANT AREA AND SOUTH FILL AREA

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists 530 BROADWAY PROVIDENCE, RHODE ISLAND 02909 (401) 421-4140		PREPARED FOR: nationalgrid	
PROJ MGR: MSK	REVIEWED BY: SDN	CHECKED BY: SDN	FIGURE 2B SHEET NO. 3 OF 6
DESIGNED BY: SFD	DRAWN BY: CRD	SCALE: AS NOTED	
DATE JAN. 2017	PROJECT NO. 43654.00	REVISION NO. 0	

2016 - GZA GeoEnvironmental, Inc. GZA-13-ENR-A3654.mxd (CAD) GZA DWG5/Contourwater Monitoring Report\2016\A3654-00_F34.dwg [3] January 12, 2017 - 2:29pm cad:longman





APPENDIX A

LIMITATIONS

LIMITATIONS

1. This Groundwater Monitoring Report has been prepared on behalf of and for the exclusive use of The Narragansett Electric Company d/b/a National Grid (National Grid), solely for use in summarizing field activities and findings from an groundwater monitoring event completed at the Former Tidewater MGP and Power Plant Site ("Site") under the applicable provisions of the State of Rhode Island Department of Environmental Management Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of GZA GeoEnvironmental, Inc.(GZA) or National Grid.
2. GZA's work was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GZA observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. GZA's findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the study. No other warranty, express or implied is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during the work described herein.
3. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based upon services performed and observations made by GZA.
4. In the event that National Grid or others authorized to use this report obtain information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.
5. The conclusions and recommendations contained in this report are based in part upon the data obtained from environmental samples obtained from relatively widely spread subsurface explorations. The nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.
6. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized

and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more gradual. For specific information, refer to the boring logs.

7. In the event this work included the collection of water level data, these readings have been made in the test pits, borings and/or observation wells at times and under conditions stated on the exploration logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.
8. The conclusions contained in this report are based in part upon various types of chemical data and are contingent upon their validity. These data have been reviewed and interpretations made in the report. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by GZA and the conclusions and recommendations presented herein modified accordingly.



APPENDIX B

LOW FLOW LOGS

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: M&E MW-2
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1010

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 13.65 Standing water in well (feet) 5.11
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 8.54 Sample Depth (feet bgs) 10
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 5 to 15 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☐ yes ☒ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1212Stop time: 1315

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1234	8.60	22.1	6.83	12560	9.03	17.83	4	250	
1243	8.60	42.6	6.78	12931	8.24	17.98	4	250	
1246	8.60	50.1	6.80	13097	8.29	17.96	4	250	
1255	8.60	66.6	6.81	13847	8.31	18.11	4	250	
1258	8.60	71.7	6.80	13067	8.29	17.98	4	250	
1301	8.60	73.7	6.82	13075	8.31	18.04	4	250	

SAMPLE TESTING INFORMATIONSample time: 1315

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2.5 GalTubing Volume: 0.2 gals

Notes: Checked DO probe, calibration was ok.

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-6
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1035

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 18.76 Standing water in well (feet) 6.93
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 11.83 Sample Depth (feet bgs) 15
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 10 to 20 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 955 Stop time: 1035

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1007	11.8	38.2	5.73	11595	2.97	13.79	4	250	
1010	11.8	31.3	5.79	11627	2.99	13.8	4	250	
1014	11.8	21.0	5.76	11665	2.13	13.81	4	250	
1017	11.8	16.3	5.78	11707	2.05	13.86	4	250	
1020	11.8	14.6	5.78	11706	2.02	13.85	4	250	

SAMPLE TESTING INFORMATIONSample time: 1035

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 1.5 GalTubing Volume: 0.1 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-7
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 0825

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 29.35 Standing water in well (feet) 7.15
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 22.2 Sample Depth (feet bgs) 25
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 19.5 to 29.5 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: Dedicated Submersible No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 11:45Stop time: 1345

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (μS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1333	24.12	265	5.79	934	10.5	15.7	30	400	
1336	24.12	263.6	5.89	934	10.08	15.7	4	400	
1339	24.10	265.7	5.92	932	10.03	15.7	4	400	
1342	24.10	269	5.94	934	9.99	15.7	4	400	

SAMPLE TESTING INFORMATIONSample time: 1345

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 5 GalTubing Volume: 0.3 gals

Notes:

Checked and calibrated DO - DO probe functioningMaybe submersible pump causing higher DO

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-107
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/2016 1135

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 27.65 Standing water in well (feet) 7.6
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 20.05 Sample Depth (feet bgs) 21
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 16 to 26 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☐ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 815 Stop time: 940

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
922	20.1	430.7	3.21	587	0.73	12.82	4	250	
925	20.1	440.7	3.23	586	0.72	12.83	4	250	
928	20.1	445.2	3.27	587	0.63	12.89	4	250	

SAMPLE TESTING INFORMATIONSample time: 940

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2.5 GalTubing Volume: 0.2 gals

Notes:
Collected BD 11.1.16

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-109
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1000

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 19.12 Standing water in well (feet) 7.12
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 12 Sample Depth (feet bgs) 15
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 10 to 20 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☐ yes ☒ no
lock ☐ yes ☒ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1250Stop time: 1345

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1320	12.10	-66.0	6.57	489	1.57	17.11	4	250	
1327	12.10	-64.6	6.47	482	1.31	17.51	4	250	
1330	12.10	-67.2	6.50	481	1.30	17.47	4	250	
1333	12.10	-69.4	6.49	481	1.26	17.59	4	250	

SAMPLE TESTING INFORMATIONSample time: 1345

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2 GalTubing Volume: 0.2 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-201
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 0922

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 15.08 Standing water in well (feet) 3.89
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 11.29 Sample Depth (feet bgs) 10
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 5 to 15 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1325Stop time: 1420

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1353	11.30	-167.2	6.9	412	0.96	16.45	4	250	
1356	11.30	-176.3	6.92	415	0.92	16.51	4	250	
1359	11.30	-179.7	6.92	417	0.87	16.47	4	250	
1402	11.30	-181.2	6.92	416	0.82	16.45	4	250	
1405	11.30	-185.7	6.92	416	0.76	16.45	4	250	

SAMPLE TESTING INFORMATIONSample time: 1420

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2.5 GalTubing Volume: 0.2 gals

Notes:

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-208
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 0930

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 21.79 Standing water in well (feet) 3.87
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 17.92 Sample Depth (feet bgs) 17
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 10 to 20 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1355 Stop time: 1445

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1421	18.51	-63.5	6.29	608	2.25	15.8	4	100	
1424	18.5	-62.7	6.29	609	2.09	15.7	4	100	
1427	18.5	-62.1	6.29	609	1.81	15.8	4	100	
1430	18.5	-61.6	6.29	608	1.5	15.7	4	100	
1433	18.5	-61.3	6.29	605	1.37	15.5	4	100	
1436	18.5	-61.1	6.30	603	1.35	15.4	4	100	
1439	18.5	-60.5	6.30	601	1.39	15.3	4	100	

SAMPLE TESTING INFORMATIONSample time: 1445

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2 GalTubing Volume: 0. gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location City: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-310S
Sample Date: 11/2/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 0905

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 16.74 Standing water in well (feet) 10.31
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 6.43 Sample Depth (feet bgs) 12
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 7 to 17 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0830 Stop time: 0920

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
0852	6.50	-40.9	6.33	492	2.62	13.92	4	250	
0856	6.50	-41.2	6.32	493	2.14	13.95	4	250	
0904	6.50	-42.8	6.32	493	1.75	13.98	4	250	
0907	6.50	-42.7	6.32	496	1.67	13.98	4	250	
0910	6.50	-43.1	6.32	497	1.50	13.98	4	250	

SAMPLE TESTING INFORMATIONSample time: 920

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2.5 GallonsTubing Volume: 0.2 gallons

Notes: _____
Collected BD11216 _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-310D
Sample Date: 11/2/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/7/16 0905

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 36.3 Standing water in well (feet) 30.43
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 5.87 Sample Depth (feet bgs) 32
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 27 to 37 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0830Stop time: 945

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
0921	5.90	-108.1	6.77	633	1.17	13.03	4	250	
0924	5.90	-108.6	6.8	633	1.12	13.02	4	250	
0928	5.90	-108.9	6.82	633	1.08	13.02	4	250	
0931	5.90	-109.1	6.82	633	1.03	13.02	4	250	
0934	5.90	-109.2	6.83	633	1.07	13.01	4	250	

SAMPLE TESTING INFORMATIONSample time: 945

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor Petroleum like Clarity ClearPurge Volume: 3 GalTubing Volume: 0.3 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-312S
Sample Date: 11/2/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1445

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 23.5 Standing water in well (feet) 13.42
Depth to LNAPL (feet) 9.99 Well Diameter (in.) 2
Depth to water (feet) 10.08 Sample Depth (feet bgs) 13
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 5 to 20 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No.Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1012 Stop time: 1115

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1046	NM	-150.8	6.23	17088	0.26	16.76	4	250	
1049	NM	-173.8	6.20	17082	0.19	16.77	4	250	
1052	NM	-195.7	6.17	17057	0.03	16.79	4	250	
1055	NM	-211	6.17	17079	0.08	16.76	4	250	
1100	NM	-228	6.13	17108	0.00	16.92	4	250	
1103	NM	-231	6.12	17127	0.00	16.95	4	250	
1106	NM	-235	6.12	17124	0.00	16.95	4	250	

SAMPLE TESTING INFORMATIONSample time: 1115

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor Petroleum like Clarity: ClearPurge Volume: 3.5 GalTubing Volume: 0.2 galsNotes: Purge water has a sheenReplace tubing before samplingLNAPL in well - do not measure depth to water during sampling

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-312D
Sample Date: 11/2/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/2016 1445

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 31.69 Standing water in well (feet) 20.93
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 10.76 Sample Depth (feet bgs) 27
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 22 to 32 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 10:00Stop time: 10:45

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1016	10.8	-151.5	7.28	515	1.87	15.44	4	250	
1019	10.8	-152	7.29	539	1.73	15.43	4	250	
1022	10.8	152.9	7.30	540	1.63	15.4	4	250	
1030	10.8	154.4	7.32	538	1.4	15.36	4	250	
1033	10.8	154.1	7.32	599	1.33	15.37	4	250	
1036	10.8	153.3	7.32	531	1.3	15.34	4	250	
1039	10.8	153.4	7.32	530	1.25	15.33	4	250	

SAMPLE TESTING INFORMATIONSample time: 1045

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2 GalTubing Volume: 0.3 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-314S
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1015

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 24.34 Standing water in well (feet) 16.24
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 8.1 Sample Depth (feet bgs) 15
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 5 to 25 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1130Stop time: 1240

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1206	8.10	-39.6	6.33	15114	2.61	15.85	4	250	
1215	8.10	-40.8	6.28	14848	3.45	15.86	4	250	
1218	8.10	-41.6	6.27	14718	3.36	15.85	4	250	
1221	8.10	-42.1	6.27	14639	3.37	15.88	4	250	

SAMPLE TESTING INFORMATIONSample time: 1240

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2.5 GalTubing Volume: 0.2 gals

Notes:

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-314D
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1020

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 43.56 Standing water in well (feet) 35.53
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 8.03 Sample Depth (feet bgs) 40
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 35 to 45 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1115 Stop time: 1205

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1141	8.03	-77.4	6.81	19302	7.71	12.3	4	250	
1144	8.03	-76.5	6.81	17132	7.31	12.3	4	250	
1147	8.03	-68.9	6.68	15590	6.82	12.3	4	250	
1153	8.03	-67	6	15416	6.39	12.3	4	250	
1156	8.03	-66.9	6.62	15403	6.28	12.3	4	250	
1159	8.03	-66.8	6.62	15369	6.05	12.3	4	250	

SAMPLE TESTING INFORMATIONSample time: 1205

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2 GalTubing Volume: 0.3 gals

Notes:

Checked DO probe calibration - passed calibration - proceed with sampling

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-316D
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1030

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 31.53 Standing water in well (feet) 9.1
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 22.43 Sample Depth (feet bgs) 25
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 22 to 27 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: Dedicated Submersible No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1005 Stop time: 1045

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1015	22.61	156.5	6.14	611	6.57	12.81	3	200	
1018	22.61	182.2	6.17	615	6.48	13	3	200	
1034	22.61	204.5	6.24	630	6.46	14.9	3	200	
1037	22.61	205.7	6.23	637	6.42	14.8	3	200	
1040	22.61	212.3	6.24	644	6.42	14.9	3	200	

SAMPLE TESTING INFORMATIONSample time: 1045

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 3 galsTubing Volume: 0.2 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-318S
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/2016 1150

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 29.87 Standing water in well (feet) 12.76
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 17.11 Sample Depth (feet bgs) 25
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 20 to 30 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0800Stop time: 0900

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
834	17.25	373.9	2.47	3768	1.67	12.92	4	250	
840	17.25	375.7	2.25	3897	1.65	11.95	4	250	
843	17.25	375.9	2.24	3896	1.65	11.92	4	250	
846	17.25	375.8	2.23	3991	1.69	11.98	4	250	

SAMPLE TESTING INFORMATIONSample time: 850

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 1.5 GalTubing Volume: 0.1 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-318D
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/2016 1150

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) Clogged Standing water in well (feet) -
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) - Sample Depth (feet bgs) 35
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 30 to 40 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☒ poor ☐ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0800Stop time:

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
853	Clogged	183.9	5.6	410	1.03	12.75	4	250	
857	Clogged	176.8	5.68	407	1.01	11.72	4	250	
900	Clogged	173.4	5.72	409	1.17	12.68	4	250	
903	Clogged	169.9	5.73	413	1.02	12.85	4	250	
906	Clogged	167.0	5.74	411	0.97	12.89	4	250	

SAMPLE TESTING INFORMATIONSample time: 0910

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2 GalTubing Volume: 0.3 gals

Notes:

Note that MW-318D appears to be clogged with roots and was not able to be gauged by is able to be sample.

The potential need to repair this well will be evaluated.

