



**GROUNDWATER MONITORING REPORT -
2013
FORMER TIDEWATER FACILITY
AND MERRY STREET
PAWTUCKET, RHODE ISLAND**

PREPARED FOR:
RIDEM
Providence, Rhode Island

PREPARED BY:
GZA GeoEnvironmental, Inc.
Providence, Rhode Island

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Via E-Mail and U.S. Mail



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

Re: 2013 Groundwater Monitoring Report
642 Allens Avenue
Providence, Rhode Island

Dear Mr. Martella:

On behalf of the Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is pleased to present to the Rhode Island Department of Environmental Management (RIDEM) the attached *2013 Groundwater Monitoring Report*. This *Groundwater Monitoring Report* describes groundwater monitoring activities that were performed at the above-referenced Site during the 2011, 2012 and 2013 calendar year.

For the 2014 monitoring activities, groundwater elevation and NAPL thickness gauging was completed in January 2014, April 2014, July 2014 and October 2014. The annual groundwater sampling round for 2014 was completed in October 2014. Results of the 2014 groundwater monitoring events will be presented in a *Groundwater Monitoring Report* which is anticipated to be submitted to RIDEM during the first quarter of 2015.

We look forward to continue to work cooperatively with RIDEM to advance this Site to compliance with the applicable regulations. Should you have any questions or comments regarding the information presented herein, please do not hesitate to contact the undersigned or Michele Leone from National Grid at (781) 907-3651.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

A handwritten signature in blue ink, appearing to read "Margaret S. Kilpatrick".

Margaret S. Kilpatrick, P.E.
Senior Project Manager

A handwritten signature in blue ink, appearing to read "James J. Clark".

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Senior Principal

MSK/JJC:tja

Attachment: 2013 Groundwater Monitoring Report

cc: Michele Leone, National Grid

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1.00 INTRODUCTION



On behalf of our client, The Narragansett Electric Company, d/b/a National Grid (National Grid), GeoEnvironmental, Inc. (GZA) is pleased to provide this *Groundwater Monitoring Report* related to the former Tidewater facility located at the terminus of Tidewater and Merry Streets in Pawtucket, Rhode Island (“the Site”). This report serves to provide a description of field activities and present the laboratory data generated from the synoptic groundwater sampling round performed in August 2013. In addition, this report summarizes groundwater elevation and non-aqueous phase liquid (NAPL) gauging and surface water sheen observations during 2013.¹

The laboratory results were compared to applicable and available Method 1 (or Method 2 as appropriate) objectives as established in the Department’s Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). Portions of this report include information previously 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 the Department.

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

1.10 SITE DESCRIPTION

The Site is located at the terminus of Tidewater Street and Merry Street in the City of Pawtucket, Rhode Island. A *Locus Plan* is attached as 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 as an active switching station and electric substation. The Site is secured with a locked perimeter chain-link fence.

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 is owned by the City of Pawtucket. The Site has been subdivided into 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 This report provides and discusses the 2013 sheen observations, groundwater elevation and NAPL thickness gauging and groundwater monitoring analytical results. For reference, the attached tables and appendices included in this report also provide the sheen observations, groundwater elevation and NAPL thickness gauging and groundwater monitoring results for 2011 and 2012.

1.20 SITE BACKGROUND



MGP operations began in the 1880s and were substantially concluded in 1954, although peak shaving operations continued until the late 1960s. From the 1880s until 1954, the 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 the Department a January 2011 *Site Investigation Data Report* (SIDR) and a July 2011 *Remedial Alternative Evaluation Report* (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 thickness gauging and groundwater quality monitoring are anticipated to be part of the final remedy for this Site. The following sections describe sheen observations, groundwater elevation and NAPL thickness gauging and groundwater quality monitoring performed in 2013. As described further herein, the results of this 2013 monitoring were generally consistent with previous data and do not alter the information presented or recommendations made in the July 2011 RAE.

2.00 SHEEN OBSERVATIONS

The Site is visited on an at least a twice-monthly basis to record the presence of any sheens along the shoreline. The shoreline of the Site is approximately 2,280 feet long and largely manmade in nature. Between January 2013 and December 2013, 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 three general shoreline areas:

- an approximate 10 foot section of the FGPA near MW-326S and TB-12/MW-3;
- an approximate 10 foot section of the FPPA proximate to the Narragansett Bay Commission (NBC) Combined Sewer Outfall (CSO); and
- an approximate 300 foot section of the FPPA near the shoreline bulkhead proximate to MW-315S/D.

Sheens observed in the FGPA near MW-326S and TB-12/MW-3 are generally observed as bright to dull localized bands less than 2 feet in width observed between the Site shoreline and remnants of wooden sheet piling (associated with a former dock). Sheens observed in the FPPA proximate to the NBC CSO are generally observed as bright to dull localized spots less than 3 feet in diameter observed within the Site boundary or very close to the shoreline. Sheens observed in the FPPA proximate to shoreline bulkhead are very intermittently observed as localized dull bands less than 1 foot in width observed very close to the shoreline. These sheens have generally been observed at mid- or low-tide only. Given the limited occurrence and extent of observed sheens, it is difficult to distinguish between sheening resulting from existing outfalls and subsurface impacts. Sheens



observed during 2013 were generally consistent with previous observations as documented in the January 2011 SIDR and the July 2011 *Remedial Alternative Evaluation*.² There were no sheens observed proximate to MW-4 where the cap was installed³ or the SFA in 2013. Sheen observations are summarized in Table 1.

3.00 GROUNDWATER AND NAPL MONITORING PROGRAM

In addition to the shoreline sheen observations presented above, the monitoring program consists of gauging the monitoring well network for groundwater elevation and NAPL thickness and groundwater sampling of select monitoring wells. Groundwater elevation and NAPL thickness gauging of available monitoring wells was conducted on a quarterly basis in 2013 (January 2013, April 2013, August 2013⁴, and October 2013). Twenty seven (27) monitoring wells are included in the 2013 sampling round. All well locations are shown on the attached Figures 2A and 2B, *Exploration Location Plans*. These figures highlight the wells sampled in 2013.

Groundwater samples were analyzed for volatile organic compounds (VOCs) via EPA Method 8260B, total petroleum hydrocarbons (TPH) via EPA Method 8100M, polycyclic aromatic hydrocarbons (PAHs) via EPA Method 8260B, total cyanide and dissolved free cyanide via EPA Method 9014. Figures 2A and 2B, *Exploration Location Plans*, indicate the wells sampled in 2013: four in the NFA (MW-5, MW-7, MW-310S and MW-310D), ten 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 in the FPPA (M&E MW-2, MW-6, MW-109, MW-314S, MW-314D, MW-316S, MW-316D, and MW-337) and five in the SFA (MW-107, MW-318S, MW-318D, MW-334S and MW-334D). These well locations were chosen to provide a representative evaluation of overall Site groundwater quality.