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-326S
Sample Date: 11/2/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 14:00

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 29.38 Standing water in well (feet) 16.87
Depth to LNAPL (feet) trace Well Diameter (in.) 2
Depth to water (feet) 12.51 Sample Depth (feet bgs) 15
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 5 to 25 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0900Stop time: 1020

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1010	NM	-113.4	6.73	1444	1.91	15.4	3	150	
1014	NM	-114.2	6.73	1435	1.89	15.4	3	150	
1017	NM	-115.3	6.74	1430	1.85	15.4	3	150	

SAMPLE TESTING INFORMATIONSample time: 1020

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor Slight Fuel/oil like Clarity NonePurge Volume: 4 GalTubing Volume: 0.1 gals

Notes:
Slight sheen - bands
LNAPL in well - do not measure depth to water during sampling
Replace tubing before sampling

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-326D
Sample Date: 11/2/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1400

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 45.43 Standing water in well (feet) 33.47
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 11.96 Sample Depth (feet bgs) 33
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 23 to 43 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0845 Stop time: 955

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
908	14.95	-119.8	7.40	9296	6.40	14.3	3	200	
912	14.95	-121.4	7.39	9299	5.45	14.3	3	200	
917	14.95	-123.6	7.39	9289	3.99	14.3	3	200	
921	14.95	-123.9	7.40	9240	2.99	14.3	3	200	
926	14.95	-124.2	7.40	9199	2.18	14.3	3	200	
930	14.95	-125.5	7.40	9221	1.73	14.3	3	200	
939	14.95	-129.3	7.40	9330	0.76	14.3	3	200	
945	14.95	-131.3	7.40	9433	0.78	14.3	3	200	
948	14.95	-131.8	7.40	9457	0.75	14.3	3	200	

SAMPLE TESTING INFORMATIONSample time: 955

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor Slight Fuel/Oil Odor Clarity ClearPurge Volume: 4 GalTubing Volume: 0.3 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-333S
Sample Date: 11/2/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/30/16 0845

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 17.51 Standing water in well (feet) 8.18
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 9.33 Sample Depth (feet bgs) 11
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 6 to 16 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1045Stop time: 1150

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1115	9.11	-40.6	7.33	6265	10.13	14.9	3	150	
1118	9.11	-15.6	7.27	6288	10.06	14.9	3	150	
1122	9.11	13.96	7.18	6320	9.76	15	3	150	
1127	9.11	35.2	7.11	6349	9.85	15	3	150	
1130	9.11	44.8	7.07	6375	9.85	15	3	150	
1134	9.11	55.4	7.03	6404	9.56	15	3	150	
1138	9.11	65.1	7.00	6421	9.53	15.1	3	150	
1141	9.11	69	6.99	6448	9.36	15.1	3	150	
1144	9.11	73.8	6.97	6481	8.96	15.1	3	150	

SAMPLE TESTING INFORMATIONSample time: 1150

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2.5 GalTubing Volume: 0.1 gals

Notes:
Checked DO - calibrated fine - same readings

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-333D
Sample Date: 11/2/2016
Sampler's name: SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/30/16 0845

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 44.95 Standing water in well (feet) 35.24
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 9.71 Sample Depth (feet bgs) 35
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 30 to 40 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1045 Stop time: 1110

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1059	12.91	-167.2	7.31	6358	0.90	14.5	3	400	
1103	12.91	-168.1	7.31	6414	0.92	14.5	3	400	
1106	12.91	-168.9	7.32	6391	0.88	14.5	3	400	

SAMPLE TESTING INFORMATIONSample time: 1110

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 3 GalTubing Volume: 0.3 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-334S
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1140

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 28.75 Standing water in well (feet) 9.15
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 19.6 Sample Depth (feet bgs) 19
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 14 to 24 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: Dedicated Submersible No.Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 810 Stop time: 930

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
910	20.1	457.6	2.15	3996	0.86	14.30	4	250	
914	20.1	458.1	2.15	4034	0.83	14.30	4	250	
918	20.1	457.8	2.15	4006	0.82	14.57	4	250	
925	20.1	458	2.15	4020	0.79	14.53	4	250	

SAMPLE TESTING INFORMATIONSample time: 930

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONS

Color None Odor None Clarity Clear Purge Volume: 4 gals
Tubing Volume: 0.2 gals

Notes:

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-334D
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1140

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 37.42 Standing water in well (feet) 17.77
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 19.65 Sample Depth (feet bgs) 33
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 28 to 38 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: Submersible No.Meter Type: YSI No.Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 810 Stop time: 900

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
836	20.05	453.6	2.20	2984	1.03	9.02	4	200	
849	20.05	453.2	2.20	2946	1.16	9.13	4	200	
852	20.05	453.2	2.20	2947	1.14	9.29	4	200	
855	20.05	453.3	2.20	2945	1.05	9.50	4	200	

SAMPLE TESTING INFORMATIONSample time: 900

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 3 galsTubing Volume: 0.3 gals

Notes: _____

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-337
Sample Date: 11/1/2016
Sampler's name: SJH & SN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1040

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 19.89 Standing water in well (feet) 8.04
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 11.85 Sample Depth (feet bgs) 15
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 10 to 20 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☐ yes ☒ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 0955Stop time: 1055

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1037	11.8	-13.3	6.02	2572	2.93	15.18	4	250	
1041	11.8	-14.1	5.98	2572	3.06	15.17	4	250	
1044	11.8	-14.8	5.89	2573	3.04	15.19	4	250	
1047	11.8	-15.3	5.95	2569	2.94	15.17	4	250	

SAMPLE TESTING INFORMATIONSample time: 1055

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor None Clarity ClearPurge Volume: 2 GalTubing Volume: 0.2 gals

Notes:

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-339S
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/30/16 1530

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 12.33 Standing water in well (feet) 4.33
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 8 Sample Depth (feet bgs) 8
Depth to DNAPL (feet) - Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 3 to 10 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 1230 Stop time: 1325

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1252	8.47	502	2.13	3499	4.78	15.0	4	200	
1255	8.47	501.6	2.12	3506	4.45	15.1	3	200	
1258	8.40	500	2.12	3491	4.12	15.1	3	150	
1301	8.41	498.7	2.12	3486	3.77	15.2	3	150	
1304	8.40	497	2.11	3470	3.57	15.1	3	150	
1307	8.40	496.2	2.12	3455	3.3	15.2	3	150	
1313	8.40	494.9	2.12	3425	2.9	15.2	3	150	
1316	8.40	494.5	2.12	3414	2.75	15.3	3	150	
1319	8.40	492.8	2.12	3404	2.71	15.2	3	150	

SAMPLE TESTING INFORMATIONSample time: 1325

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor Slight Coal/tar like Clarity ClearPurge Volume: 3 galsTubing Volume: 0.1 gals

Notes: Slight Sheen - Plate like

Groundwater Sampling Data Sheet

File No. 43654
Project Tidewater
Location city: Pawtucket State: RI
Weather: Sunny 50s

Well ID: MW-339D
Sample Date: 11/1/2016
Sampler's name: SDN

WATER LEVEL OBSERVATIONSmeasurement date/time: 10/31/16 1530

Point of measurement PVC Riser ☒ Casing ☐ Ground ☐
Total well depth (feet) 21.2 Standing water in well (feet) 13.27
Depth to LNAPL (feet) - Well Diameter (in.) 2
Depth to water (feet) 7.93 Sample Depth (feet bgs) 15
Depth to DNAPL (feet) trace Standpipe TPVC to Ground (feet) -
Well Screen (feet bgs) 12 to 17 Roadbox TPVC to Ground (feet) -

Well Condition: Protective casing ☐ poor ☒ good Expansion cap ☒ yes ☐ no Well ID ☒ yes ☐ no
lock ☒ yes ☐ no Concrete Collar ☒ yes ☐ no Well ☐ poor ☒ good

EQUIPMENTSample Method: ☐ Bailer ☒ Pump / ☒ Low FlowPump Type: geopump No. Meter Type: YSI No. Flow Thru Cell Vol (mL): 250**INSTRUMENT MEASUREMENTS:**Start time: 11:50Stop time: 1235

Time	Depth to water (ft) (drawdown <0.3 or stable)	ORP (mV) (±10)	pH (s.u.) (±0.1)	Spec. Cond (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rds <0.5)	Temp. (°C) (±3%)	Turbidity (ntu) (±10% or <5 ntu)	Flow (mL/min) (<500)	Notes
1205	8.25	91.4	4.64	682	1.67	14.9	4	250	
1208	8.25	68.7	4.77	662	1.61	14.9	4	250	
1211	8.25	48.7	4.93	644	1.58	14.9	4	250	
1215	8.25	15	5.25	625	1.56	14.9	4	250	
1221	8.25	-16.9	5.57	615	1.63	14.9	4	250	
1224	8.25	-33.7	5.72	607	1.63	14.9	4	150	
1229	8.25	-37	5.76	605	1.63	14.9	3	150	
1232	8.25	-41.6	5.8	606	1.63	14.9	3	150	

SAMPLE TESTING INFORMATIONSample time: 1235

Analysis	Method	No. bottles	Bottle type	Volume	Preservation	Handling
VOC	8260	3	VOA	40	HCL	None

SAMPLE OBSERVATIONSColor None Odor Coal/Tar Like Clarity ClearPurge Volume: 2 galsTubing Volume: 0.1 gals

Notes: Slight Sheen- Plate Like

LOW FLOW CALIBRATION SHEET

File No. 43654
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 2
Date: 11/1/2016

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number: <u>YSI</u>	Standard Solution: <u>1000</u>	Reading: <u>991</u>
pH (s.u.):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>4/7</u>	Reading: <u>4.00/7.03</u>
DO (mg/L):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>100%</u>	Reading: <u>99.1</u>
ORP (mvolts):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>231</u>	Reading: <u>231</u>
Turbidity (NTU):	Instrument and Number: <u>Lamotte</u>	Standard Solution: <u>0/1</u>	Reading: <u>0 / 0.9</u>

Bump Check:

Specific Conductance:	Instrument and Number: <u>YSI</u>	Standard Solution: <u>1000</u>	Reading: <u>990</u>
pH (s.u.):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>4/7</u>	Reading: <u>3.1/6.73</u>
DO (mg/L):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>100%</u>	Reading: <u>103</u>
ORP (mvolts):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>231</u>	Reading: <u>231</u>
Turbidity (NTU):	Instrument and Number: <u>Lamotte</u>	Standard Solution: <u>0/1</u>	Reading: <u>0/2.3</u>

Revision Date: 1/27/12

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LOW FLOW CALIBRATION SHEET

File No. 43654
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 2 of 2
Date: 11/2/2016

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number: <u>YSI</u>	Standard Solution: <u>1000</u>	Reading: <u>10001</u>
pH (s.u.):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>4/7</u>	Reading: <u>4/7.02</u>
DO (mg/L):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>100</u>	Reading: <u>97.3</u>
ORP (mvolts):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>231</u>	Reading: <u>230.9</u>
Turbidity (NTU):	Instrument and Number: <u>Lamotte</u>	Standard Solution: <u>0/1</u>	Reading: <u>0/1</u>

Bump Check:

Specific Conductance:	Instrument and Number: <u>YSI</u>	Standard Solution: <u>1000</u>	Reading: <u>1031</u>
pH (s.u.):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>4/7</u>	Reading: <u>4.12/7.16</u>
DO (mg/L):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>100</u>	Reading: <u>90</u>
ORP (mvolts):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>231</u>	Reading: <u>231.1</u>
Turbidity (NTU):	Instrument and Number: <u>Lamotte</u>	Standard Solution: <u>0/1</u>	Reading: <u>0/0.3</u>

Revision Date: 1/27/12

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LOW FLOW CALIBRATION SHEET

File No. 43654
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 1
Date: 11/2/2016

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number: <u>YSI</u>	Standard Solution: <u>1000</u>	Reading: <u>1000</u>
pH (s.u.):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>4/7</u>	Reading: <u>4/7</u>
DO (mg/L):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>100%</u>	Reading: <u>100.1</u>
ORP (mvolts):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>231</u>	Reading: <u>231</u>
Turbidity (NTU):	Instrument and Number: <u>Lamotte</u>	Standard Solution: <u>0/1</u>	Reading: <u>0/1.2</u>

Bump Check:

Specific Conductance:	Instrument and Number: <u>YSI</u>	Standard Solution: <u>1000</u>	Reading: <u>1031</u>
pH (s.u.):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>4/7</u>	Reading: <u>4.01/7.03</u>
DO (mg/L):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>100%</u>	Reading: <u>102</u>
ORP (mvolts):	Instrument and Number: <u>YSI</u>	Standard Solution: <u>231</u>	Reading: <u>230.7</u>
Turbidity (NTU):	Instrument and Number: <u>Lamotte</u>	Standard Solution: <u>0/1</u>	Reading: <u>0.1/3.1</u>

Revision Date: 1/27/12

\\GZAProv1\Jobs\ENV\43654.msk\Logs\GW Sampling Logs 12.22.16.xlsx



APPENDIX C

DISPOSAL DOCUMENTATION

Truck #5781

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RIP000036462	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 009519005 FLE			
5. Generator's Name and Mailing Address Narragansett Electric company 40 Sylvan Road Waltham, MA 02451				Generator's Site Address (if different than mailing address) 200 Taft Street Pawtucket, RI 02862				
6. Transporter 1 Company Name Clean Harbors Environmental Service, Inc.				U.S. EPA ID Number MAD039322250				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Clean Harbors Environmental Service, Inc. 2900 Rockefeller Avenue Cleveland, OH 44115				U.S. EPA ID Number OHD000724153				
Facility's Phone: (216) 429-2402								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) 1. NON DOT REGULATED MATERIAL, (PURGEWATER)			10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
				No.	Type			
				001	DM			
				500	P			
				R015				
14. Special Handling Instructions and Additional Information 1. T26701RIR 1 X55								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offor's Printed/Typed Name Greg Lunn Agent for Narragansett Electric Co.				Signature <i>Greg Lunn</i>		Month Day Year 11 07 16		
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name Greg Lunn				Signature <i>Greg Lunn</i>		Month Day Year 11 07 16		
Transporter 2 Printed/Typed Name				Signature		Month Day Year		
18. Discrepancy								
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection								
Manifest Reference Number:								
18b. Alternate Facility (or Generator) U.S. EPA ID Number								
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator) Month Day Year								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. H070		2.		3.		4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name JOHN MERRIS				Signature <i>John Merris</i>		Month Day Year 11 15 16		



APPENDIX D

LABORATORY REPORTS



CERTIFICATE OF ANALYSIS

Meg Kilpatrick
GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

RE: Tidewater GH (03.0043654)
ESS Laboratory Work Order Number: 1611051

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 3:56 pm, Nov 09, 2016

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

SAMPLE RECEIPT

The following samples were received on November 02, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Lab Number	Sample Name	Matrix	Analysis
1611051-01	MW 310S	Ground Water	8260B
1611051-02	MW 310D	Ground Water	8260B
1611051-03	MW 312D	Ground Water	8260B
1611051-04	MW 312S	Ground Water	8260B
1611051-05	MW 333S	Ground Water	8260B
1611051-06	MW 326S	Ground Water	8260B
1611051-07	MW 326D	Ground Water	8260B
1611051-08	MW 333D	Ground Water	8260B
1611051-09	BD11216	Ground Water	8260B



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)
[Semivolatile Organics Internal Standard Information](#)
[Semivolatile Organics Surrogate Information](#)
[Volatile Organics Internal Standard Information](#)
[Volatile Organics Surrogate Information](#)
[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 310S

Date Sampled: 11/02/16 09:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 7:21	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 7:21	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 7:21	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Acetone	ND (0.0100)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Benzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 310S

Date Sampled: 11/02/16 09:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Naphthalene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Styrene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 310S

Date Sampled: 11/02/16 09:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Toluene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Xylene O	ND (0.0010)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 7:21	CZK0061	CK60326
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 7:21		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 310D

Date Sampled: 11/02/16 09:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2,4-Trimethylbenzene	0.554 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,3,5-Trimethylbenzene	0.147 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 10:26	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 10:26	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 10:26	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
4-Isopropyltoluene	0.0130 (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Acetone	ND (0.0100)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Benzene	0.617 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 310D

Date Sampled: 11/02/16 09:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Ethylbenzene	0.882 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Isopropylbenzene	0.0899 (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Naphthalene	7.38 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
n-Propylbenzene	0.0347 (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Styrene	0.0176 (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 310D

Date Sampled: 11/02/16 09:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Toluene	0.154 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 10:26	CZK0061	CK60326
Xylene O	0.604 (0.100)		8260B		100	11/08/16 21:23	CZK0061	CK60326
Xylene P,M	0.608 (0.200)		8260B		100	11/08/16 21:23	CZK0061	CK60326
Xylenes (Total)	1.21 (0.200)		8260B		100	11/08/16 21:23		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	81 %		70-130
Surrogate: 4-Bromofluorobenzene	103 %		70-130
Surrogate: Dibromofluoromethane	86 %		70-130
Surrogate: Toluene-d8	103 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 312D

Date Sampled: 11/02/16 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2,4-Trimethylbenzene	0.348 (0.100)		8260B		100	11/08/16 21:50	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,3,5-Trimethylbenzene	0.0177 (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 10:53	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 10:53	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 10:53	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
4-Isopropyltoluene	0.0080 (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Acetone	0.0164 (0.0100)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Benzene	5.97 (0.100)		8260B		100	11/08/16 21:50	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 312D

Date Sampled: 11/02/16 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Ethylbenzene	1.95 (0.100)		8260B		100	11/08/16 21:50	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Isopropylbenzene	0.0788 (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Naphthalene	6.41 (0.100)		8260B		100	11/08/16 21:50	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
n-Propylbenzene	0.0289 (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Styrene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 312D

Date Sampled: 11/02/16 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Toluene	0.0066 (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Xylene O	0.542 (0.100)		8260B		100	11/08/16 21:50	CZK0061	CK60326
Xylene P,M	0.0430 (0.0020)		8260B		1	11/04/16 10:53	CZK0061	CK60326
Xylenes (Total)	0.585 (0.100)		8260B		100	11/08/16 21:50		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>77 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>82 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 312S

Date Sampled: 11/02/16 11:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2,4-Trimethylbenzene	0.0910 (0.0500)		8260B		50	11/08/16 20:30	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,3,5-Trimethylbenzene	0.0055 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,3-Dichlorobenzene	0.0011 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 7:48	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 7:48	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 7:48	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
4-Isopropyltoluene	0.0023 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Acetone	ND (0.0100)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Benzene	0.0241 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 312S

Date Sampled: 11/02/16 11:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Ethylbenzene	0.466 (0.0500)		8260B		50	11/08/16 20:30	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Isopropylbenzene	0.0249 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Naphthalene	0.565 (0.0500)		8260B		50	11/08/16 20:30	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
n-Propylbenzene	0.0102 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
sec-Butylbenzene	0.0013 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Styrene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 312S

Date Sampled: 11/02/16 11:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Toluene	0.0048 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Xylene O	0.0867 (0.0010)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Xylene P,M	0.0154 (0.0020)		8260B		1	11/04/16 7:48	CZK0061	CK60326
Xylenes (Total)	0.102 (0.0020)		8260B		1	11/04/16 7:48		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	86 %		70-130
Surrogate: 4-Bromofluorobenzene	110 %		70-130
Surrogate: Dibromofluoromethane	89 %		70-130
Surrogate: Toluene-d8	103 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 333S

Date Sampled: 11/02/16 11:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/07/16 13:40	CZK0113	CK60739
1-Chlorohexane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
2-Butanone	ND (0.0100)		8260B		1	11/07/16 13:40	CZK0113	CK60739
2-Chlorotoluene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
2-Hexanone	ND (0.0100)		8260B		1	11/07/16 13:40	CZK0113	CK60739
4-Chlorotoluene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Acetone	ND (0.0100)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Benzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Bromobenzene	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 333S

Date Sampled: 11/02/16 11:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Bromodichloromethane	ND (0.0006)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Bromoform	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Bromomethane	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Carbon Disulfide	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Chlorobenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Chloroethane	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Chloroform	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Chloromethane	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Dibromochloromethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Dibromomethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Diethyl Ether	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Di-isopropyl ether	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Ethylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Hexachloroethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Isopropylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Methylene Chloride	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Naphthalene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
n-Butylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
n-Propylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
sec-Butylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Styrene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
tert-Butylbenzene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Tetrachloroethene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 333S

Date Sampled: 11/02/16 11:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Toluene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Trichloroethene	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Vinyl Acetate	ND (0.0050)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Vinyl Chloride	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Xylene O	ND (0.0010)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Xylene P,M	ND (0.0020)		8260B		1	11/07/16 13:40	CZK0113	CK60739
Xylenes (Total)	ND (0.0020)		8260B		1	11/07/16 13:40		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	112 %		70-130
Surrogate: 4-Bromofluorobenzene	88 %		70-130
Surrogate: Dibromofluoromethane	117 %		70-130
Surrogate: Toluene-d8	86 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 326S

Date Sampled: 11/02/16 10:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2,4-Trimethylbenzene	0.0103 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,3,5-Trimethylbenzene	0.0044 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,3-Dichlorobenzene	0.0013 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 9:33	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 9:33	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 9:33	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Acetone	ND (0.0100)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Benzene	0.335 (0.0100)		8260B		10	11/08/16 19:11	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 326S

Date Sampled: 11/02/16 10:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Ethylbenzene	0.0294 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Isopropylbenzene	0.0339 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Naphthalene	0.0043 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
n-Propylbenzene	0.0113 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Styrene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 326S

Date Sampled: 11/02/16 10:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Toluene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Xylene O	0.0044 (0.0010)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Xylene P,M	0.0031 (0.0020)		8260B		1	11/04/16 9:33	CZK0061	CK60326
Xylenes (Total)	0.0075 (0.0020)		8260B		1	11/04/16 9:33		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	79 %		70-130
Surrogate: 4-Bromofluorobenzene	106 %		70-130
Surrogate: Dibromofluoromethane	86 %		70-130
Surrogate: Toluene-d8	102 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 326D

Date Sampled: 11/02/16 09:55

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/07/16 14:06	CZK0113	CK60739
1-Chlorohexane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
2-Butanone	ND (0.0100)		8260B		1	11/07/16 14:06	CZK0113	CK60739
2-Chlorotoluene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
2-Hexanone	ND (0.0100)		8260B		1	11/07/16 14:06	CZK0113	CK60739
4-Chlorotoluene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Acetone	0.0115 (0.0100)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Benzene	0.0024 (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Bromobenzene	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 326D

Date Sampled: 11/02/16 09:55

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Bromodichloromethane	ND (0.0006)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Bromoform	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Bromomethane	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Carbon Disulfide	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Chlorobenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Chloroethane	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Chloroform	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Chloromethane	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Dibromochloromethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Dibromomethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Diethyl Ether	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Di-isopropyl ether	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Ethylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Hexachloroethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Isopropylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Methylene Chloride	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Naphthalene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
n-Butylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
n-Propylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
sec-Butylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Styrene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
tert-Butylbenzene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Tetrachloroethene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 326D

Date Sampled: 11/02/16 09:55

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: GEM

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Toluene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Trichloroethene	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Vinyl Acetate	ND (0.0050)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Vinyl Chloride	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Xylene O	ND (0.0010)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Xylene P,M	ND (0.0020)		8260B		1	11/07/16 14:06	CZK0113	CK60739
Xylenes (Total)	ND (0.0020)		8260B		1	11/07/16 14:06		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>121 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>122 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>87 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 333D

Date Sampled: 11/02/16 11:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2,4-Trimethylbenzene	0.103 (0.0500)		8260B		50	11/08/16 20:57	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 10:00	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 10:00	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 10:00	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Acetone	ND (0.0100)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Benzene	0.327 (0.0500)		8260B		50	11/08/16 20:57	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 333D

Date Sampled: 11/02/16 11:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Ethylbenzene	0.170 (0.0500)		8260B		50	11/08/16 20:57	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Isopropylbenzene	0.0352 (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Naphthalene	0.545 (0.0500)		8260B		50	11/08/16 20:57	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
n-Propylbenzene	0.0126 (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Styrene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 333D

Date Sampled: 11/02/16 11:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Toluene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Xylene O	0.0356 (0.0010)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Xylene P,M	0.0052 (0.0020)		8260B		1	11/04/16 10:00	CZK0061	CK60326
Xylenes (Total)	0.0408 (0.0020)		8260B		1	11/04/16 10:00		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	84 %		70-130
Surrogate: 4-Bromofluorobenzene	104 %		70-130
Surrogate: Dibromofluoromethane	85 %		70-130
Surrogate: Toluene-d8	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD11216

Date Sampled: 11/02/16 08:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 9:07	CZK0061	CK60326
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
2-Butanone	ND (0.0100)		8260B		1	11/04/16 9:07	CZK0061	CK60326
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 9:07	CZK0061	CK60326
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Acetone	ND (0.0100)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Benzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD11216

Date Sampled: 11/02/16 08:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611051

ESS Laboratory Sample ID: 1611051-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Bromoform	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Bromomethane	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Chloroethane	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Chloroform	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Chloromethane	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Naphthalene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Styrene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD11216
Date Sampled: 11/02/16 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1611051
ESS Laboratory Sample ID: 1611051-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Toluene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Xylene O	ND (0.0010)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 9:07	CZK0061	CK60326
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 9:07		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	83 %		70-130
Surrogate: 4-Bromofluorobenzene	105 %		70-130
Surrogate: Dibromofluoromethane	86 %		70-130
Surrogate: Toluene-d8	102 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60326 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,1-Dichloroethene	ND	0.0010	mg/L
1,1-Dichloropropene	ND	0.0020	mg/L
1,2,3-Trichlorobenzene	ND	0.0010	mg/L
1,2,3-Trichloropropane	ND	0.0010	mg/L
1,2,4-Trichlorobenzene	ND	0.0010	mg/L
1,2,4-Trimethylbenzene	ND	0.0010	mg/L
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L
1,2-Dibromoethane	ND	0.0010	mg/L
1,2-Dichlorobenzene	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloropropane	ND	0.0010	mg/L
1,3,5-Trimethylbenzene	ND	0.0010	mg/L
1,3-Dichlorobenzene	ND	0.0010	mg/L
1,3-Dichloropropane	ND	0.0010	mg/L
1,4-Dichlorobenzene	ND	0.0010	mg/L
1,4-Dioxane - Screen	ND	0.500	mg/L
1-Chlorohexane	ND	0.0010	mg/L
2,2-Dichloropropane	ND	0.0010	mg/L
2-Butanone	ND	0.0100	mg/L
2-Chlorotoluene	ND	0.0010	mg/L
2-Hexanone	ND	0.0100	mg/L
4-Chlorotoluene	ND	0.0010	mg/L
4-Isopropyltoluene	ND	0.0010	mg/L
4-Methyl-2-Pentanone	ND	0.0250	mg/L
Acetone	ND	0.0100	mg/L
Benzene	ND	0.0010	mg/L
Bromobenzene	ND	0.0020	mg/L
Bromochloromethane	ND	0.0010	mg/L
Bromodichloromethane	ND	0.0006	mg/L
Bromoform	ND	0.0010	mg/L
Bromomethane	ND	0.0020	mg/L
Carbon Disulfide	ND	0.0010	mg/L
Carbon Tetrachloride	ND	0.0010	mg/L
Chlorobenzene	ND	0.0010	mg/L
Chloroethane	ND	0.0020	mg/L
Chloroform	ND	0.0010	mg/L
Chloromethane	ND	0.0020	mg/L
cis-1,2-Dichloroethene	ND	0.0010	mg/L
cis-1,3-Dichloropropene	ND	0.0004	mg/L





CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60326 - 5030B

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0240		mg/L	0.02500		96	70-130			
Surrogate: 4-Bromofluorobenzene	0.0262		mg/L	0.02500		105	70-130			
Surrogate: Dibromofluoromethane	0.0248		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0252		mg/L	0.02500		101	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.90		ug/L	10.00		89	70-130			
1,1,1-Trichloroethane	10.0		ug/L	10.00		100	70-130			
1,1,2,2-Tetrachloroethane	9.86		ug/L	10.00		99	70-130			
1,1,2-Trichloroethane	9.74		ug/L	10.00		97	70-130			
1,1-Dichloroethane	9.38		ug/L	10.00		94	70-130			
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130			
1,1-Dichloropropene	10.1		ug/L	10.00		101	70-130			
1,2,3-Trichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,2,3-Trichloropropane	8.94		ug/L	10.00		89	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60326 - 5030B

1,2,4-Trichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2,4-Trimethylbenzene	9.79		ug/L	10.00		98	70-130			
1,2-Dibromo-3-Chloropropane	9.04		ug/L	10.00		90	70-130			
1,2-Dibromoethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichlorobenzene	9.59		ug/L	10.00		96	70-130			
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichloropropane	9.38		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,3-Dichlorobenzene	9.57		ug/L	10.00		96	70-130			
1,3-Dichloropropane	10.1		ug/L	10.00		101	70-130			
1,4-Dichlorobenzene	9.60		ug/L	10.00		96	70-130			
1,4-Dioxane - Screen	330		ug/L	200.0		165	0-332			
1-Chlorohexane	9.83		ug/L	10.00		98	70-130			
2,2-Dichloropropane	7.87		ug/L	10.00		79	70-130			
2-Butanone	48.1		ug/L	50.00		96	70-130			
2-Chlorotoluene	9.71		ug/L	10.00		97	70-130			
2-Hexanone	47.0		ug/L	50.00		94	70-130			
4-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
4-Isopropyltoluene	9.95		ug/L	10.00		100	70-130			
4-Methyl-2-Pentanone	45.6		ug/L	50.00		91	70-130			
Acetone	49.8		ug/L	50.00		100	70-130			
Benzene	10.1		ug/L	10.00		101	70-130			
Bromobenzene	10.0		ug/L	10.00		100	70-130			
Bromochloromethane	9.96		ug/L	10.00		100	70-130			
Bromodichloromethane	9.81		ug/L	10.00		98	70-130			
Bromoform	7.92		ug/L	10.00		79	70-130			
Bromomethane	11.0		ug/L	10.00		110	70-130			
Carbon Disulfide	9.75		ug/L	10.00		98	70-130			
Carbon Tetrachloride	10.1		ug/L	10.00		101	70-130			
Chlorobenzene	9.56		ug/L	10.00		96	70-130			
Chloroethane	8.84		ug/L	10.00		88	70-130			
Chloroform	9.84		ug/L	10.00		98	70-130			
Chloromethane	11.0		ug/L	10.00		110	70-130			
cis-1,2-Dichloroethene	9.51		ug/L	10.00		95	70-130			
cis-1,3-Dichloropropene	8.41		ug/L	10.00		84	70-130			
Dibromochloromethane	8.25		ug/L	10.00		82	70-130			
Dibromomethane	9.58		ug/L	10.00		96	70-130			
Dichlorodifluoromethane	8.88		ug/L	10.00		89	70-130			
Diethyl Ether	9.69		ug/L	10.00		97	70-130			
Di-isopropyl ether	10.1		ug/L	10.00		101	70-130			
Ethyl tertiary-butyl ether	9.95		ug/L	10.00		100	70-130			
Ethylbenzene	10.2		ug/L	10.00		102	70-130			
Hexachlorobutadiene	9.58		ug/L	10.00		96	70-130			
Hexachloroethane	8.79		ug/L	10.00		88	70-130			
Isopropylbenzene	8.26		ug/L	10.00		83	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60326 - 5030B

Methyl tert-Butyl Ether	9.93		ug/L	10.00		99	70-130			
Methylene Chloride	10.0		ug/L	10.00		100	70-130			
Naphthalene	10.5		ug/L	10.00		105	70-130			
n-Butylbenzene	10.0		ug/L	10.00		100	70-130			
n-Propylbenzene	9.77		ug/L	10.00		98	70-130			
sec-Butylbenzene	9.96		ug/L	10.00		100	70-130			
Styrene	9.83		ug/L	10.00		98	70-130			
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Tertiary-amyl methyl ether	9.99		ug/L	10.00		100	70-130			
Tetrachloroethene	9.84		ug/L	10.00		98	70-130			
Tetrahydrofuran	8.70		ug/L	10.00		87	70-130			
Toluene	10.5		ug/L	10.00		105	70-130			
trans-1,2-Dichloroethene	9.57		ug/L	10.00		96	70-130			
trans-1,3-Dichloropropene	7.98		ug/L	10.00		80	70-130			
Trichloroethene	9.86		ug/L	10.00		99	70-130			
Trichlorofluoromethane	8.39		ug/L	10.00		84	70-130			
Vinyl Acetate	7.89		ug/L	10.00		79	70-130			
Vinyl Chloride	10.7		ug/L	10.00		107	70-130			
Xylene O	10.3		ug/L	10.00		103	70-130			
Xylene P,M	19.5		ug/L	20.00		98	70-130			
Xylenes (Total)	29.8		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0258		mg/L	0.02500		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0260		mg/L	0.02500		104	70-130			
Surrogate: Dibromofluoromethane	0.0258		mg/L	0.02500		103	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.42		ug/L	10.00		94	70-130	6	25	
1,1,1-Trichloroethane	9.68		ug/L	10.00		97	70-130	3	25	
1,1,2,2-Tetrachloroethane	9.42		ug/L	10.00		94	70-130	5	25	
1,1,2-Trichloroethane	9.36		ug/L	10.00		94	70-130	4	25	
1,1-Dichloroethane	9.69		ug/L	10.00		97	70-130	3	25	
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130	0	25	
1,1-Dichloropropene	10.1		ug/L	10.00		101	70-130	0.1	25	
1,2,3-Trichlorobenzene	9.85		ug/L	10.00		98	70-130	4	25	
1,2,3-Trichloropropane	8.63		ug/L	10.00		86	70-130	4	25	
1,2,4-Trichlorobenzene	10.0		ug/L	10.00		100	70-130	4	25	
1,2,4-Trimethylbenzene	10.3		ug/L	10.00		103	70-130	5	25	
1,2-Dibromo-3-Chloropropane	7.77		ug/L	10.00		78	70-130	15	25	
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130	1	25	
1,2-Dichlorobenzene	9.75		ug/L	10.00		98	70-130	2	25	
1,2-Dichloroethane	9.57		ug/L	10.00		96	70-130	5	25	
1,2-Dichloropropane	8.89		ug/L	10.00		89	70-130	5	25	
1,3,5-Trimethylbenzene	10.0		ug/L	10.00		100	70-130	0.9	25	
1,3-Dichlorobenzene	9.64		ug/L	10.00		96	70-130	0.7	25	
1,3-Dichloropropane	9.82		ug/L	10.00		98	70-130	3	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60326 - 5030B