3.10 OBSERVATIONS OF NAPL

Between January 2013 and December 2013, GZA performed quarterly NAPL thickness monitoring and recovery evaluations. These field activities were performed to assess the presence and relative mobility and recoverability of NAPL.

A comprehensive gauging round of the existing groundwater monitoring well network was completed during the quarterly monitoring events. Comprehensive groundwater elevation and NAPL thickness gauging data are included as Tables 2A and 2B, respectively, for the period from January 2011 through October 2013. A summary of wells exhibiting light Non-Aqueous Phase Liquid (LNAPL) and dense non-aqueous phase liquids (DNAPL) thicknesses are presented in Tables 2C and 2D, respectively. Observations of LNAPL and DNAPL thicknesses are generally limited to the FGPA and the South Fill Area which is consistent with those previously observed and documented in the January 2011 SIDR and the July 2011 *Remedial Alternative Evaluation* with a few minor deviations, as described below.

² Sheen observations during the January 2011 to December 2012 time period are provided for reference and are summarized in Table 1.

³ 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*.

⁴ Due to scheduling constraints, the quarterly groundwater elevation and NAPL thickness gauging event and the annual groundwater sampling event took place in early August 2013 instead of July 2013.



During the monitoring events, in certain wells where measurable levels of NAPL were present, an effort was made to recover NAPL and monitor its relative rate of return (if any). LNAPL and DNAPL recovery was performed using a peristaltic pump with dedicated tubing positioned directly below the top of the NAPL surface. The LNAPL and/or DNAPL were extracted from the well until groundwater was observed within the tubing, at which point the pump was deactivated. The recovery of the LNAPL and/or DNAPL was then monitored with an oil/water interface probe. Tables 3A and 3B summarize the results of the LNAPL and DNAPL recovery efforts, respectively. During 2013 GZA removed approximately 9 gallons of NAPL/groundwater. As described further in this section, NAPL recovery was not practical in certain wells due to the viscosity of the material. The NAPL/groundwater was containerized in a drum and disposed off-Site. Copies of the disposal manifests are included in Appendix B.

Figures 4A and 4B, *Groundwater Analytical Data* depict well locations where either measurable LNAPL or DNAPL were observed during the 2013 groundwater monitoring activities.

In addition to the NAPL thicknesses shown in Tables 2C and 2D, during the 2013 annual groundwater sampling event, evidence of sheen was observed on purge water from monitoring wells MW-312S, MW-326S, MW-109, MW-314S, MW-337, and MW-334S. Purge waters generated from wells MW-326S, MW-314S, and MW-337 were observed to exhibit a petroleum-like odor and purge waters from MW-310S, MW-310D, MW-201, MW-208, MW-312S, MW-312D, MW-326D, MW-333D, MW-339S, MW-339D, MW-109, and MW-334S were observed to exhibit a coal-tar like odor. Refer to groundwater sampling logs in Appendix C for observations related to sheens and odors during the 2013 sampling event.

Notable NAPL observations in 2013 are as follows:

- **LNAPL:** Between January 2013 and December 2013, measurable levels of LNAPL (defined as equal to or greater than 0.01 feet) were detected in four (4) monitoring wells: three (3) in the FGPA and one (1) in the FPPA. As presented in Tables 2C and 3A, LNAPL thicknesses ranged varied in each well – in the FGPA: MW-210 {trace to 1.44 feet}, MW-3 {non-detect to 0.05 feet}, and MW-312S {0.04 to 0.93 feet}; and in the FPPA: M&E MW-5 {0.01 to 0.33 feet}. There were no new detections 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, the well is located in the vicinity of the former service USTs (M&E MW-5). It should be noted that monitoring wells MW-313S, MW-326S, and MW-103, where measurable LNAPL was detected during both the 2011 SIDR and both the 2011 and 2012 monitoring events, did not show evidence of LNAPL during 2013. It should also be noted that monitoring well MW-314S, where measureable LNAPL was detected during the 2011 SIDR, did not show evidence of LNAPL during 2011, 2012 or 2013.

During the monthly monitoring events in 2013, LNAPL recovery evaluations were attempted at three (3) wells: M&E MW-5, MW-210 and MW-312S. These wells are located on the FGPA and FPPA portions of the Site. As expected, LNAPL appears to recover relatively slowly. In addition, observed LNAPL thicknesses appear to be highly dependent upon the tidal cycle at the time of gauging. As presented in Table 3A, the rate of LNAPL recovery appears to be on the order of 1 to 2 months (timeframe over which recorded thickness appears to return to original measurement).

In general, LNAPL thicknesses and recoverability are consistent with historic observations, as presented in the January 2011 SIDR and July 2011 RAE 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 0.05 feet since October 2011, suggesting that only localized LNAPL may have collected in these wells. These variations may be attributable to the observed tidal stage at the time of measurement (*i.e.*, LNAPL thicknesses measured at low tide were typically greater).

- **DNAPL:** Between January 2013 and December 2013, measurable levels of DNAPL (defined as equal to or greater than 0.01 feet) were detected in five (5) monitoring wells: three (3) in the FGPA and two (2) in the SFA. As presented in Tables 2D and 3B, DNAPL thicknesses varied in each well - in the FGPA: MW-4 {non-detect to 0.7 feet}, MW-303 {2.29 to 5.5 feet} and MW-341 {1.4 to 2.57 feet}; and in the SFA: MW-320S {trace amounts to 0.18 feet} and MW-320D {7.85 to 8.45 feet}. Consistent with the 2010 Site investigations presented in the January 2011 SIDR, DNAPL was detected in the FGPA in wells in the area of the former MGP processes, particularly those related to separation and tar processes (*i.e.*, clarification tanks, separators, boiling tanks) and in the SFA. In addition, measureable DNAPL was detected consistently between January 2011 and October 2013 at monitoring well MW-341, which is located downgradient of the former Gasholders No. 7 and 8. DNAPL was detected in trace amounts in MW-339D during 2013. It should be noted that monitoring well MW-103, which was the only well on the FPPA where measureable DNAPL was detected during the 2011 SIDR, did not show evidence of DNAPL during the 2011, 2012 or 2013 monitoring events.

Based on the measurable quantities, physical characteristics of the DNAPL, and results of historic DNAPL recovery attempts, recovery evaluations were attempted at two (2) well locations only in 2013 (MW-303 and MW-341 installed on the FGPA portion of the Site). During the 2013 recovery rounds, 1 to 1.5 gallon of DNAPL was recovered each quarter. MW-303 was more difficult to recover due to the viscosity of DNAPL.

In general, DNAPL thicknesses and recoverability rates observed during 2013 are consistent with historic observations made in the January 2011 SIDR and July 2011 *Remedial Alternative Evaluation*. DNAPL has been observed between 2011 and 2013 in MW-341 (thicknesses ranging from 0.95 to 2.57 feet), MW-320D (thicknesses ranging from 7.85 to 8.4 feet), and MW-303 (thicknesses ranging from trace amounts to 5.55 feet). Other measurable thicknesses of DNAPL (MW-4, MW-1 and MW-320S) were observed intermittently only during this period. Similar to observations of LNAPL, DNAPL is observed in only certain wells suggesting the presence of localized pockets and not a contiguous layer. Based on the results of attempted recovery and the viscous nature of the materials, the 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.

3.20 GROUNDWATER FLOW DIRECTION

Between April 2009 and October 2013, GZA recorded depth to groundwater readings at Site monitoring wells on a quarterly basis. 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 2011, 2012 and 2013. The groundwater elevations recorded during the August 2013 gauging round were



used to construct the *Groundwater Elevation Contour Plan* presented as Figure 3. Groundwater elevations during the 2013 gauging events are generally consistent with those recorded during previous monitoring events. As expected, review of groundwater elevations recorded during the 2013 reporting period indicated that the groundwater beneath the Site flows from west to east towards the Seekonk River. In general, the groundwater table was encountered between elevation 1 and 11 feet, which is predominantly within the fill unit.

3.30 GROUNDWATER SAMPLING TECHNIQUES

During the 2013 annual sampling event, groundwater samples were collected from twenty-six (26) of the twenty-seven (27) wells included in the program⁵. Groundwater samples were collected in general accordance with EPA's January 19, 2010 *Low Stress (low flow) Purging and Sampling Procedure* (Low Flow SOP). 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 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. This tubing has the potential to become brittle when exposed to UV light (sunlight) and where necessary this tubing was replaced with new dedicated tubing as indicated on the field sampling logs (Appendix C). Pharmaceutical grade 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. If NAPL was noted in the monitoring well prior to sampling, new tubing was installed in the monitoring well. In order to limit the potential for LNAPL to enter the sampling tubing during the collection of the sample, 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 C. 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 mL glass vials with septa caps for VOC analysis via EPA Method 8260B, 1000 mL amber glass bottles for PAHs analysis via EPA Method 8270C, hydrochloric acid-preserved 1000 mL amber glass bottles for TPH analysis via EPA Method 8100M and sodium hydroxide-preserved 250 mL plastic bottles for total cyanide analysis via EPA Method 9014. A sample was also field-filtered and placed in a laboratory-provided, sodium hydroxide-preserved 250 ml plastic bottle for dissolved cyanide analysis via EPA Method 9014. Samples were then packed in an ice chest and transported under chain-of-custody protocol to ESS Laboratory located in Cranston, Rhode Island.

⁵ MW-5 is included in the original sampling program; however, due to low water levels and insufficient recovery, there was not enough water present within the well to collect a sample during the August 2013 monitoring event. MW-316S had very limited water present; therefore only VOC samples were able to be collected.



3.40 INVESTIGATION-DERIVED WASTE MANAGEMENT

NAPL/groundwater and all purgewater that was recovered during 2013 was containerized in drums and disposed of off-Site. These fluids were containerized in labeled 55-gallon steel drums. Once the sampling event was complete, the drums were removed from the Site by Clean Harbors Environmental Services, Inc. (CHES) of East Providence, Rhode Island for proper off-Site disposal. Copies of the disposal manifests are included in Appendix B.

3.50 QA/QC SAMPLING AND ANALYSIS

During the 2013 sampling round, twenty-six (26) groundwater samples, two (2) blind duplicate samples and three (3) trip blanks were 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 blanks collected on August 6, 2013 and August 7, 2013 were below the laboratory reporting limit for all 75 targeted compounds. Naphthalene was detected at a concentration of 0.6 µg/L in the trip blank collected on August 8, 2013 (TB-080813); the concentration was flagged because the detection was below the method quantitation limit. Two samples (MW-7 and MW-208) were submitted with TB-080813 which were both non-detect for naphthalene, therefore no action is warranted. No other compounds were detected in the trip blank.

Naphthalene was detected in the laboratory method blank for EPA Method 8270C at a concentration of 0.4 µg/L for the samples collected on August 7, 2013. The effect of laboratory method blank contamination on sample results can be evaluated using the EPA's 5 Times Rule. This rule states that the contaminant level in an associated sample must exceed 5 times the level in the blank to be definitively present. The levels detected in the method blank were low enough that this rule would eliminate three of the naphthalene detects (MW-333S, MW-6, and MW-337) in this sample set. However, this rule cannot be used to eliminate detections of analytes that might be present based on Site knowledge. Naphthalene has been historically detected in each of these monitoring wells; therefore the results are not modified, but are flagged to indicate that naphthalene was detected in the method blank. These results are shown in Table 4B.

Two duplicate sample sets (Set #1 – MW-314D and BD#1 and Set#2 – MW-318S and BD#2) were also submitted for VOCs, PAHs, TPH, total cyanide and dissolved cyanide analysis to evaluate sample reproducibility. The relative percent difference (RPD) was calculated for each compound. Elevated RPDs (more than 40% difference) were noted for TPH and dissolved cyanide in one sample set (MW-314D and BD#1). Given the nature of the observed historical Site impacts, the variability in the TPH and dissolved cyanide results in these samples does not significantly affect data usability. These results are shown in Tables 4C (VOCs) and 4D (TPH, PAHs, total and dissolved cyanide). Copies of the original laboratory data, laboratory quality assurance/quality control (QA/QC), methods, and chain-of-custody forms are provided for reference in Appendix D.

3.60 GROUNDWATER ANALYTICAL RESULTS

Groundwater quality at the Site is generally characterized by few isolated exceedances of the GB Groundwater Objectives for benzene, ethylbenzene and naphthalene, primarily in localized areas of the Site where former MGP features were located in the FGPA (MW-312D, MW-326S and MW-333D), downgradient of former Nos. 7 and 8 gasholders in the FGPA (MW-339D) and in the NFA (MW-310D). No exceedances have been observed in large areas of the Site, including the FPPA,



the western portion of the FGPA and the western portion of the SFA. The GB Groundwater Objective for ethylbenzene has been exceeded sporadically historically, but was not exceeded during 2013. Figures 4A and 4B, *Analytical Groundwater Data*, present the total VOC concentrations detected in groundwater samples during the August 2013 sampling round and wells with GB groundwater exceedances.