1,4-Dichlorobenzene	9.49		ug/L	10.00		95	70-130	1	25	
1,4-Dioxane - Screen	215		ug/L	200.0		107	0-332	42	200	
1-Chlorohexane	9.94		ug/L	10.00		99	70-130	1	25	
2,2-Dichloropropane	7.84		ug/L	10.00		78	70-130	0.4	25	
2-Butanone	47.3		ug/L	50.00		95	70-130	2	25	
2-Chlorotoluene	9.80		ug/L	10.00		98	70-130	0.9	25	
2-Hexanone	44.5		ug/L	50.00		89	70-130	5	25	
4-Chlorotoluene	9.95		ug/L	10.00		100	70-130	0.7	25	
4-Isopropyltoluene	9.74		ug/L	10.00		97	70-130	2	25	
4-Methyl-2-Pentanone	42.8		ug/L	50.00		86	70-130	6	25	
Acetone	45.4		ug/L	50.00		91	70-130	9	25	
Benzene	9.78		ug/L	10.00		98	70-130	3	25	
Bromobenzene	10.2		ug/L	10.00		102	70-130	2	25	
Bromochloromethane	9.92		ug/L	10.00		99	70-130	0.4	25	
Bromodichloromethane	9.85		ug/L	10.00		98	70-130	0.4	25	
Bromoform	7.92		ug/L	10.00		79	70-130	0	25	
Bromomethane	10.7		ug/L	10.00		107	70-130	2	25	
Carbon Disulfide	9.79		ug/L	10.00		98	70-130	0.4	25	
Carbon Tetrachloride	9.98		ug/L	10.00		100	70-130	2	25	
Chlorobenzene	9.76		ug/L	10.00		98	70-130	2	25	
Chloroethane	9.24		ug/L	10.00		92	70-130	4	25	
Chloroform	10.0		ug/L	10.00		100	70-130	2	25	
Chloromethane	10.5		ug/L	10.00		105	70-130	5	25	
cis-1,2-Dichloroethene	9.60		ug/L	10.00		96	70-130	0.9	25	
cis-1,3-Dichloropropene	8.39		ug/L	10.00		84	70-130	0.2	25	
Dibromochloromethane	8.16		ug/L	10.00		82	70-130	1	25	
Dibromomethane	9.24		ug/L	10.00		92	70-130	4	25	
Dichlorodifluoromethane	8.73		ug/L	10.00		87	70-130	2	25	
Diethyl Ether	9.99		ug/L	10.00		100	70-130	3	25	
Di-isopropyl ether	10.2		ug/L	10.00		102	70-130	1	25	
Ethyl tertiary-butyl ether	9.59		ug/L	10.00		96	70-130	4	25	
Ethylbenzene	10.5		ug/L	10.00		105	70-130	3	25	
Hexachlorobutadiene	9.68		ug/L	10.00		97	70-130	1	25	
Hexachloroethane	8.58		ug/L	10.00		86	70-130	2	25	
Isopropylbenzene	8.38		ug/L	10.00		84	70-130	1	25	
Methyl tert-Butyl Ether	9.76		ug/L	10.00		98	70-130	2	25	
Methylene Chloride	9.92		ug/L	10.00		99	70-130	1	25	
Naphthalene	9.80		ug/L	10.00		98	70-130	7	25	
n-Butylbenzene	10.2		ug/L	10.00		102	70-130	2	25	
n-Propylbenzene	9.86		ug/L	10.00		99	70-130	0.9	25	
sec-Butylbenzene	9.42		ug/L	10.00		94	70-130	6	25	
Styrene	9.88		ug/L	10.00		99	70-130	0.5	25	
tert-Butylbenzene	10.0		ug/L	10.00		100	70-130	1	25	
Tertiary-amyl methyl ether	9.50		ug/L	10.00		95	70-130	5	25	
Tetrachloroethene	9.91		ug/L	10.00		99	70-130	0.7	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60326 - 5030B

Tetrahydrofuran	8.39		ug/L	10.00		84	70-130	4	25	
Toluene	10.0		ug/L	10.00		100	70-130	4	25	
trans-1,2-Dichloroethene	9.92		ug/L	10.00		99	70-130	4	25	
trans-1,3-Dichloropropene	8.01		ug/L	10.00		80	70-130	0.4	25	
Trichloroethene	9.75		ug/L	10.00		98	70-130	1	25	
Trichlorofluoromethane	8.99		ug/L	10.00		90	70-130	7	25	
Vinyl Acetate	7.98		ug/L	10.00		80	70-130	1	25	
Vinyl Chloride	10.1		ug/L	10.00		101	70-130	6	25	
Xylene O	10.1		ug/L	10.00		101	70-130	2	25	
Xylene P,M	20.0		ug/L	20.00		100	70-130	3	25	
Xylenes (Total)	30.1		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0250		mg/L	0.02500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0257		mg/L	0.02500		103	70-130			
Surrogate: Dibromofluoromethane	0.0260		mg/L	0.02500		104	70-130			
Surrogate: Toluene-d8	0.0270		mg/L	0.02500		108	70-130			

Batch CK60739 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60739 - 5030B

4-Methyl-2-Pentanone	ND	0.0250	mg/L
Acetone	ND	0.0100	mg/L
Benzene	ND	0.0010	mg/L
Bromobenzene	ND	0.0020	mg/L
Bromochloromethane	ND	0.0010	mg/L
Bromodichloromethane	ND	0.0006	mg/L
Bromoform	ND	0.0010	mg/L
Bromomethane	ND	0.0020	mg/L
Carbon Disulfide	ND	0.0010	mg/L
Carbon Tetrachloride	ND	0.0010	mg/L
Chlorobenzene	ND	0.0010	mg/L
Chloroethane	ND	0.0020	mg/L
Chloroform	ND	0.0010	mg/L
Chloromethane	ND	0.0020	mg/L
cis-1,2-Dichloroethene	ND	0.0010	mg/L
cis-1,3-Dichloropropene	ND	0.0004	mg/L
Dibromochloromethane	ND	0.0010	mg/L
Dibromomethane	ND	0.0010	mg/L
Dichlorodifluoromethane	ND	0.0020	mg/L
Diethyl Ether	ND	0.0010	mg/L
Di-isopropyl ether	ND	0.0010	mg/L
Ethyl tertiary-butyl ether	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L
Hexachlorobutadiene	ND	0.0006	mg/L
Hexachloroethane	ND	0.0010	mg/L
Isopropylbenzene	ND	0.0010	mg/L
Methyl tert-Butyl Ether	ND	0.0010	mg/L
Methylene Chloride	ND	0.0020	mg/L
Naphthalene	ND	0.0010	mg/L
n-Butylbenzene	ND	0.0010	mg/L
n-Propylbenzene	ND	0.0010	mg/L
sec-Butylbenzene	ND	0.0010	mg/L
Styrene	ND	0.0010	mg/L
tert-Butylbenzene	ND	0.0010	mg/L
Tertiary-amyl methyl ether	ND	0.0010	mg/L
Tetrachloroethene	ND	0.0010	mg/L
Tetrahydrofuran	ND	0.0050	mg/L
Toluene	ND	0.0010	mg/L
trans-1,2-Dichloroethene	ND	0.0010	mg/L
trans-1,3-Dichloropropene	ND	0.0004	mg/L
Trichloroethene	ND	0.0010	mg/L
Trichlorofluoromethane	ND	0.0010	mg/L
Vinyl Acetate	ND	0.0050	mg/L
Vinyl Chloride	ND	0.0010	mg/L
Xylene O	ND	0.0010	mg/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60739 - 5030B

Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0279		mg/L	0.02500		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0217		mg/L	0.02500		87	70-130			
Surrogate: Dibromofluoromethane	0.0303		mg/L	0.02500		121	70-130			
Surrogate: Toluene-d8	0.0219		mg/L	0.02500		88	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.05		ug/L	10.00		90	70-130			
1,1,1-Trichloroethane	9.75		ug/L	10.00		98	70-130			
1,1,2,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2-Trichloroethane	9.98		ug/L	10.00		100	70-130			
1,1-Dichloroethane	10.4		ug/L	10.00		104	70-130			
1,1-Dichloroethene	11.5		ug/L	10.00		115	70-130			
1,1-Dichloropropene	10.3		ug/L	10.00		103	70-130			
1,2,3-Trichlorobenzene	9.25		ug/L	10.00		92	70-130			
1,2,3-Trichloropropane	9.40		ug/L	10.00		94	70-130			
1,2,4-Trichlorobenzene	8.68		ug/L	10.00		87	70-130			
1,2,4-Trimethylbenzene	8.67		ug/L	10.00		87	70-130			
1,2-Dibromo-3-Chloropropane	11.6		ug/L	10.00		116	70-130			
1,2-Dibromoethane	9.66		ug/L	10.00		97	70-130			
1,2-Dichlorobenzene	8.73		ug/L	10.00		87	70-130			
1,2-Dichloroethane	9.19		ug/L	10.00		92	70-130			
1,2-Dichloropropane	11.5		ug/L	10.00		115	70-130			
1,3,5-Trimethylbenzene	8.99		ug/L	10.00		90	70-130			
1,3-Dichlorobenzene	9.17		ug/L	10.00		92	70-130			
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130			
1,4-Dichlorobenzene	9.16		ug/L	10.00		92	70-130			
1,4-Dioxane - Screen	198		ug/L	200.0		99	0-332			
1-Chlorohexane	8.40		ug/L	10.00		84	70-130			
2,2-Dichloropropane	9.81		ug/L	10.00		98	70-130			
2-Butanone	54.6		ug/L	50.00		109	70-130			
2-Chlorotoluene	8.93		ug/L	10.00		89	70-130			
2-Hexanone	53.5		ug/L	50.00		107	70-130			
4-Chlorotoluene	8.68		ug/L	10.00		87	70-130			
4-Isopropyltoluene	9.07		ug/L	10.00		91	70-130			
4-Methyl-2-Pentanone	52.6		ug/L	50.00		105	70-130			
Acetone	46.6		ug/L	50.00		93	70-130			
Benzene	10.4		ug/L	10.00		104	70-130			
Bromobenzene	9.43		ug/L	10.00		94	70-130			
Bromochloromethane	10.6		ug/L	10.00		106	70-130			
Bromodichloromethane	10.0		ug/L	10.00		100	70-130			
Bromoform	9.72		ug/L	10.00		97	70-130			
Bromomethane	8.46		ug/L	10.00		85	70-130			
Carbon Disulfide	12.8		ug/L	10.00		128	70-130			
Carbon Tetrachloride	10.0		ug/L	10.00		100	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60739 - 5030B

Chlorobenzene	9.19		ug/L	10.00		92	70-130			
Chloroethane	8.61		ug/L	10.00		86	70-130			
Chloroform	9.91		ug/L	10.00		99	70-130			
Chloromethane	8.59		ug/L	10.00		86	70-130			
cis-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130			
cis-1,3-Dichloropropene	10.0		ug/L	10.00		100	70-130			
Dibromochloromethane	8.66		ug/L	10.00		87	70-130			
Dibromomethane	10.0		ug/L	10.00		100	70-130			
Dichlorodifluoromethane	8.98		ug/L	10.00		90	70-130			
Diethyl Ether	8.05		ug/L	10.00		80	70-130			
Di-isopropyl ether	11.2		ug/L	10.00		112	70-130			
Ethyl tertiary-butyl ether	10.4		ug/L	10.00		104	70-130			
Ethylbenzene	9.40		ug/L	10.00		94	70-130			
Hexachlorobutadiene	9.37		ug/L	10.00		94	70-130			
Hexachloroethane	9.23		ug/L	10.00		92	70-130			
Isopropylbenzene	7.69		ug/L	10.00		77	70-130			
Methyl tert-Butyl Ether	10.2		ug/L	10.00		102	70-130			
Methylene Chloride	10.9		ug/L	10.00		109	70-130			
Naphthalene	9.60		ug/L	10.00		96	70-130			
n-Butylbenzene	9.05		ug/L	10.00		90	70-130			
n-Propylbenzene	9.21		ug/L	10.00		92	70-130			
sec-Butylbenzene	8.87		ug/L	10.00		89	70-130			
Styrene	7.96		ug/L	10.00		80	70-130			
tert-Butylbenzene	8.88		ug/L	10.00		89	70-130			
Tertiary-amyl methyl ether	9.51		ug/L	10.00		95	70-130			
Tetrachloroethene	9.20		ug/L	10.00		92	70-130			
Tetrahydrofuran	11.2		ug/L	10.00		112	70-130			
Toluene	10.1		ug/L	10.00		101	70-130			
trans-1,2-Dichloroethene	10.3		ug/L	10.00		103	70-130			
trans-1,3-Dichloropropene	9.29		ug/L	10.00		93	70-130			
Trichloroethene	9.89		ug/L	10.00		99	70-130			
Trichlorofluoromethane	8.79		ug/L	10.00		88	70-130			
Vinyl Acetate	9.21		ug/L	10.00		92	70-130			
Vinyl Chloride	9.15		ug/L	10.00		92	70-130			
Xylene O	8.28		ug/L	10.00		83	70-130			
Xylene P,M	18.5		ug/L	20.00		92	70-130			
Xylenes (Total)	26.8		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0239		mg/L	0.02500		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0217		mg/L	0.02500		87	70-130			
Surrogate: Dibromofluoromethane	0.0272		mg/L	0.02500		109	70-130			
Surrogate: Toluene-d8	0.0259		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.31		ug/L	10.00		93	70-130	3	25	
1,1,1-Trichloroethane	9.84		ug/L	10.00		98	70-130	0.9	25	
1,1,2,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130	0.6	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60739 - 5030B

1,1,2-Trichloroethane	10.2		ug/L	10.00		102	70-130	2	25	
1,1-Dichloroethane	10.6		ug/L	10.00		106	70-130	2	25	
1,1-Dichloroethene	11.4		ug/L	10.00		114	70-130	1	25	
1,1-Dichloropropene	10.6		ug/L	10.00		106	70-130	2	25	
1,2,3-Trichlorobenzene	9.43		ug/L	10.00		94	70-130	2	25	
1,2,3-Trichloropropane	9.79		ug/L	10.00		98	70-130	4	25	
1,2,4-Trichlorobenzene	9.09		ug/L	10.00		91	70-130	5	25	
1,2,4-Trimethylbenzene	8.96		ug/L	10.00		90	70-130	3	25	
1,2-Dibromo-3-Chloropropane	11.1		ug/L	10.00		111	70-130	4	25	
1,2-Dibromoethane	9.63		ug/L	10.00		96	70-130	0.3	25	
1,2-Dichlorobenzene	9.00		ug/L	10.00		90	70-130	3	25	
1,2-Dichloroethane	9.80		ug/L	10.00		98	70-130	6	25	
1,2-Dichloropropane	10.7		ug/L	10.00		107	70-130	7	25	
1,3,5-Trimethylbenzene	9.31		ug/L	10.00		93	70-130	3	25	
1,3-Dichlorobenzene	9.33		ug/L	10.00		93	70-130	2	25	
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130	0.7	25	
1,4-Dichlorobenzene	9.08		ug/L	10.00		91	70-130	0.9	25	
1,4-Dioxane - Screen	213		ug/L	200.0		106	0-332	7	200	
1-Chlorohexane	8.81		ug/L	10.00		88	70-130	5	25	
2,2-Dichloropropane	9.41		ug/L	10.00		94	70-130	4	25	
2-Butanone	55.5		ug/L	50.00		111	70-130	2	25	
2-Chlorotoluene	9.08		ug/L	10.00		91	70-130	2	25	
2-Hexanone	52.3		ug/L	50.00		105	70-130	2	25	
4-Chlorotoluene	8.90		ug/L	10.00		89	70-130	3	25	
4-Isopropyltoluene	9.23		ug/L	10.00		92	70-130	2	25	
4-Methyl-2-Pentanone	50.4		ug/L	50.00		101	70-130	4	25	
Acetone	44.5		ug/L	50.00		89	70-130	5	25	
Benzene	10.6		ug/L	10.00		106	70-130	2	25	
Bromobenzene	9.56		ug/L	10.00		96	70-130	1	25	
Bromochloromethane	10.4		ug/L	10.00		104	70-130	2	25	
Bromodichloromethane	9.89		ug/L	10.00		99	70-130	2	25	
Bromoform	9.94		ug/L	10.00		99	70-130	2	25	
Bromomethane	10.4		ug/L	10.00		104	70-130	20	25	
Carbon Disulfide	12.7		ug/L	10.00		127	70-130	0.5	25	
Carbon Tetrachloride	9.99		ug/L	10.00		100	70-130	0.5	25	
Chlorobenzene	9.46		ug/L	10.00		95	70-130	3	25	
Chloroethane	9.19		ug/L	10.00		92	70-130	7	25	
Chloroform	10.2		ug/L	10.00		102	70-130	3	25	
Chloromethane	8.98		ug/L	10.00		90	70-130	4	25	
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	2	25	
cis-1,3-Dichloropropene	10.2		ug/L	10.00		102	70-130	2	25	
Dibromochloromethane	8.64		ug/L	10.00		86	70-130	0.2	25	
Dibromomethane	10.1		ug/L	10.00		101	70-130	0.7	25	
Dichlorodifluoromethane	8.75		ug/L	10.00		88	70-130	3	25	
Diethyl Ether	8.39		ug/L	10.00		84	70-130	4	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60739 - 5030B