Analytical data from the 2013 sampling event is summarized in Tables 4A (VOCs) and 4B (TPH, PAHs, total and dissolved cyanide). Historic analytical summaries by monitoring well dating back to 1996 are presented in Tables 5A through 5AA. These tables include comparisons to Method 1 (or Method 2 as appropriate) GB Groundwater Objectives and Upper Concentration Limits (UCL). In general, the analytical results reported during the 2013 event were consistent with levels detected in previous sampling results. A summary of the 2013 data is presented below.

Volatile Organic Compounds

As indicated in Table 4A, VOCs were detected in nineteen of the groundwater samples analyzed (19/26) in 2013. The total VOC concentrations detected during the 2013 monitoring event ranged from 0.0004 mg/L to 9.561 mg/L. Five wells (5/26) exceeded the GB Groundwater Objective for one or more VOCs. Four (4/26 as a VOC) samples exceeded the Method 2 GB Groundwater Objective for naphthalene and four (4/26) samples exceeded for benzene.

The presence of these compounds in groundwater samples is typical for former MGP sites and consistent with historical sampling results for the Tidewater Site. As noted above, the GB Groundwater Objective for ethylbenzene has historically been sporadically, but was not exceeded during 2013. None of the VOCs detected in 2013 exceeded UCLs. The following sections discuss the dissolved-phased VOC analytical results for the 2013 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 2013 monitoring event and analyzed for VOCs. The groundwater sample from MW-310D had ten VOC detections, with two exceedances of the GB Groundwater Objectives, benzene and naphthalene. Benzene was detected in MW-310D at a concentration of 0.678 mg/L, exceeding the GB Groundwater Objective of 0.14 mg/L. Naphthalene was detected in MW-310D at a concentration of 6.6 mg/L, exceeding the Method 2 derived GB Groundwater Objective of 2.67 mg/L. There were no other exceedances of GB Groundwater Objectives. Two VOC compounds were detected in MW-7 and four VOC compounds were detected in MW-310S. Benzene was detected in MW-310S at a concentration of 0.0035 mg/L, well below the GB Groundwater Objective. Benzene was not detected in MW-7. Naphthalene was not detected in either MW-7 or MW-310S.

The concentrations of both benzene and naphthalene exceeded the GB Groundwater Objectives in MW-310D (refer to Table 5D) during the previous sampling rounds (June 2010, July 2011 and July 2012), consistent with the 2013 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 2013 monitoring event and analyzed for VOCs. Only one sample (1/10; MW-333S) was non-detect for VOCs during the 2013 event. Exceedances of the GB Groundwater Objectives for VOCs were detected in MW-312D, MW-326S, MW-333D, and MW-339D. Benzene was detected in eight samples (8/10) at concentrations ranging from 0.0006 mg/L to 3.56 mg/L, with three samples (3/10) exceeding the GB Groundwater Objective (MW-312D, 3.56 mg/L; MW-326S, 0.444 mg/L; and MW-333D, 2.67 mg/L). Naphthalene was detected in eight samples (8/10) at concentrations ranging from 0.0516 mg/L to 4.3 mg/L, with three samples (3/10) exceeding the GB Groundwater Objective (MW-312D, 4.3 mg/L; MW-333D, 3.96 mg/L; and MW-339D, 3.91 mg/L).

Dissolved phase VOC results for the FGPA were consistent with historic groundwater results, with exceedances of the GB Groundwater Objectives limited to naphthalene and benzene during the 2013 sampling event. The entirety of the above identified groundwater exceedances are located in the southeastern corner of the FGPA in the vicinity of the former processing houses for the MGP (*i.e.*, MW-312D, MW-326D, MW-333D), with one exception. Monitoring well MW-339D, which exhibited exceedances of the GB Groundwater Objectives for naphthalene, is located east of the location of the former Gasholders No. 7 and 8.

FPPA (A.P. 65B Lot 645)

Eight (8) groundwater samples were collected in this area during the 2013 monitoring event for VOC analysis (M&E MW-2, MW-6, MW-109, MW-314S, MW-314D, MW-316D, MW-316S and MW-337). Four samples (4/8; M&E MW-2, MW-316D, MW-316S and MW-337) were non-detect for VOCs during the 2013 event. For the targeted VOCs within the eight groundwater samples collected, benzene was detected in two samples (MW-6 – 0.0045 mg/L and MW-109 – 0.115 mg/L) and naphthalene was detected in two samples (MW-6 – 0.0263 mg/L and MW-109 – 0.163 mg/L).

Consistent with historic results, there were no exceedances of the GB Groundwater Objectives in the FGPA.

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 2013 sampling event (MW-107, MW-318S, MW-318D, MW-334S, MW-334D). Two samples (2/5; MW-107 and MW-318D) were non-detect for VOCs during the 2013 event. For the targeted VOCs within the five groundwater samples collected, benzene was detected in three samples (MW-318S – 0.0733 mg/L, MW-334S – 0.002 mg/L, and MW-334D – 0.0015 mg/L) and naphthalene was detected in three samples (MW-318S – 0.988 mg/L, MW-334S – 0.0344 mg/L and MW-334D – 0.132 mg/L).

Similar to the FPPA and consistent with historic data, no VOCs were detected in excess of the GB Groundwater Objectives in the SFA during the 2013 sampling event.



Cyanide

As indicated in Table 4B, total cyanide was detected in every groundwater sample analyzed (25/25) in 2013. The total cyanide concentrations detected ranged between 0.0125 mg/L to 4.05 mg/L. Consistent with past results, total cyanide was detected at greater than 1 mg/L in MW-201 (3.68 mg/L) and MW-333D (4.05 mg/L) which are both located in the FGPA. Dissolved and total cyanide results were relatively consistent. The dissolved cyanide concentrations detected ranged between 0.0119 mg/L to 3.95 mg/L. The total and dissolved cyanide levels detected in 2013 are consistent with historic detection at the Site and are typical of former MGP sites. The predominant forms of cyanide compounds at former MGP sites are typically iron-cyanide solids which are detected as part of the total cyanide analysis used at the Tidewater Site. Cyanide can be present in several forms, including free cyanide (HCN, or CN-) and metal-cyanide complexes, such as the iron-cyanides typically seen at former MGP sites. With respect to potential risk to human health and aquatic life, cyanide toxicity is mainly associated with free cyanide. Metal-cyanide complexes, especially the strong complexes with iron seen at MGP sites, are essentially non-toxic. Since there are no current potable use of groundwater at this Site, the potential for human health risk associated with impacts to groundwater are limited.

Poly-Aromatic Hydrocarbons (PAHs)

As indicated in Table 4B, PAHs were detected in twenty two groundwater samples (22/25). Of the groundwater samples submitted for PAH analysis; two samples (MW-310D – 4.57 mg/L and MW-312D – 2.98 mg/L) exceeded the Method 2 derived GB Groundwater Objective (2.67 mg/L) for naphthalene. MW-310 is located in the SFA and MW-312 is located in the FGPA. PAH results in 2013 were consistent with historic monitoring events. The most significant PAHs concentrations were detected in the following wells: MW-310D (located along the riverfront in the NFA, within the footprint of the historic cove); MW-312S, MW-312D, MW-333D (located in the FGPA in the southeastern portion of the Site proximate to the historic MGP features); and MW-339D (located east of the former Gasholders No. 7 and 8).

Total Petroleum Hydrocarbons

As indicated in Table 4B, TPH was detected in eighteen groundwater samples (18/25) at concentrations ranging from 0.33 mg/L to 13.5 mg/L. The wells where elevated groundwater TPH concentrations (greater than 5 mg/L) were detected were as follows: MW-310D (located along the riverfront in the NFA, within the footprint of the historic cove); MW-312S, MW-312D, MW-326S, MW-333D (located in the FGPA in the southeastern portion of the Site proximate to the historic MGP features); and MW-339D (located east of the former Gasholders No. 7 and 8). The highest dissolved phase petroleum hydrocarbon impacts (greater than 10 mg/L) were detected in MW-310D in the NFA and MW-326S in the FGPA at a concentration of 13.5 mg/L and 11.1 mg/L, respectively.

4.00 CONCLUSIONS



As part of the annual groundwater monitoring for 2013, twenty seven (27) monitoring wells were sampled in August 2013⁶, all accessible wells were gauged for groundwater elevation and the presence of NAPL quarterly, and inspections for sheen 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 2013 were consistent with historic results.

- Sheens were observed in areas consistent with historic observations, primarily near the bulkhead area in the central portion of the shoreline in the FPPA and FGPA. More significant sheens have generally been observed at mid- or low-tide consisted of bright to dull spots and bands. Sheens observed at high tide were generally much less significant and observed very intermittently.
- Nine (9) monitoring wells exhibited the presence of measureable NAPL in 2013, with four (4/9) monitoring wells exhibiting LNAPL thicknesses up to 1.44 feet and five (5/9) monitoring wells exhibiting DNAPL thicknesses up to 8.45 feet. Approximately 9 gallons of NAPL/groundwater was recovered from Site monitoring wells and was containerized and disposed of off-Site in 2013. Observations of both LNAPL and DNAPL continue to be localized and do not indicated 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 five (5) wells sampled during the 2013 monitoring round. Compounds detected in excess of the GB Groundwater Objectives were naphthalene and benzene. The presence of these compounds in groundwater samples is typical for former MGP sites. The most significant dissolved phase groundwater impacts were generally detected in the FGPA and SFA.

The annual monitoring performed in 2014 will be consistent with the 2013 program. It is anticipated that this monitoring program will continue until the Site remedy has been implemented at which time the program will be reevaluated in coordination with RIDEM.

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⁶ Only 25 samples were analyzed from the 27 monitoring wells for total/dissolved cyanide, TPH and PAHs and only 26 samples were analyzed for VOCs. For the 2013 monitoring event, MW-5 had low water levels and there was not enough water present within the well to collect a sample and MW-316S has had very limited water present and only VOC samples were able to be collected.

TABLES

TABLE 1
SUMMARY OF SHEEN OBSERVATIONS

File No. 05.00043654.00

1/9/2014

Former Tidewater Facility
Pawtucket, Rhode Island

Date	Time	Approximate Tidal Stage	Sheen Observation Location	Sheen Characteristics
1/24/2011	No sheens observed at high tide.			
1/28/2011	No sheens observed at high tide.			
2/8/2011	No sheens observed at high tide.			
2/17/2011	1130	Low	Adjacent to MW-326 S/D	Long, dull bands
3/4/2011	940	Mid	Adjacent to MW-326 S/D	Long dull bands
3/4/2011	1030	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen
3/17/2011	1000	Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen
3/29/2011	1500	Mid	Along entirety of the FPPA.	Heavy long dull sheen
3/29/2011	1500	Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen
4/14/2011	1000	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen
4/26/2011	1000	Low	Shoreline between MW-311 and MW-203	Trace sheen
4/26/2011	1300	Low to Mid	54" CSO pipe outfall washout adjacent to MW-103	Sheen
5/4/2011	1245	Low to Mid	54" CSO pipe outfall washout adjacent to MW-103	Trace sheen spots
5/4/2011	1345	Low	From MW-4 to bend in the shoreline (adjacent to MW-326)	Large bright bands fading to a dull sheen
5/4/2011	1355	Low	Bulkhead area in FPPA	Large bright bands fading to a dull sheen
5/4/2011	1358	Low	Along entirety of the FPPA.	Large bands of sheen dull
5/4/2011	1402	Low	54" CSO pipe outfall washout adjacent to MW-103	Large bright bands fading to a dull sheen
5/5/2011	1346	Low to Mid	Adjacent to MW-326 S/D	Sheen
5/5/2011	1415	Low	From MW-4 to bend in the shoreline (adjacent to MW-326)	Large bright bands fading to a dull sheen
5/5/2011	1420	Low	Bulkhead area in FPPA	Sheen
5/5/2011	1425	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen bands
5/5/2011	1450	Low	From bulkhead to bend in the shoreline (adjacent to MW-326) FGPA and FPPA	Heavy large bright bands fading to a dull sheen
5/5/2011	1452	Low	54" CSO pipe outfall washout adjacent to MW-103	Heavy large bright bands fading to a dull sheen to the north and south
6/3/2011	1457	Low	Bulkhead Area in FPPA	Faint dull bands of sheen
6/3/2011	1459	Low	54" CSO pipe outfall washout adjacent to MW-103	Trace sheen spots
6/17/2011	1045	High to Mid	54" CSO pipe outfall washout adjacent to MW-103	Trace sheen spots
6/29/2011	1115	Low	Adjacent to MW-326 S/D	Faint dull bands
6/29/2011	1138	Low	Adjacent to MW-326 S/D	Heavy bright bands
6/29/2011	1142	Low	Bulkhead Area in FPPA	Slight Sheen
6/29/2011	1146	Low	54" CSO pipe outfall washout adjacent to MW-103	Sheen spots
6/29/2011	1210	Low	Adjacent to MW-326 S/D	Faint dull bands
6/29/2011	1220	Low	54" CSO pipe outfall washout adjacent to MW-103	Faint dull bands
7/5/2011	No sheens observed at mid to high tide.			
7/28/2011	1415	Low	Adjacent to MW-326 S/D	Slight Sheen
8/22/2011	No sheens observed at mid to high tide.			
8/25/2011	No sheens observed at mid to high tide.			
9/29/2011	No sheens observed at mid to high tide.			
10/18/2011	No sheens observed at mid to high tide.			
10/20/2011	845	Low	Bulkhead area in FPPA	Long dull bands
10/20/2011	850	Low	Along entirety of the FPPA.	Long dull bands
10/20/2011	900	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen bands
11/3/2011	1315	Mid	Adjacent to MW-326 S/D	Slight sheen spots
11/3/2011	1400	Mid to High	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen spots
11/8/2011	948	Mid	Adjacent to MW-326 S/D	Slight sheen spots
11/30/2011	No sheens observed at high tide.			
12/2/2011	No sheens observed at mid to high tide.			
12/22/2011	No sheens observed at mid to high tide.			