Di-isopropyl ether	11.3		ug/L	10.00		113	70-130	1	25	
Ethyl tertiary-butyl ether	10.2		ug/L	10.00		102	70-130	3	25	
Ethylbenzene	9.53		ug/L	10.00		95	70-130	1	25	
Hexachlorobutadiene	9.13		ug/L	10.00		91	70-130	3	25	
Hexachloroethane	9.27		ug/L	10.00		93	70-130	0.4	25	
Isopropylbenzene	7.60		ug/L	10.00		76	70-130	1	25	
Methyl tert-Butyl Ether	10.2		ug/L	10.00		102	70-130	0.4	25	
Methylene Chloride	11.1		ug/L	10.00		111	70-130	2	25	
Naphthalene	9.51		ug/L	10.00		95	70-130	0.9	25	
n-Butylbenzene	9.33		ug/L	10.00		93	70-130	3	25	
n-Propylbenzene	9.38		ug/L	10.00		94	70-130	2	25	
sec-Butylbenzene	8.71		ug/L	10.00		87	70-130	2	25	
Styrene	8.15		ug/L	10.00		82	70-130	2	25	
tert-Butylbenzene	8.86		ug/L	10.00		89	70-130	0.2	25	
Tertiary-amyl methyl ether	9.74		ug/L	10.00		97	70-130	2	25	
Tetrachloroethene	9.09		ug/L	10.00		91	70-130	1	25	
Tetrahydrofuran	10.9		ug/L	10.00		109	70-130	2	25	
Toluene	10.3		ug/L	10.00		103	70-130	2	25	
trans-1,2-Dichloroethene	10.8		ug/L	10.00		108	70-130	5	25	
trans-1,3-Dichloropropene	9.63		ug/L	10.00		96	70-130	4	25	
Trichloroethene	10.2		ug/L	10.00		102	70-130	3	25	
Trichlorofluoromethane	8.96		ug/L	10.00		90	70-130	2	25	
Vinyl Acetate	9.60		ug/L	10.00		96	70-130	4	25	
Vinyl Chloride	10.5		ug/L	10.00		105	70-130	14	25	
Xylene O	9.30		ug/L	10.00		93	70-130	12	25	
Xylene P,M	18.5		ug/L	20.00		92	70-130	0.05	25	
Xylenes (Total)	27.8		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0258		mg/L	0.02500		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0221		mg/L	0.02500		88	70-130			
Surrogate: Dibromofluoromethane	0.0268		mg/L	0.02500		107	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611051

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/CMT
 Shipped/Delivered Via: Client

ESS Project ID: 1611051
 Date Received: 11/2/2016
 Project Due Date: 11/9/2016
 Days for Project: 5 Day

1. Air bill manifest present? ☐ No
 Air No.: NA
2. Were custody seals present? ☐ No
3. Is radiation count <100 CPM? ☐ Yes
4. Is a Cooler Present? ☐ Yes
 Temp: 5.3 Iced with: Ice
5. Was COC signed and dated by client? ☐ Yes

6. Does COC match bottles? ☐ Yes
7. Is COC complete and correct? ☐ Yes
8. Were samples received intact? ☒ Yes NO 11/2/16
9. Were labs informed about short holds & rushes? Yes / No / NA
10. Were any analyses received outside of hold time? Yes / NO

11. Any Subcontracting needed? Yes / No
 ESS Sample IDs: _____
 Analysis: _____
 TAT: _____

12. Were VOAs received? ☒ Yes / No
 a. Air bubbles in aqueous VOAs? Yes / No
 b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? ☒ Yes / No
 a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
 b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

10/11/16 BD11216 Broken at Receipt w/ 11/2/16

14. Was there a need to contact Project Manager? ☒ Yes / No
 a. Was there a need to contact the client? ☒ Yes / No
 Who was contacted? Sophia Narkiewicz Date: 11/03/16 Time: _____ By: CMT

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	79649	Yes	No	Yes	VOA Vial - HCl	HCl	
01	79650	Yes	No	Yes	VOA Vial - HCl	HCl	
01	79651	Yes	No	Yes	VOA Vial - HCl	HCl	
02	79646	Yes	No	Yes	VOA Vial - HCl	HCl	
02	79647	Yes	No	Yes	VOA Vial - HCl	HCl	
02	79648	Yes	No	Yes	VOA Vial - HCl	HCl	
03	79643	Yes	No	Yes	VOA Vial - HCl	HCl	
03	79644	Yes	No	Yes	VOA Vial - HCl	HCl	
03	79645	Yes	No	Yes	VOA Vial - HCl	HCl	
04	79640	Yes	No	Yes	VOA Vial - HCl	HCl	
04	79641	Yes	No	Yes	VOA Vial - HCl	HCl	
04	79642	Yes	No	Yes	VOA Vial - HCl	HCl	
05	79637	Yes	No	Yes	VOA Vial - HCl	HCl	
05	79638	Yes	No	Yes	VOA Vial - HCl	HCl	
05	79639	Yes	No	Yes	VOA Vial - HCl	HCl	
06	79634	Yes	No	Yes	VOA Vial - HCl	HCl	
06	79635	Yes	No	Yes	VOA Vial - HCl	HCl	
06	79636	Yes	No	Yes	VOA Vial - HCl	HCl	
07	79631	Yes	No	Yes	VOA Vial - HCl	HCl	
07	79632	Yes	No	Yes	VOA Vial - HCl	HCl	
07	79633	Yes	No	Yes	VOA Vial - HCl	HCl	
08	79628	Yes	No	Yes	VOA Vial - HCl	HCl	
08	79629	Yes	No	Yes	VOA Vial - HCl	HCl	
08	79630	Yes	No	Yes	VOA Vial - HCl	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/CMT

ESS Project ID: 1611051
Date Received: 11/2/2016

09	79652	Yes	No	Yes	VOA Vial - HCl	HCl
09	79653	Yes	No	Yes	VOA Vial - HCl	HCl

2nd Review

Are barcode labels on correct containers?

☒ Yes ☐ No

Completed

By: [Signature]

Date & Time: 11/2/16 1532

Reviewed

By: [Signature]

Date & Time: 11/2/16 1543

Delivered

By: [Signature]

Date & Time: 11/2/16 1543

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time ☒ Standard Other

Regulatory State: MA ☒ RI ☒ CT ☐ NH ☐ NJ ☐ NY ☐ ME ☐ Other

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other

Project # 43054 Project Name T. NEW AREA

Address 530 BRADWAY

City ZIP 02909

State RI

Fax

email: Sophia Narkewicz

PO #

ESS Lab ID

Date 11/2

Collection Time 0915

Grab-G Composite-C

Matrix

Sample ID

Pres Code

of Containers

Type of Container

Vol of Container

Analysis

VOCs 02608

40mL

X

✓

✓

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Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile VVOA

Marker S-Solid D-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Ascorbic Acid, 8-ZnAc2, 9-

Cooler Present ☒ Yes ☐ No

Seals Intact ☒ Yes ☐ No NA: ☒ Pickup

Cooler Temperature: 5.3 Ice 11/2/16

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

1 (White) Lab Copy

2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody



CERTIFICATE OF ANALYSIS

Meg Kilpatrick
GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

RE: Tidewater GH (03.0043654)
ESS Laboratory Work Order Number: 1611052

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 5:24 pm, Nov 09, 2016

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

SAMPLE RECEIPT

The following samples were received on November 02, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the Guidelines Establishing Test Procedures for the Analysis of Pollutants, 40 CFR Part 136, as amended.

Lab Number	Sample Name	Matrix	Analysis
1611052-01	MW-318S	Ground Water	8260B
1611052-02	MW-318D	Ground Water	8260B
1611052-03	MW-334S	Ground Water	8260B
1611052-04	MW-334D	Ground Water	8260B
1611052-05	MW-107	Ground Water	8260B
1611052-06	BD-1116	Ground Water	8260B
1611052-07	MW-316D	Ground Water	8260B
1611052-08	MW6	Ground Water	8260B
1611052-09	MW-337	Ground Water	8260B
1611052-10	MW 314S	Ground Water	8260B
1611052-11	MW 314D	Ground Water	8260B
1611052-12	MW 339S	Ground Water	8260B
1611052-13	MW 339D	Ground Water	8260B
1611052-14	MW-7	Ground Water	8260B
1611052-15	MW-201	Ground Water	8260B
1611052-16	MW-109	Ground Water	8260B
1611052-17	M&E MW-2	Ground Water	8260B
1611052-18	MW 208	Ground Water	8260B
1611052-19	Trip Blank	Aqueous	8260B



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CZK0063-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
Chloromethane (36% @ 30%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)
[Semivolatile Organics Internal Standard Information](#)
[Semivolatile Organics Surrogate Information](#)
[Volatile Organics Internal Standard Information](#)
[Volatile Organics Surrogate Information](#)
[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 11/01/16 08:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2,4-Trimethylbenzene	0.0183 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,3,5-Trimethylbenzene	0.0075 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 20:02	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 20:02	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 20:02	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Benzene	0.0426 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 11/01/16 08:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Ethylbenzene	0.0046 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Naphthalene	0.504 (0.0500)		8260B		50	11/08/16 20:04	CZK0063	CK60328
n-Butylbenzene	0.0014 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Styrene	0.0024 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 11/01/16 08:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Toluene	0.0314 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Xylene O	0.0165 (0.0010)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Xylene P,M	0.0366 (0.0020)		8260B		1	11/04/16 20:02	CZK0063	CK60328
Xylenes (Total)	0.0531 (0.0020)		8260B		1	11/04/16 20:02		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	88 %		70-130
Surrogate: 4-Bromofluorobenzene	96 %		70-130
Surrogate: Dibromofluoromethane	91 %		70-130
Surrogate: Toluene-d8	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 11/01/16 09:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 13:03	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 13:03	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 13:03	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 11/01/16 09:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318D
Date Sampled: 11/01/16 09:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1611052
ESS Laboratory Sample ID: 1611052-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 13:03	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 13:03		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	94 %		70-130
Surrogate: 4-Bromofluorobenzene	92 %		70-130
Surrogate: Dibromofluoromethane	96 %		70-130
Surrogate: Toluene-d8	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 11/01/16 09:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2,4-Trimethylbenzene	0.0014 (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 13:29	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 13:29	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 13:29	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Benzene	0.0028 (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 11/01/16 09:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Naphthalene	0.0447 (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 11/01/16 09:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Toluene	0.0016 (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Xylene O	0.0011 (0.0010)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 13:29	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 13:29		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>97 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 11/01/16 09:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 13:56	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 13:56	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 13:56	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Benzene	0.0022 (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 11/01/16 09:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
cis-1,2-Dichloroethene	0.0011 (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Naphthalene	0.0302 (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 11/01/16 09:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Toluene	0.0012 (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Trichloroethene	0.0018 (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 13:56	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 13:56		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	96 %		70-130
Surrogate: 4-Bromofluorobenzene	92 %		70-130
Surrogate: Dibromofluoromethane	98 %		70-130
Surrogate: Toluene-d8	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 11/01/16 09:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/08/16 18:17	CZK0141	CK60845
1-Chlorohexane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
2-Butanone	ND (0.0100)		8260B		1	11/08/16 18:17	CZK0141	CK60845
2-Chlorotoluene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
2-Hexanone	ND (0.0100)		8260B		1	11/08/16 18:17	CZK0141	CK60845
4-Chlorotoluene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Acetone	ND (0.0100)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Benzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Bromobenzene	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 11/01/16 09:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Bromodichloromethane	ND (0.0006)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Bromoform	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Bromomethane	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Carbon Disulfide	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Chlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Chloroethane	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Chloroform	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Chloromethane	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Dibromochloromethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Dibromomethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Diethyl Ether	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Di-isopropyl ether	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Ethylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Hexachloroethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Isopropylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Methylene Chloride	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Naphthalene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
n-Butylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
n-Propylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
sec-Butylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Styrene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
tert-Butylbenzene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Tetrachloroethene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-107
Date Sampled: 11/01/16 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1611052
ESS Laboratory Sample ID: 1611052-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Toluene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Trichloroethene	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Vinyl Acetate	ND (0.0050)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Vinyl Chloride	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Xylene O	ND (0.0010)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Xylene P,M	ND (0.0020)		8260B		1	11/08/16 18:17	CZK0141	CK60845
Xylenes (Total)	ND (0.0020)		8260B		1	11/08/16 18:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	94 %		70-130
Surrogate: 4-Bromofluorobenzene	101 %		70-130
Surrogate: Dibromofluoromethane	94 %		70-130
Surrogate: Toluene-d8	106 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1116

Date Sampled: 11/01/16 08:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 14:48	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 14:48	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 14:48	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1116

Date Sampled: 11/01/16 08:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1116

Date Sampled: 11/01/16 08:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 14:48	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 14:48		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	92 %		70-130
Surrogate: 4-Bromofluorobenzene	88 %		70-130
Surrogate: Dibromofluoromethane	100 %		70-130
Surrogate: Toluene-d8	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 11/01/16 10:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 15:15	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 15:15	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 15:15	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 11/01/16 10:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 11/01/16 10:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 15:15	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 15:15		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW6

Date Sampled: 11/01/16 10:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 17:51	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 17:51	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 17:51	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Benzene	0.0185 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW6

Date Sampled: 11/01/16 10:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Ethylbenzene	0.0119 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Isopropylbenzene	0.0022 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Naphthalene	0.0019 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
n-Butylbenzene	0.0011 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
n-Propylbenzene	0.0016 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW6

Date Sampled: 11/01/16 10:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Toluene	0.0015 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Xylene O	0.0105 (0.0010)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 17:51	CZK0063	CK60328
Xylenes (Total)	0.0105 (0.0020)		8260B		1	11/04/16 17:51		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	91 %		70-130
Surrogate: 4-Bromofluorobenzene	98 %		70-130
Surrogate: Dibromofluoromethane	97 %		70-130
Surrogate: Toluene-d8	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 11/01/16 10:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 18:17	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 18:17	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 18:17	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Benzene	0.0080 (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 11/01/16 10:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Ethylbenzene	0.0018 (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 11/01/16 10:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 18:17	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 18:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	92 %		70-130
Surrogate: 4-Bromofluorobenzene	96 %		70-130
Surrogate: Dibromofluoromethane	93 %		70-130
Surrogate: Toluene-d8	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 314S

Date Sampled: 11/01/16 12:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 18:44	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 18:44	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 18:44	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 314S

Date Sampled: 11/01/16 12:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 314S

Date Sampled: 11/01/16 12:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 18:44	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 18:44		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	91 %		70-130
Surrogate: 4-Bromofluorobenzene	91 %		70-130
Surrogate: Dibromofluoromethane	95 %		70-130
Surrogate: Toluene-d8	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 314D

Date Sampled: 11/01/16 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 17:25	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 17:25	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 17:25	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 314D

Date Sampled: 11/01/16 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 314D

Date Sampled: 11/01/16 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 17:25	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 17:25		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	91 %		70-130
Surrogate: 4-Bromofluorobenzene	92 %		70-130
Surrogate: Dibromofluoromethane	92 %		70-130
Surrogate: Toluene-d8	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 339S

Date Sampled: 11/01/16 13:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2,4-Trimethylbenzene	0.0248 (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,3,5-Trimethylbenzene	0.0114 (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 19:10	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 19:10	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 19:10	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Acetone	0.0148 (0.0100)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 339S

Date Sampled: 11/01/16 13:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Naphthalene	1.31 (0.100)		8260B		100	11/08/16 22:16	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
n-Propylbenzene	0.0010 (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Styrene	0.0029 (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 339S

Date Sampled: 11/01/16 13:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Toluene	0.0018 (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Xylene O	0.0080 (0.0010)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Xylene P,M	0.0056 (0.0020)		8260B		1	11/04/16 19:10	CZK0063	CK60328
Xylenes (Total)	0.0136 (0.0020)		8260B		1	11/04/16 19:10		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	95 %		70-130
Surrogate: 4-Bromofluorobenzene	100 %		70-130
Surrogate: Dibromofluoromethane	97 %		70-130
Surrogate: Toluene-d8	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 339D

Date Sampled: 11/01/16 12:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2,4-Trimethylbenzene	0.437 (0.100)		8260B		100	11/08/16 22:43	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,3,5-Trimethylbenzene	0.121 (0.100)		8260B		100	11/08/16 22:43	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 20:28	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 20:28	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 20:28	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
4-Isopropyltoluene	0.0098 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Benzene	0.0129 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 339D

Date Sampled: 11/01/16 12:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Ethylbenzene	0.130 (0.100)		8260B		100	11/08/16 22:43	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Isopropylbenzene	0.0591 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Naphthalene	3.88 (0.100)		8260B		100	11/08/16 22:43	CZK0063	CK60328
n-Butylbenzene	0.0100 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
n-Propylbenzene	0.0341 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
sec-Butylbenzene	0.0019 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Styrene	0.0124 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 339D

Date Sampled: 11/01/16 12:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Toluene	0.0351 (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 20:28	CZK0063	CK60328
Xylene O	0.321 (0.100)		8260B		100	11/08/16 22:43	CZK0063	CK60328
Xylene P,M	0.326 (0.200)		8260B		100	11/08/16 22:43	CZK0063	CK60328
Xylenes (Total)	0.647 (0.200)		8260B		100	11/08/16 22:43		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	89 %		70-130
Surrogate: 4-Bromofluorobenzene	105 %		70-130
Surrogate: Dibromofluoromethane	94 %		70-130
Surrogate: Toluene-d8	95 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 11/01/16 13:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 15:41	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 15:41	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 15:41	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 11/01/16 13:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 11/01/16 13:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 15:41	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 15:41		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>99 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 11/01/16 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2,4-Trimethylbenzene	0.0051 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/08/16 18:44	CZK0141	CK60845
1-Chlorohexane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
2-Butanone	ND (0.0100)		8260B		1	11/08/16 18:44	CZK0141	CK60845
2-Chlorotoluene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
2-Hexanone	ND (0.0100)		8260B		1	11/08/16 18:44	CZK0141	CK60845
4-Chlorotoluene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Acetone	ND (0.0100)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Benzene	0.0686 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Bromobenzene	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 11/01/16 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Bromodichloromethane	ND (0.0006)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Bromoform	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Bromomethane	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Carbon Disulfide	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Chlorobenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Chloroethane	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Chloroform	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Chloromethane	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Dibromochloromethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Dibromomethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Diethyl Ether	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Di-isopropyl ether	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Ethylbenzene	0.0061 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Hexachloroethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Isopropylbenzene	0.0151 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Methylene Chloride	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Naphthalene	0.0028 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
n-Butylbenzene	0.0041 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
n-Propylbenzene	0.0120 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
sec-Butylbenzene	0.0016 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Styrene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
tert-Butylbenzene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Tetrachloroethene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 11/01/16 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Toluene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Trichloroethene	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Vinyl Acetate	ND (0.0050)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Vinyl Chloride	ND (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Xylene O	0.0026 (0.0010)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Xylene P,M	ND (0.0020)		8260B		1	11/08/16 18:44	CZK0141	CK60845
Xylenes (Total)	0.0026 (0.0020)		8260B		1	11/08/16 18:44		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	96 %		70-130
Surrogate: 4-Bromofluorobenzene	96 %		70-130
Surrogate: Dibromofluoromethane	96 %		70-130
Surrogate: Toluene-d8	103 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 11/01/16 13:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2,4-Trimethylbenzene	0.0058 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 16:59	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 16:59	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 16:59	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Benzene	0.312 (0.0100)		8260B		10	11/08/16 19:37	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 11/01/16 13:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Ethylbenzene	0.0182 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Isopropylbenzene	0.0160 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Naphthalene	0.0255 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
n-Butylbenzene	0.0052 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
n-Propylbenzene	0.0083 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
sec-Butylbenzene	0.0018 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 11/01/16 13:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Toluene	0.0020 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Xylene O	0.0124 (0.0010)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Xylene P,M	0.0021 (0.0020)		8260B		1	11/04/16 16:59	CZK0063	CK60328
Xylenes (Total)	0.0144 (0.0020)		8260B		1	11/04/16 16:59		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	92 %		70-130
Surrogate: 4-Bromofluorobenzene	105 %		70-130
Surrogate: Dibromofluoromethane	98 %		70-130
Surrogate: Toluene-d8	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M&E MW-2

Date Sampled: 11/01/16 13:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-17

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 16:07	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 16:07	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 16:07	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M&E MW-2

Date Sampled: 11/01/16 13:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-17

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M&E MW-2

Date Sampled: 11/01/16 13:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-17

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 16:07	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 16:07		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 208

Date Sampled: 11/01/16 14:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-18

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 16:33	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 16:33	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 16:33	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Benzene	0.0010 (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW 208

Date Sampled: 11/01/16 14:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-18

Sample Matrix: Ground Water

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
n-Butylbenzene	0.0034 (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
sec-Butylbenzene	0.0026 (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW 208
Date Sampled: 11/01/16 14:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1611052
ESS Laboratory Sample ID: 1611052-18
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 16:33	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 16:33		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	94 %		70-130
Surrogate: 4-Bromofluorobenzene	102 %		70-130
Surrogate: Dibromofluoromethane	97 %		70-130
Surrogate: Toluene-d8	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank

Date Sampled: 11/01/16 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-19

Sample Matrix: Aqueous

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,1-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,1-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,1-Dichloropropene	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2-Dibromoethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2-Dichloroethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,3-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1,4-Dioxane - Screen	ND (0.500)		8260B		1	11/04/16 12:10	CZK0063	CK60328
1-Chlorohexane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
2,2-Dichloropropane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
2-Butanone	ND (0.0100)		8260B		1	11/04/16 12:10	CZK0063	CK60328
2-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
2-Hexanone	ND (0.0100)		8260B		1	11/04/16 12:10	CZK0063	CK60328
4-Chlorotoluene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
4-Isopropyltoluene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Acetone	ND (0.0100)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Benzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Bromobenzene	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank

Date Sampled: 11/01/16 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1611052

ESS Laboratory Sample ID: 1611052-19

Sample Matrix: Aqueous

Units: mg/L

Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Bromodichloromethane	ND (0.0006)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Bromoform	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Bromomethane	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Carbon Disulfide	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Carbon Tetrachloride	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Chlorobenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Chloroethane	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Chloroform	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Chloromethane	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Dibromochloromethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Dibromomethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Dichlorodifluoromethane	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Diethyl Ether	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Di-isopropyl ether	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Ethylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Hexachlorobutadiene	ND (0.0006)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Hexachloroethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Isopropylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Methylene Chloride	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Naphthalene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
n-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
n-Propylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
sec-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Styrene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
tert-Butylbenzene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Tetrachloroethene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: Trip Blank
Date Sampled: 11/01/16 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1611052
ESS Laboratory Sample ID: 1611052-19
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Toluene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Trichloroethene	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Trichlorofluoromethane	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Vinyl Acetate	ND (0.0050)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Vinyl Chloride	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Xylene O	ND (0.0010)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Xylene P,M	ND (0.0020)		8260B		1	11/04/16 12:10	CZK0063	CK60328
Xylenes (Total)	ND (0.0020)		8260B		1	11/04/16 12:10		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	93 %		70-130
Surrogate: 4-Bromofluorobenzene	92 %		70-130
Surrogate: Dibromofluoromethane	99 %		70-130
Surrogate: Toluene-d8	101 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60328 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L
1,1,1-Trichloroethane	ND	0.0010	mg/L
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L
1,1,2-Trichloroethane	ND	0.0010	mg/L
1,1-Dichloroethane	ND	0.0010	mg/L
1,1-Dichloroethene	ND	0.0010	mg/L
1,1-Dichloropropene	ND	0.0020	mg/L
1,2,3-Trichlorobenzene	ND	0.0010	mg/L
1,2,3-Trichloropropane	ND	0.0010	mg/L
1,2,4-Trichlorobenzene	ND	0.0010	mg/L
1,2,4-Trimethylbenzene	ND	0.0010	mg/L
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L
1,2-Dibromoethane	ND	0.0010	mg/L
1,2-Dichlorobenzene	ND	0.0010	mg/L
1,2-Dichloroethane	ND	0.0010	mg/L
1,2-Dichloropropane	ND	0.0010	mg/L
1,3,5-Trimethylbenzene	ND	0.0010	mg/L
1,3-Dichlorobenzene	ND	0.0010	mg/L
1,3-Dichloropropane	ND	0.0010	mg/L
1,4-Dichlorobenzene	ND	0.0010	mg/L
1,4-Dioxane - Screen	ND	0.500	mg/L
1-Chlorohexane	ND	0.0010	mg/L
2,2-Dichloropropane	ND	0.0010	mg/L
2-Butanone	ND	0.0100	mg/L
2-Chlorotoluene	ND	0.0010	mg/L
2-Hexanone	ND	0.0100	mg/L
4-Chlorotoluene	ND	0.0010	mg/L
4-Isopropyltoluene	ND	0.0010	mg/L
4-Methyl-2-Pentanone	ND	0.0250	mg/L
Acetone	ND	0.0100	mg/L
Benzene	ND	0.0010	mg/L
Bromobenzene	ND	0.0020	mg/L
Bromochloromethane	ND	0.0010	mg/L
Bromodichloromethane	ND	0.0006	mg/L
Bromoform	ND	0.0010	mg/L
Bromomethane	ND	0.0020	mg/L
Carbon Disulfide	ND	0.0010	mg/L
Carbon Tetrachloride	ND	0.0010	mg/L
Chlorobenzene	ND	0.0010	mg/L
Chloroethane	ND	0.0020	mg/L
Chloroform	ND	0.0010	mg/L
Chloromethane	ND	0.0020	mg/L
cis-1,2-Dichloroethene	ND	0.0010	mg/L
cis-1,3-Dichloropropene	ND	0.0004	mg/L



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60328 - 5030B

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0235		mg/L	0.02500		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0226		mg/L	0.02500		90	70-130			
Surrogate: Dibromofluoromethane	0.0245		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0252		mg/L	0.02500		101	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.43		ug/L	10.00		94	70-130			
1,1,1-Trichloroethane	9.94		ug/L	10.00		99	70-130			
1,1,2,2-Tetrachloroethane	10.3		ug/L	10.00		103	70-130			
1,1,2-Trichloroethane	10.6		ug/L	10.00		106	70-130			
1,1-Dichloroethane	9.44		ug/L	10.00		94	70-130			
1,1-Dichloroethene	10.0		ug/L	10.00		100	70-130			
1,1-Dichloropropene	9.48		ug/L	10.00		95	70-130			
1,2,3-Trichlorobenzene	9.95		ug/L	10.00		100	70-130			
1,2,3-Trichloropropane	9.45		ug/L	10.00		94	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60328 - 5030B

1,2,4-Trichlorobenzene	9.68		ug/L	10.00		97	70-130			
1,2,4-Trimethylbenzene	8.35		ug/L	10.00		84	70-130			
1,2-Dibromo-3-Chloropropane	9.29		ug/L	10.00		93	70-130			
1,2-Dibromoethane	9.86		ug/L	10.00		99	70-130			
1,2-Dichlorobenzene	9.16		ug/L	10.00		92	70-130			
1,2-Dichloroethane	9.49		ug/L	10.00		95	70-130			
1,2-Dichloropropane	9.13		ug/L	10.00		91	70-130			
1,3,5-Trimethylbenzene	8.51		ug/L	10.00		85	70-130			
1,3-Dichlorobenzene	9.39		ug/L	10.00		94	70-130			
1,3-Dichloropropane	10.0		ug/L	10.00		100	70-130			
1,4-Dichlorobenzene	8.99		ug/L	10.00		90	70-130			
1,4-Dioxane - Screen	197		ug/L	200.0		99	0-332			
1-Chlorohexane	8.62		ug/L	10.00		86	70-130			
2,2-Dichloropropane	9.51		ug/L	10.00		95	70-130			
2-Butanone	49.8		ug/L	50.00		100	70-130			
2-Chlorotoluene	8.58		ug/L	10.00		86	70-130			
2-Hexanone	46.9		ug/L	50.00		94	70-130			
4-Chlorotoluene	8.64		ug/L	10.00		86	70-130			
4-Isopropyltoluene	9.21		ug/L	10.00		92	70-130			
4-Methyl-2-Pentanone	47.7		ug/L	50.00		95	70-130			
Acetone	52.7		ug/L	50.00		105	70-130			
Benzene	9.50		ug/L	10.00		95	70-130			
Bromobenzene	9.45		ug/L	10.00		94	70-130			
Bromochloromethane	10.2		ug/L	10.00		102	70-130			
Bromodichloromethane	9.95		ug/L	10.00		100	70-130			
Bromoform	10.2		ug/L	10.00		102	70-130			
Bromomethane	10.7		ug/L	10.00		107	70-130			
Carbon Disulfide	9.95		ug/L	10.00		100	70-130			
Carbon Tetrachloride	10.0		ug/L	10.00		100	70-130			
Chlorobenzene	9.43		ug/L	10.00		94	70-130			
Chloroethane	8.79		ug/L	10.00		88	70-130			
Chloroform	9.85		ug/L	10.00		98	70-130			
Chloromethane	7.46		ug/L	10.00		75	70-130			
cis-1,2-Dichloroethene	9.08		ug/L	10.00		91	70-130			
cis-1,3-Dichloropropene	9.49		ug/L	10.00		95	70-130			
Dibromochloromethane	9.88		ug/L	10.00		99	70-130			
Dibromomethane	9.90		ug/L	10.00		99	70-130			
Dichlorodifluoromethane	9.45		ug/L	10.00		94	70-130			
Diethyl Ether	8.06		ug/L	10.00		81	70-130			
Di-isopropyl ether	9.19		ug/L	10.00		92	70-130			
Ethyl tertiary-butyl ether	8.88		ug/L	10.00		89	70-130			
Ethylbenzene	8.58		ug/L	10.00		86	70-130			
Hexachlorobutadiene	10.5		ug/L	10.00		105	70-130			
Hexachloroethane	12.2		ug/L	10.00		122	70-130			
Isopropylbenzene	7.26		ug/L	10.00		73	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60328 - 5030B