TABLE 1
SUMMARY OF SHEEN OBSERVATIONS

File No. 05.00043654.00
1/9/2014

Former Tidewater Facility
Pawtucket, Rhode Island

Date	Time	Approximate Tidal Stage	Sheen Observation Location	Sheen Characteristics
1/5/2012	No sheens observed at mid tide.			
1/10/2012	830	High	Adjacent to MW-326 S/D	Slight sheen spots
1/10/2012	845	High	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen spots
1/19/2012	1200	Mid	Along entirety of the FPPA.	Large dull bands
1/20/2012	1030	Low	Adjacent to MW-326 S/D	Large dull bands
2/1/2012	735	Low	Adjacent to MW-326 S/D	Slight sheen bands
2/1/2012	745	Low	Bulkhead area in FPPA	Slight sheen bands
2/13/2012	945	Low to Mid	Adjacent to MW-326 S/D	Slight sheen spots and bands
2/13/2012	1000	Low to Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight sheen bands
3/2/2012	800	Low	Adjacent to MW-326 S/D	Very slight dull sheen bands
3/19/2012	1530	Low	Adjacent to MW-326 S/D	Slight dull bands and spots
3/19/2012	1540	Low	54" CSO pipe outfall washout adjacent to MW-103	Moderate dull bands and spots
4/4/2012	1050	Low to Mid	Adjacent to MW-326 S/D	Slight dull sheen spots
4/18/2012	1230	Low	Along entirety of the FPPA.	Minor dull bands
5/2/2012	935	Low	Adjacent to MW-326 S/D	Minor dull spots
5/2/2012	940	Low	Bulkhead area in FPPA	Minor dull bands
5/2/2012	940	Low	Along entirety of the FPPA.	Very minor bands
5/2/2012	940	Low	54" CSO pipe outfall washout adjacent to MW-103	Heavy bright bands
5/7/2012	No sheens observed at high tide.			
5/17/2012	955	Mid	54" CSO pipe outfall washout adjacent to MW-103	Minor dull sheen spots and bands
5/24/2012	No sheens observed at mid to low tide.			
6/5/2012	No sheens observed at high tide.			
6/26/2012	No sheens observed at high tide.			
7/10/2012	745	Low	Bulkhead area in FPPA	Slight bands of sheen
7/10/2012	800	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight to moderate dull sheen spots
7/26/2012	No sheens observed at mid tide.			
8/10/2012	9:40	Low to Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight bright bands of sheen
8/10/2012	855	Low	Adjacent to MW-326 S/D	Slight bright bands of sheen
8/14/2012	10:00	High	Shoreline directly west of the South Washout Area	Minor bright bands of sheen. The sheen was determined to be biological in nature.
8/21/2012	No sheens observed at mid to high tide.			
8/30/2012	No sheens observed at mid to high tide.			
9/14/2012	12:15	Low	Adjacent to MW-326 S/D	Moderate dull bands
9/14/2012	12:45	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight bright spots of sheen
9/25/2012	10:55	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight dull spot of sheen
10/12/2012	8:10	Mid	Adjacent to MW-326 S/D	Slight dull spot of sheen
10/12/2012	9:00	Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight dull bands of sheen
10/23/2012	10:30	Low	54" CSO pipe outfall washout adjacent to MW-103	Moderate bright sheen spots
10/23/2012	10:40	Low	Bulkhead area in FPPA	Slight dull bands of sheen
10/26/2012	No sheens observed at mid to high tide.			
10/31/2012	13:45	Mid to Low	Adjacent to MW-326 S/D	Slight dull bands of sheen
11/5/2012	No sheens observed at mid tide.			
11/26/2012	13:30	Low	Adjacent to MW-326 S/D	Moderate dull bands of sheen
12/10/2012	No sheens observed at mid to high tide.			
12/28/2012	No sheens observed at mid tide.			

TABLE 1
SUMMARY OF SHEEN OBSERVATIONS

File No. 05.00043654.00
1/9/2014

Former Tidewater Facility
Pawtucket, Rhode Island

Date	Time	Approximate Tidal Stage	Sheen Observation Location	Sheen Characteristics
1/17/2013	No sheens observed at high tide.			
1/28/2013	No sheens observed at mid tide.			
2/5/2013	8:55	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight dull bands of sheen
2/27/2013	No sheens observed at high tide.			
3/5/2013	7:50	Low	54" CSO pipe outfall washout adjacent to MW-103	Moderate bright to dull bands and spots of sheen
3/5/2013	7:55	Low	Bulkhead area in FPPA	Slight dull bands
3/5/2013	8:05	Low	Adjacent to MW-326 S/D	Slight bright spots and bands of sheen
3/18/2013	No sheens observed at high tide.			
3/20/2013	No sheens observed at low tide.			
4/1/2013	12:20	High	54" CSO pipe outfall washout adjacent to MW-103	Dull to bright bands of sheen
4/26/2013	13:30	Low	Adjacent to MW-326 S/D	Dull spots and bands of sheen
5/10/2013	11:20	Mid	54" CSO pipe outfall washout adjacent to MW-103	Bright to dull spots and bands of sheen
5/22/2013	10:45	Low	Adjacent to MW-326 S/D	Moderate dull bands of sheen
5/22/2013	11:15	Low	54" CSO pipe outfall washout adjacent to MW-103	Heavy bright spots and bands of sheen
5/22/2013	11:15	Low	Bulkhead area in FPPA	Dull bands of sheen
5/28/2013	17:00	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight dull sheen spots
5/30/2013	No sheens observed at high to mid tide.			
6/5/2013	No sheens observed at mid to low tide.			
6/19/2013	No sheens observed at mid tide.			
6/28/2013	No sheens observed at mid tide.			
7/3/2013	No sheen noted at mid tide.			
7/9/2013	14:35	Low	Adjacent to MW-326 S/D	Bright bands of sheen
7/9/2013	15:15	Low	54" CSO pipe outfall washout adjacent to MW-103	Bright heavy bands of sheen
8/1/2013	No sheens observed at high tide.			
8/6/2013	8:00	High	54" CSO pipe outfall washout adjacent to MW-103	Slight bright to dull bands of sheen
8/27/2013	10:25	Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight bright bands of sheen
8/27/2013	10:30	Mid	Bulkhead area in FPPA	Very slight dull sheen bands
9/4/2013	No sheens observed at high tide.			
9/11/2013	7:55	Low to Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight bright and dull bands of sheen
9/11/2013	8:00	Low to Mid	Bulkhead area in FPPA	Slight dull spots of sheen
9/11/2013	8:20	Low to Mid	Adjacent to MW-326 S/D	Slight dull spots of sheen
9/18/2013	No sheens observed at high tide.			
9/25/2013	No sheens observed at high tide.			
10/2/2013	11:30	Low	Adjacent to MW-326 S/D	Moderate bright bands of sheen
10/2/2013	11:35	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight bright and dull bands of sheen
10/2/2013	11:40	Low	Bulkhead area in FPPA	Slight bands of sheen
10/11/2013	No sheens were observed at low to mid tide.			
10/18/2013	14:15	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight bands of sheen
10/29/2013	14:05	Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight bands of sheen
11/11/2013	9:15	Low	Adjacent to MW-326 S/D	Slight bands of sheen
11/11/2013	9:30	Low	54" CSO pipe outfall washout adjacent to MW-103	Slight bands of dull sheen
11/11/2013	9:30	Low	Bulkhead area in FPPA	Slight bands of dull sheen
11/25/2013	No sheens observed at high tide.			
12/11/2013	10:30	Mid	54" CSO pipe outfall washout adjacent to MW-103	Slight dull sheen spots
12/11/2013	11:03	Mid	Adjacent to MW-326 S/D	Slight bright to dull sheen spots
12/18/2013	14:05	Low	54" CSO pipe outfall washout adjacent to MW-103	Moderate bright to dull bands of sheen
12/31/2013	No sheens observed at high tide.			

Notes:

- SFA refers to the South Fill Area.
- FPPA refers to the Former Power Plant Area.
- FGPA refers to the Former Gas Plant Area.
- NFA refers to the North Fill Area.
- This table shows observations that were made along the Site shoreline. Observations were made at least twice a month.
- This table shows observations that were made between 2011 and 2013. The January 2011 SIDR presents sheen observations made during Site Investigation activities between 2009 and 2010.