Methyl tert-Butyl Ether	8.99		ug/L	10.00		90	70-130			
Methylene Chloride	9.70		ug/L	10.00		97	70-130			
Naphthalene	8.87		ug/L	10.00		89	70-130			
n-Butylbenzene	9.61		ug/L	10.00		96	70-130			
n-Propylbenzene	8.91		ug/L	10.00		89	70-130			
sec-Butylbenzene	9.30		ug/L	10.00		93	70-130			
Styrene	9.04		ug/L	10.00		90	70-130			
tert-Butylbenzene	8.66		ug/L	10.00		87	70-130			
Tertiary-amyl methyl ether	8.91		ug/L	10.00		89	70-130			
Tetrachloroethene	11.4		ug/L	10.00		114	70-130			
Tetrahydrofuran	10.4		ug/L	10.00		104	70-130			
Toluene	9.74		ug/L	10.00		97	70-130			
trans-1,2-Dichloroethene	9.24		ug/L	10.00		92	70-130			
trans-1,3-Dichloropropene	9.07		ug/L	10.00		91	70-130			
Trichloroethene	9.45		ug/L	10.00		94	70-130			
Trichlorofluoromethane	9.34		ug/L	10.00		93	70-130			
Vinyl Acetate	8.45		ug/L	10.00		84	70-130			
Vinyl Chloride	8.44		ug/L	10.00		84	70-130			
Xylene O	9.42		ug/L	10.00		94	70-130			
Xylene P,M	18.1		ug/L	20.00		90	70-130			
Xylenes (Total)	27.5		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0257		mg/L	0.02500		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.0243		mg/L	0.02500		97	70-130			
Surrogate: Dibromofluoromethane	0.0259		mg/L	0.02500		104	70-130			
Surrogate: Toluene-d8	0.0249		mg/L	0.02500		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.14		ug/L	10.00		91	70-130	3	25	
1,1,1-Trichloroethane	9.42		ug/L	10.00		94	70-130	5	25	
1,1,2,2-Tetrachloroethane	9.79		ug/L	10.00		98	70-130	5	25	
1,1,2-Trichloroethane	9.30		ug/L	10.00		93	70-130	13	25	
1,1-Dichloroethane	9.25		ug/L	10.00		92	70-130	2	25	
1,1-Dichloroethene	9.71		ug/L	10.00		97	70-130	3	25	
1,1-Dichloropropene	8.99		ug/L	10.00		90	70-130	5	25	
1,2,3-Trichlorobenzene	8.86		ug/L	10.00		89	70-130	12	25	
1,2,3-Trichloropropane	8.91		ug/L	10.00		89	70-130	6	25	
1,2,4-Trichlorobenzene	9.14		ug/L	10.00		91	70-130	6	25	
1,2,4-Trimethylbenzene	8.04		ug/L	10.00		80	70-130	4	25	
1,2-Dibromo-3-Chloropropane	9.26		ug/L	10.00		93	70-130	0.3	25	
1,2-Dibromoethane	9.87		ug/L	10.00		99	70-130	0.1	25	
1,2-Dichlorobenzene	8.72		ug/L	10.00		87	70-130	5	25	
1,2-Dichloroethane	9.09		ug/L	10.00		91	70-130	4	25	
1,2-Dichloropropane	8.82		ug/L	10.00		88	70-130	3	25	
1,3,5-Trimethylbenzene	8.22		ug/L	10.00		82	70-130	3	25	
1,3-Dichlorobenzene	9.37		ug/L	10.00		94	70-130	0.2	25	
1,3-Dichloropropane	9.70		ug/L	10.00		97	70-130	3	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60328 - 5030B

1,4-Dichlorobenzene	8.72		ug/L	10.00		87	70-130	3	25	
1,4-Dioxane - Screen	182		ug/L	200.0		91	0-332	8	200	
1-Chlorohexane	8.83		ug/L	10.00		88	70-130	2	25	
2,2-Dichloropropane	9.47		ug/L	10.00		95	70-130	0.4	25	
2-Butanone	47.8		ug/L	50.00		96	70-130	4	25	
2-Chlorotoluene	8.37		ug/L	10.00		84	70-130	2	25	
2-Hexanone	45.0		ug/L	50.00		90	70-130	4	25	
4-Chlorotoluene	8.34		ug/L	10.00		83	70-130	4	25	
4-Isopropyltoluene	8.62		ug/L	10.00		86	70-130	7	25	
4-Methyl-2-Pentanone	42.1		ug/L	50.00		84	70-130	13	25	
Acetone	46.2		ug/L	50.00		92	70-130	13	25	
Benzene	9.29		ug/L	10.00		93	70-130	2	25	
Bromobenzene	9.34		ug/L	10.00		93	70-130	1	25	
Bromochloromethane	9.93		ug/L	10.00		99	70-130	2	25	
Bromodichloromethane	9.64		ug/L	10.00		96	70-130	3	25	
Bromoform	10.2		ug/L	10.00		102	70-130	0.1	25	
Bromomethane	10.0		ug/L	10.00		100	70-130	6	25	
Carbon Disulfide	9.52		ug/L	10.00		95	70-130	4	25	
Carbon Tetrachloride	9.93		ug/L	10.00		99	70-130	1	25	
Chlorobenzene	9.07		ug/L	10.00		91	70-130	4	25	
Chloroethane	7.73		ug/L	10.00		77	70-130	13	25	
Chloroform	9.63		ug/L	10.00		96	70-130	2	25	
Chloromethane	7.09		ug/L	10.00		71	70-130	5	25	
cis-1,2-Dichloroethene	9.01		ug/L	10.00		90	70-130	0.8	25	
cis-1,3-Dichloropropene	9.36		ug/L	10.00		94	70-130	1	25	
Dibromochloromethane	9.27		ug/L	10.00		93	70-130	6	25	
Dibromomethane	9.31		ug/L	10.00		93	70-130	6	25	
Dichlorodifluoromethane	8.99		ug/L	10.00		90	70-130	5	25	
Diethyl Ether	7.85		ug/L	10.00		78	70-130	3	25	
Di-isopropyl ether	8.81		ug/L	10.00		88	70-130	4	25	
Ethyl tertiary-butyl ether	8.46		ug/L	10.00		85	70-130	5	25	
Ethylbenzene	8.66		ug/L	10.00		87	70-130	0.9	25	
Hexachlorobutadiene	10.0		ug/L	10.00		100	70-130	5	25	
Hexachloroethane	11.9		ug/L	10.00		119	70-130	3	25	
Isopropylbenzene	7.03		ug/L	10.00		70	70-130	3	25	
Methyl tert-Butyl Ether	8.61		ug/L	10.00		86	70-130	4	25	
Methylene Chloride	9.49		ug/L	10.00		95	70-130	2	25	
Naphthalene	7.79		ug/L	10.00		78	70-130	13	25	
n-Butylbenzene	8.73		ug/L	10.00		87	70-130	10	25	
n-Propylbenzene	8.54		ug/L	10.00		85	70-130	4	25	
sec-Butylbenzene	8.57		ug/L	10.00		86	70-130	8	25	
Styrene	8.47		ug/L	10.00		85	70-130	7	25	
tert-Butylbenzene	8.11		ug/L	10.00		81	70-130	7	25	
Tertiary-amyl methyl ether	8.29		ug/L	10.00		83	70-130	7	25	
Tetrachloroethene	10.9		ug/L	10.00		109	70-130	5	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60328 - 5030B

Tetrahydrofuran	9.22		ug/L	10.00		92	70-130	12	25	
Toluene	9.23		ug/L	10.00		92	70-130	5	25	
trans-1,2-Dichloroethene	9.12		ug/L	10.00		91	70-130	1	25	
trans-1,3-Dichloropropene	8.93		ug/L	10.00		89	70-130	2	25	
Trichloroethene	9.10		ug/L	10.00		91	70-130	4	25	
Trichlorofluoromethane	9.02		ug/L	10.00		90	70-130	3	25	
Vinyl Acetate	8.04		ug/L	10.00		80	70-130	5	25	
Vinyl Chloride	8.73		ug/L	10.00		87	70-130	3	25	
Xylene O	9.16		ug/L	10.00		92	70-130	3	25	
Xylene P,M	17.7		ug/L	20.00		89	70-130	2	25	
Xylenes (Total)	26.9		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0245		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0238		mg/L	0.02500		95	70-130			
Surrogate: Dibromofluoromethane	0.0258		mg/L	0.02500		103	70-130			
Surrogate: Toluene-d8	0.0252		mg/L	0.02500		101	70-130			

Batch CK60845 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60845 - 5030B

4-Methyl-2-Pentanone	ND	0.0250	mg/L
Acetone	ND	0.0100	mg/L
Benzene	ND	0.0010	mg/L
Bromobenzene	ND	0.0020	mg/L
Bromochloromethane	ND	0.0010	mg/L
Bromodichloromethane	ND	0.0006	mg/L
Bromoform	ND	0.0010	mg/L
Bromomethane	ND	0.0020	mg/L
Carbon Disulfide	ND	0.0010	mg/L
Carbon Tetrachloride	ND	0.0010	mg/L
Chlorobenzene	ND	0.0010	mg/L
Chloroethane	ND	0.0020	mg/L
Chloroform	ND	0.0010	mg/L
Chloromethane	ND	0.0020	mg/L
cis-1,2-Dichloroethene	ND	0.0010	mg/L
cis-1,3-Dichloropropene	ND	0.0004	mg/L
Dibromochloromethane	ND	0.0010	mg/L
Dibromomethane	ND	0.0010	mg/L
Dichlorodifluoromethane	ND	0.0020	mg/L
Diethyl Ether	ND	0.0010	mg/L
Di-isopropyl ether	ND	0.0010	mg/L
Ethyl tertiary-butyl ether	ND	0.0010	mg/L
Ethylbenzene	ND	0.0010	mg/L
Hexachlorobutadiene	ND	0.0006	mg/L
Hexachloroethane	ND	0.0010	mg/L
Isopropylbenzene	ND	0.0010	mg/L
Methyl tert-Butyl Ether	ND	0.0010	mg/L
Methylene Chloride	ND	0.0020	mg/L
Naphthalene	ND	0.0010	mg/L
n-Butylbenzene	ND	0.0010	mg/L
n-Propylbenzene	ND	0.0010	mg/L
sec-Butylbenzene	ND	0.0010	mg/L
Styrene	ND	0.0010	mg/L
tert-Butylbenzene	ND	0.0010	mg/L
Tertiary-amyl methyl ether	ND	0.0010	mg/L
Tetrachloroethene	ND	0.0010	mg/L
Tetrahydrofuran	ND	0.0050	mg/L
Toluene	ND	0.0010	mg/L
trans-1,2-Dichloroethene	ND	0.0010	mg/L
trans-1,3-Dichloropropene	ND	0.0004	mg/L
Trichloroethene	ND	0.0010	mg/L
Trichlorofluoromethane	ND	0.0010	mg/L
Vinyl Acetate	ND	0.0050	mg/L
Vinyl Chloride	ND	0.0010	mg/L
Xylene O	ND	0.0010	mg/L





CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60845 - 5030B

Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0231		mg/L	0.02500		92	70-130			
Surrogate: 4-Bromofluorobenzene	0.0251		mg/L	0.02500		100	70-130			
Surrogate: Dibromofluoromethane	0.0234		mg/L	0.02500		93	70-130			
Surrogate: Toluene-d8	0.0264		mg/L	0.02500		106	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.26		ug/L	10.00		93	70-130			
1,1,1-Trichloroethane	9.17		ug/L	10.00		92	70-130			
1,1,2,2-Tetrachloroethane	9.74		ug/L	10.00		97	70-130			
1,1,2-Trichloroethane	9.26		ug/L	10.00		93	70-130			
1,1-Dichloroethane	9.22		ug/L	10.00		92	70-130			
1,1-Dichloroethene	9.55		ug/L	10.00		96	70-130			
1,1-Dichloropropene	9.87		ug/L	10.00		99	70-130			
1,2,3-Trichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2,3-Trichloropropane	10.0		ug/L	10.00		100	70-130			
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,2,4-Trimethylbenzene	9.49		ug/L	10.00		95	70-130			
1,2-Dibromo-3-Chloropropane	9.66		ug/L	10.00		97	70-130			
1,2-Dibromoethane	9.90		ug/L	10.00		99	70-130			
1,2-Dichlorobenzene	9.69		ug/L	10.00		97	70-130			
1,2-Dichloroethane	9.49		ug/L	10.00		95	70-130			
1,2-Dichloropropane	9.18		ug/L	10.00		92	70-130			
1,3,5-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,3-Dichlorobenzene	9.68		ug/L	10.00		97	70-130			
1,3-Dichloropropane	10.2		ug/L	10.00		102	70-130			
1,4-Dichlorobenzene	9.54		ug/L	10.00		95	70-130			
1,4-Dioxane - Screen	310		ug/L	200.0		155	0-332			
1-Chlorohexane	10.1		ug/L	10.00		101	70-130			
2,2-Dichloropropane	9.14		ug/L	10.00		91	70-130			
2-Butanone	49.3		ug/L	50.00		99	70-130			
2-Chlorotoluene	9.54		ug/L	10.00		95	70-130			
2-Hexanone	49.8		ug/L	50.00		100	70-130			
4-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
4-Isopropyltoluene	10.3		ug/L	10.00		103	70-130			
4-Methyl-2-Pentanone	50.3		ug/L	50.00		101	70-130			
Acetone	52.8		ug/L	50.00		106	70-130			
Benzene	9.69		ug/L	10.00		97	70-130			
Bromobenzene	10.2		ug/L	10.00		102	70-130			
Bromochloromethane	9.38		ug/L	10.00		94	70-130			
Bromodichloromethane	9.05		ug/L	10.00		90	70-130			
Bromoform	9.04		ug/L	10.00		90	70-130			
Bromomethane	10.9		ug/L	10.00		109	70-130			
Carbon Disulfide	9.83		ug/L	10.00		98	70-130			
Carbon Tetrachloride	9.40		ug/L	10.00		94	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60845 - 5030B

Chlorobenzene	9.94		ug/L	10.00		99	70-130			
Chloroethane	10.3		ug/L	10.00		103	70-130			
Chloroform	9.41		ug/L	10.00		94	70-130			
Chloromethane	10.6		ug/L	10.00		106	70-130			
cis-1,2-Dichloroethene	8.90		ug/L	10.00		89	70-130			
cis-1,3-Dichloropropene	9.44		ug/L	10.00		94	70-130			
Dibromochloromethane	9.60		ug/L	10.00		96	70-130			
Dibromomethane	9.60		ug/L	10.00		96	70-130			
Dichlorodifluoromethane	9.22		ug/L	10.00		92	70-130			
Diethyl Ether	8.85		ug/L	10.00		88	70-130			
Di-isopropyl ether	10.2		ug/L	10.00		102	70-130			
Ethyl tertiary-butyl ether	9.85		ug/L	10.00		98	70-130			
Ethylbenzene	10.2		ug/L	10.00		102	70-130			
Hexachlorobutadiene	11.4		ug/L	10.00		114	70-130			
Hexachloroethane	9.25		ug/L	10.00		92	70-130			
Isopropylbenzene	8.24		ug/L	10.00		82	70-130			
Methyl tert-Butyl Ether	9.47		ug/L	10.00		95	70-130			
Methylene Chloride	9.31		ug/L	10.00		93	70-130			
Naphthalene	10.3		ug/L	10.00		103	70-130			
n-Butylbenzene	10.3		ug/L	10.00		103	70-130			
n-Propylbenzene	9.87		ug/L	10.00		99	70-130			
sec-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Styrene	9.94		ug/L	10.00		99	70-130			
tert-Butylbenzene	10.0		ug/L	10.00		100	70-130			
Tertiary-amyl methyl ether	9.75		ug/L	10.00		98	70-130			
Tetrachloroethene	8.76		ug/L	10.00		88	70-130			
Tetrahydrofuran	8.53		ug/L	10.00		85	70-130			
Toluene	9.94		ug/L	10.00		99	70-130			
trans-1,2-Dichloroethene	9.38		ug/L	10.00		94	70-130			
trans-1,3-Dichloropropene	9.13		ug/L	10.00		91	70-130			
Trichloroethene	9.51		ug/L	10.00		95	70-130			
Trichlorofluoromethane	8.05		ug/L	10.00		80	70-130			
Vinyl Acetate	8.51		ug/L	10.00		85	70-130			
Vinyl Chloride	10.2		ug/L	10.00		102	70-130			
Xylene O	9.46		ug/L	10.00		95	70-130			
Xylene P,M	20.2		ug/L	20.00		101	70-130			
Xylenes (Total)	29.7		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0243		mg/L	0.02500		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		98	70-130			
Surrogate: Dibromofluoromethane	0.0246		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0256		mg/L	0.02500		103	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.45		ug/L	10.00		94	70-130	2	25	
1,1,1-Trichloroethane	9.44		ug/L	10.00		94	70-130	3	25	
1,1,2,2-Tetrachloroethane	8.98		ug/L	10.00		90	70-130	8	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60845 - 5030B

1,1,2-Trichloroethane	8.95		ug/L	10.00		90	70-130	3	25	
1,1-Dichloroethane	9.63		ug/L	10.00		96	70-130	4	25	
1,1-Dichloroethene	9.85		ug/L	10.00		98	70-130	3	25	
1,1-Dichloropropene	10.0		ug/L	10.00		100	70-130	2	25	
1,2,3-Trichlorobenzene	9.80		ug/L	10.00		98	70-130	6	25	
1,2,3-Trichloropropane	9.30		ug/L	10.00		93	70-130	7	25	
1,2,4-Trichlorobenzene	10.2		ug/L	10.00		102	70-130	0.9	25	
1,2,4-Trimethylbenzene	9.23		ug/L	10.00		92	70-130	3	25	
1,2-Dibromo-3-Chloropropane	9.66		ug/L	10.00		97	70-130	0	25	
1,2-Dibromoethane	9.81		ug/L	10.00		98	70-130	0.9	25	
1,2-Dichlorobenzene	9.88		ug/L	10.00		99	70-130	2	25	
1,2-Dichloroethane	9.55		ug/L	10.00		96	70-130	0.6	25	
1,2-Dichloropropane	9.12		ug/L	10.00		91	70-130	0.7	25	
1,3,5-Trimethylbenzene	9.87		ug/L	10.00		99	70-130	1	25	
1,3-Dichlorobenzene	9.51		ug/L	10.00		95	70-130	2	25	
1,3-Dichloropropane	9.62		ug/L	10.00		96	70-130	6	25	
1,4-Dichlorobenzene	9.75		ug/L	10.00		98	70-130	2	25	
1,4-Dioxane - Screen	245		ug/L	200.0		123	0-332	23	200	
1-Chlorohexane	9.60		ug/L	10.00		96	70-130	5	25	
2,2-Dichloropropane	9.28		ug/L	10.00		93	70-130	2	25	
2-Butanone	46.3		ug/L	50.00		93	70-130	6	25	
2-Chlorotoluene	9.39		ug/L	10.00		94	70-130	2	25	
2-Hexanone	47.0		ug/L	50.00		94	70-130	6	25	
4-Chlorotoluene	9.44		ug/L	10.00		94	70-130	6	25	
4-Isopropyltoluene	9.90		ug/L	10.00		99	70-130	4	25	
4-Methyl-2-Pentanone	45.9		ug/L	50.00		92	70-130	9	25	
Acetone	47.0		ug/L	50.00		94	70-130	12	25	
Benzene	9.82		ug/L	10.00		98	70-130	1	25	
Bromobenzene	10.2		ug/L	10.00		102	70-130	0.3	25	
Bromochloromethane	9.20		ug/L	10.00		92	70-130	2	25	
Bromodichloromethane	8.82		ug/L	10.00		88	70-130	3	25	
Bromoform	8.97		ug/L	10.00		90	70-130	0.8	25	
Bromomethane	11.5		ug/L	10.00		115	70-130	5	25	
Carbon Disulfide	9.97		ug/L	10.00		100	70-130	1	25	
Carbon Tetrachloride	9.42		ug/L	10.00		94	70-130	0.2	25	
Chlorobenzene	9.83		ug/L	10.00		98	70-130	1	25	
Chloroethane	9.39		ug/L	10.00		94	70-130	9	25	
Chloroform	9.47		ug/L	10.00		95	70-130	0.6	25	
Chloromethane	10.4		ug/L	10.00		104	70-130	2	25	
cis-1,2-Dichloroethene	9.34		ug/L	10.00		93	70-130	5	25	
cis-1,3-Dichloropropene	9.62		ug/L	10.00		96	70-130	2	25	
Dibromochloromethane	9.50		ug/L	10.00		95	70-130	1	25	
Dibromomethane	9.20		ug/L	10.00		92	70-130	4	25	
Dichlorodifluoromethane	8.90		ug/L	10.00		89	70-130	4	25	
Diethyl Ether	9.06		ug/L	10.00		91	70-130	2	25	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CK60845 - 5030B

Di-isopropyl ether	10.1		ug/L	10.00		101	70-130	1	25	
Ethyl tertiary-butyl ether	9.46		ug/L	10.00		95	70-130	4	25	
Ethylbenzene	9.93		ug/L	10.00		99	70-130	2	25	
Hexachlorobutadiene	10.6		ug/L	10.00		106	70-130	7	25	
Hexachloroethane	9.76		ug/L	10.00		98	70-130	5	25	
Isopropylbenzene	8.26		ug/L	10.00		83	70-130	0.2	25	
Methyl tert-Butyl Ether	9.40		ug/L	10.00		94	70-130	0.7	25	
Methylene Chloride	9.19		ug/L	10.00		92	70-130	1	25	
Naphthalene	9.59		ug/L	10.00		96	70-130	8	25	
n-Butylbenzene	9.83		ug/L	10.00		98	70-130	5	25	
n-Propylbenzene	9.74		ug/L	10.00		97	70-130	1	25	
sec-Butylbenzene	9.93		ug/L	10.00		99	70-130	3	25	
Styrene	9.79		ug/L	10.00		98	70-130	2	25	
tert-Butylbenzene	9.94		ug/L	10.00		99	70-130	0.9	25	
Tertiary-amyl methyl ether	9.33		ug/L	10.00		93	70-130	4	25	
Tetrachloroethene	8.99		ug/L	10.00		90	70-130	3	25	
Tetrahydrofuran	9.22		ug/L	10.00		92	70-130	8	25	
Toluene	9.73		ug/L	10.00		97	70-130	2	25	
trans-1,2-Dichloroethene	9.41		ug/L	10.00		94	70-130	0.3	25	
trans-1,3-Dichloropropene	8.77		ug/L	10.00		88	70-130	4	25	
Trichloroethene	9.53		ug/L	10.00		95	70-130	0.2	25	
Trichlorofluoromethane	8.48		ug/L	10.00		85	70-130	5	25	
Vinyl Acetate	8.15		ug/L	10.00		82	70-130	4	25	
Vinyl Chloride	9.93		ug/L	10.00		99	70-130	3	25	
Xylene O	9.80		ug/L	10.00		98	70-130	4	25	
Xylene P,M	20.5		ug/L	20.00		103	70-130	1	25	
Xylenes (Total)	30.3		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0244		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0243		mg/L	0.02500		97	70-130			
Surrogate: Dibromofluoromethane	0.0250		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

Notes and Definitions

U	Analyte included in the analysis, but not detected
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1611052

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/CMT

ESS Project ID: 1611052

Date Received: 11/2/2016

Project Due Date: 11/9/2016

Days for Project: 5 Day

Shipped/Delivered Via: Client

1. Air bill manifest present? ☐ No

Air No.: NA

2. Were custody seals present? ☐ No

3. Is radiation count <100 CPM? ☐ Yes

4. Is a Cooler Present? ☐ Yes

Temp: 5.3 Iced with: Ice

5. Was COC signed and dated by client? ☐ Yes

6. Does COC match bottles? ☐ Yes

7. Is COC complete and correct? ☐ Yes

8. Were samples received intact? ☒ No

9. Were labs informed about short holds & rushes? Yes / No / NA

10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No

ESS Sample IDs: _____

Analysis: _____

TAT: _____

12. Were VOAs received? ☒ Yes / No

a. Air bubbles in aqueous VOAs? Yes / No

b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? ☒ Yes / No

a. If metals preserved upon receipt: Date: _____

b. Low Level VOA vials frozen: Date: _____

Time: _____ By: _____

Time: _____ By: _____

Sample Receiving Notes:

Rec'd 1 Vial MW-107 Broken in Cooler w/ 11/2/16

COC = MW-339S - 1 Vial = MW-339

14. Was there a need to contact Project Manager? ☒ Yes / No

a. Was there a need to contact the client? ☒ Yes / No

Who was contacted? Sophia Narkiewicz

Date: 11/03/16

Time: _____

By: CMT

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	79708	Yes	No	Yes	VOA Vial - HCl	HCl	
01	79709	Yes	No	Yes	VOA Vial - HCl	HCl	
01	79710	Yes	No	Yes	VOA Vial - HCl	HCl	
02	79705	Yes	No	Yes	VOA Vial - HCl	HCl	
02	79706	Yes	No	Yes	VOA Vial - HCl	HCl	
02	79707	Yes	No	Yes	VOA Vial - HCl	HCl	
03	79702	Yes	No	Yes	VOA Vial - HCl	HCl	
03	79703	Yes	No	Yes	VOA Vial - HCl	HCl	
03	79704	Yes	No	Yes	VOA Vial - HCl	HCl	
04	79699	Yes	No	Yes	VOA Vial - HCl	HCl	
04	79700	Yes	No	Yes	VOA Vial - HCl	HCl	
04	79701	Yes	No	Yes	VOA Vial - HCl	HCl	
05	79696	Yes	No	Yes	VOA Vial - HCl	HCl	
05	79697	Yes	No	Yes	VOA Vial - HCl	HCl	
06	79693	Yes	No	Yes	VOA Vial - HCl	HCl	
06	79694	Yes	No	Yes	VOA Vial - HCl	HCl	
06	79695	Yes	No	Yes	VOA Vial - HCl	HCl	
07	79690	Yes	No	Yes	VOA Vial - HCl	HCl	
07	79691	Yes	No	Yes	VOA Vial - HCl	HCl	
07	79692	Yes	No	Yes	VOA Vial - HCl	HCl	
08	79687	Yes	No	Yes	VOA Vial - HCl	HCl	
08	79688	Yes	No	Yes	VOA Vial - HCl	HCl	
08	79689	Yes	No	Yes	VOA Vial - HCl	HCl	
09	79684	Yes	No	Yes	VOA Vial - HCl	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/CMT

ESS Project ID: 1611052

Date Received: 11/2/2016

09	79685	Yes	No	Yes	VOA Vial - HCl	HCl
09	79686	Yes	No	Yes	VOA Vial - HCl	HCl
10	79681	Yes	No	Yes	VOA Vial - HCl	HCl
10	79682	Yes	No	Yes	VOA Vial - HCl	HCl
10	79683	Yes	No	Yes	VOA Vial - HCl	HCl
11	79678	Yes	No	Yes	VOA Vial - HCl	HCl
11	79679	Yes	No	Yes	VOA Vial - HCl	HCl
11	79680	Yes	No	Yes	VOA Vial - HCl	HCl
12	79675	Yes	No	Yes	VOA Vial - HCl	HCl
12	79676	Yes	No	Yes	VOA Vial - HCl	HCl
12	79677	Yes	No	Yes	VOA Vial - HCl	HCl
13	79672	Yes	No	Yes	VOA Vial - HCl	HCl
13	79673	Yes	No	Yes	VOA Vial - HCl	HCl
13	79674	Yes	No	Yes	VOA Vial - HCl	HCl
14	79669	Yes	No	Yes	VOA Vial - HCl	HCl
14	79670	Yes	No	Yes	VOA Vial - HCl	HCl
14	79671	Yes	No	Yes	VOA Vial - HCl	HCl
15	79666	Yes	No	Yes	VOA Vial - HCl	HCl
15	79667	Yes	No	Yes	VOA Vial - HCl	HCl
15	79668	Yes	No	Yes	VOA Vial - HCl	HCl
16	79663	Yes	No	Yes	VOA Vial - HCl	HCl
16	79664	Yes	No	Yes	VOA Vial - HCl	HCl
16	79665	Yes	No	Yes	VOA Vial - HCl	HCl
17	79660	Yes	No	Yes	VOA Vial - HCl	HCl
17	79661	Yes	No	Yes	VOA Vial - HCl	HCl
17	79662	Yes	No	Yes	VOA Vial - HCl	HCl
18	79657	Yes	No	Yes	VOA Vial - HCl	HCl
18	79658	Yes	No	Yes	VOA Vial - HCl	HCl
18	79659	Yes	No	Yes	VOA Vial - HCl	HCl
~~19~~	~~79654~~	~~Yes~~	~~No~~	~~Yes~~	~~VOA Vial - HCl~~	~~HCl~~
~~19~~	~~79655~~	~~Yes~~	~~No~~	~~Yes~~	~~VOA Vial - HCl~~	~~HCl~~
19	79656	Yes	No	Yes	VOA Vial - HCl	HCl

W 11/2/16

2nd Review

Are barcode labels on correct containers?

☒ Yes / No

Completed

By: *[Signature]*

Date & Time:

11/2/16 1537

Reviewed

By: *[Signature]*

Date & Time:

11/2/16 1550

Delivered

By: *[Signature]*

11/2/16 1550

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time Standard Other _____
 Regulatory State: MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: (please circle)
 MA-MCP Navy USACE CT DEP Other _____

Project # 42054 Project Name TIO ENFIELD
 Address 530 Broadway Zip 02909 PO # _____
 City Providence State RI Fax _____
 Contact Person Sophia Nariewicz email: Sophia.Nariewicz@providence.ri.us

ESS Lab ID	Date	Collection Time	Grab - G Composite - C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis
19	11/1/16	0800	G	GW	TRIO BLANK	2	1	V	40 mL	X
1		0850			MW-3105		3			
2		0910			MW-310D					
3		0930			MW-3345					
4		0900			MW-334D					
5		0930			MW-107					
6		0800			PD-11116					
7		1045			MW-316D					
8		1030			MW-6					
9		1050			MW-337					

Matrix S-Sol: SD-Solid D-Sludge W-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter
 Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Cooler Present ☒ Yes ☐ No Internal Use Only ☐ [] Pickup
 Seals Intact Yes ☒ No NA: _____
 Cooler Temperature: 5.3 11/2/16 11/2/16 [] Technician [Signature]
 Relinquished by: (Signature, Date & Time) [Signature] 11/2/16 1455
 Received by: (Signature, Date & Time) [Signature] 11/2/16 1455
 Relinquished by: (Signature, Date & Time) _____
 Received by: (Signature, Date & Time) _____

Comments: Navy D-ANES APPLY
 Relinquished by: (Signature, Date & Time) _____
 Received by: (Signature, Date & Time) _____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Absorbic Acid, 8-ZnAc2, 9-_____

Sampled by: SDN SJA

1 (White) Lab Copy
 2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody

* By signing MA-MCP, client acknowledges samples were

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time ☒ Standard Other

Regulatory State: MA ☒ CT NH NJ NY ME Other

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other

Project # 42654 Project Name TURKEY

Address 530 BROADWAY PO #

City PROVIDENCE State RI Zip 02909

Fax 401-421-4140 email sophia.nawicki@q2a.com

ESS Lab ID 10 Date 11/1 Collection Time 1230

Grab-G Composite-C 0 Matrix GW Sample ID MW 314S

Pres Code 2 # of Containers 3 Type of Container V

Vol of Container 40 mL

Analysis VOCs B2603

Electronic Deliverables ☒ Access ☒ PDF

Reporting Limits - RIDEM 6A

ESS Lab # 1611052

Container Type: P-Poly G-Glass AG-Ambor Glass S-Sterile V-AVOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Ascorbic Acid, 8-ZnAc2, 9-

Cooler Present ☒ Yes ☐ No

Seals Intact ☒ Yes ☐ No NA: 11/16

Cooler Temperature: 5.3 ± 0.5 11/16

Relinquished by: (Signature, Date & Time) [Signature] 11/2/16 1455

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