TABLE 2A
SUMMARY OF GROUNDWATER MEASUREMENTS

Former Tidewater Facility
Pawtucket, Rhode Island

File No. 05.0043654.00
1/9/2014

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 2011 Groundwater Gauging Information						February 2011 Groundwater Gauging Information						March 2011 Groundwater Gauging Information						April 2011 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)	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	11.60	Dry	NP	NP	Dry													10.98	11.6	21.25	NP	NP	21.25
NFA	MW-7	27.45	31.98	NP	NP	20.02	27.45	11.96	NP	NP	11.96													17.73	27.4	14.25	NP	NP	14.25
NFA	MW-204	16.77	9.47	NP	NP	6.67	16.77	2.80	NP	NP	2.80													8.79	16.75	0.68	NP	NP	0.68
NFA	MW-205	15.00	12.20	NP	NP	1.73	15.00	10.47	NP	NP	10.47													1.2	15	11.00	NP	NP	11.00
NFA	MW-206	28.77	37.22	NP	NP	26.62	28.77	10.60	NP	NP	10.60													25.43	28.7	11.79	NP	NP	11.79
NFA	MW-310S	17.35	9.59	NP	NP	6.67	17.35	2.92	NP	NP	2.92													8.56	36.1	1.03	NP	NP	1.03
NFA	MW-310D	36.20	9.18	NP	NP	6.06	36.20	3.12	NP	NP	3.12													8.52	17.1	0.66	NP	NP	0.66
NFA	MW-311	22.00	10.26	NP	NP	7.2	22.00	3.06	NP	NP	3.06													9.28	22	0.98	NP	NP	0.98
FGPA	MW-201	15.00	13.76	NP	NP	4.95	15.00	8.81	NP	NP	8.81													7.93	14.98	5.83	NP	NP	5.83
FGPA	MW-202	13.80	14.39	NP	NP	3.87	13.80	10.52	NP	NP	10.52													2.34	13.85	12.05	NP	NP	12.05
FGPA	MW-203	14.80	10.29	NP	NP	8.05	14.80	2.24	NP	NP	2.24													7.21	14.81	3.08	NP	NP	3.08
FGPA	MW-207 (3)	11.75	14.50	NP	NP	Buried / Destroyed																		Destroyed					
FGPA	MW-208	21.75	28.23	NP	NP	Not Found						15.6	21.75	12.63	NP	NP	12.63							13.13	21.68	15.10	NP	NP	15.10
FGPA	MW-209	21.05	24.74	NP	NP	12.45	21.05	12.29	NP	NP	12.29													10.04	21.03	14.70	NP	NP	14.70
FGPA	MW-210	17.28	11.35	trace-2.54	NP	8.15	17.28	3.20	0.23	NP	3.40	9.34	17.28	2.01	0.92	NP	2.79	10.36	17.28	0.99	2.54	NP	3.15	9.63	17.32	1.72	2.48	NP	3.83
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	13.55	17.00	-2.09	5.57	NP	2.64	10.01	17.00	1.45	0.8	NP	2.13	12.31	17.00	-0.85	1.71	NP	0.60	12.18	16.7	-0.72	1.64	NP	0.67
FGPA	MW-4	17.65	10.58	NP	trace - 1.15	7.78	17.65	2.80	NP	1.15	2.80	8.71	17.65	1.87	NP	trace	1.87	10.82	17.65	-0.24	NP	trace	-0.24	10.54	16.28	0.04	NP	trace	0.04
FGPA	MW-303	41.85	9.07	NP	trace - 5.55	5.95	41.85	3.12	NP	trace	3.12	6.99	41.85	2.08	NP	0.88	2.08	8.62	41.85	0.45	NP	0.15	0.45	8.49	41.7	0.58	NP	0.55	0.58
FGPA	MW-312S	23.55	10.64	trace - 1.1	trace	8.47	23.55	2.17	trace	NP	2.17	8.63	23.55	2.01	trace	NP	2.01	9.71	23.55	0.93	trace	NP	0.93	9.69	23.55	0.95	0.2	NP	1.12
FGPA	MW-312D	31.90	10.57	NP	trace	7.38	31.90	3.19	NP	NP	3.19							10	31.90	0.57	NP	NP	0.57	9.9	31.9	0.67	NP	NP	0.67
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	12.8	24.90	-1.06	4.52	NP	2.78	9.81	24.90	1.93	0.22	NP	2.12	11.26	24.90	0.48	0.04	NP	0.51	11.13	24.8	0.61	0.05	NP	0.65
FGPA	MW-313D	47.35	12.01	NP	NP	8.7	47.35	3.31	NP	NP	3.31							11.15	47.35	0.86	NP	NP	0.86	11.03	47.2	0.98	NP	NP	0.98
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	9.72	26.60	2.89	NP	NP	2.89	13.17	26.60	-0.56	trace	NP	-0.56	12.02	26.60	0.59	trace	NP	0.59	11.96	26.6	0.65	0.03	NP	0.68
FGPA	MW-326D	45.05	11.91	NP	NP	8.95	45.05	2.96	NP	NP	2.96	12.39	45.05	-0.48	NP	NP	-0.48	11.17	45.05	0.74	NP	NP	0.74	11.25	45	0.66	NP	NP	0.66
FGPA	MW-333S	18.30	12.30	NP	NP	9.38	18.30	2.92	NP	NP	2.92													11.62	18.3	0.68	NP	NP	0.68
FGPA	MW-333D	45.20	12.30	NP	NP	9	45.20	3.30	NP	NP	3.30													11.42	45	0.88	NP	NP	0.88
FGPA	MW-335S	15.75	11.50	NP	NP	5.35	15.75	6.15	NP	NP	6.15													8.91	15.55	2.59	NP	NP	2.59
FGPA	MW-335D	36.50	11.96	NP	NP	8.45	36.50	3.51	NP	NP	3.51													10.78	36	1.18	NP	NP	1.18
FGPA	MW-336	15.00	12.73	NP	NP	11.24	15.00	1.49	NP	NP	1.49													10.23	15	2.50	NP	NP	2.50
FGPA	MW-339S	12.35	15.26	NP	NP	6.35	12.35	8.91	NP	NP	8.91	6.02	12.35	9.24	NP	NP	9.24	5.04	12.35	10.22	NP	NP	10.22	4.7	12.3	10.56	NP	NP	10.56
FGPA	MW-339D	20.95	15.42	NP	trace	6.05	20.95	9.37	NP	NP	9.37	8.83	20.95	6.59	NP	NP	6.59	4.85	20.95	10.57	NP	trace	10.57	4.63	21	10.79	NP	trace	10.79
FGPA	MW-341	30.10	19.62	NP	trace - 2.57	8.8	30.15	10.82	NP	1.45	10.82	8.63	30.10	10.99	NP	1	10.99	6.88	30.15	12.74	NP	1.75	12.74	6.36	30.15	13.26	NP	1.45	13.26
FPPA	M&E MW-1 (5)	15.05	9.36	NP	NP	Damaged																		9.14	16.9	0.22	NP	NP	0.22
FPPA	M&E MW-2	13.85	10.81	NP	NP	8.95	13.85	1.86	NP	NP	1.86													10.23	13.75	0.58	NP	NP	0.58
FPPA	M&E MW-4 (2)	7.81		NP	NP	Destroyed																		Not Found					
FPPA	M&E MW-5 (4)	16.88	8.92	0.01 - 3.24	NP	Damaged												13.53	16.88	-4.61	3.24	NP	-1.86	10.65	14.65	-1.73	3.16	NP	0.96
FPPA	MW-6	19.03	13.49	NP	NP	11.8	19.03	1.69	NP	NP	1.69													11.66	19	1.83	NP	NP	1.83
FPPA	MW-101	16.00	10.94	NP	NP	6.58	16.00	4.36	NP	NP	4.36													9.77	16	1.17	NP	NP	1.17
FPPA	MW-102	26.80	19.74	NP	NP	18	26.80	1.74	NP	NP	1.74													17.84	26.81	1.90	NP	NP	1.90
FPPA	MW-103	16.90	11.33	trace - 0.31	trace - 0.08	10.06	16.90	1.27	0.31	NP	1.53	10.61	16.90	0.72	trace	NP	0.72	10.25	16.90	1.08	trace	NP	1.08	9.77	16.88	1.56	0.02	NP	1.58
FPPA	MW-104	14.90	11.77	NP	NP	Not Found						10.55	14.90	1.22	NP	NP	1.22							9.73	14.8	2.04	NP	NP	2.04
FPPA	MW-105	27.55	22.14	NP	NP	20.21	27.55																						

Former Tidewater Facility Pawtucket, Rhode Island

Notes

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

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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)	October 2011 Groundwater Gauging Information						January 2012 Groundwater Gauging Information						April 2012 Groundwater Gauging Information						July 2012 Groundwater Gauging Information						October 2012 Groundwater Gauging Information					
						Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundw	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa ter	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa ter	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa ter	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa ter
NFA	MW-5	11.60	32.23	NP	NP	dry	11.6	dry	dry	dry	dry	dry	11.7	dry	dry	dry	dry	dry	11.38	dry	dry	dry	dry	dry	dry	11.38	dry	dry	dry	dry	dry	dry	dry	dry	dry
NFA	MW-7	27.45	31.98	NP	NP	19.25	27.5	12.73	NP	NP	12.73	18.29	27.46	13.69	NP	NP	13.69	20.6	27.28	11.38	NP	NP	11.38	20.41	25.88	11.57	NP	NP	11.57	21.63	27.46	10.35	NP	NP	10.35
NFA	MW-204	16.77	9.47	NP	NP	7.65	16.8	1.82	NP	NP	1.82	8.6	16.81	0.87	NP	NP	0.87	9.56	16.5	-0.09	NP	NP	-0.09	9.3	16.9	0.17	NP	NP	0.17	9.52	16.82	-0.05	NP	NP	-0.05
NFA	MW-205	15.00	12.20	NP	NP	1.54	15	10.66	NP	NP	10.66	1.5	14.95	10.70	NP	NP	10.70	2.11	14.75	10.09	NP	NP	10.09	2.01	15.08	10.19	NP	NP	10.19	2.77	15.05	9.43	NP	NP	9.43
NFA	MW-206	28.77	37.22	NP	NP	26.22	28.7	11.00	NP	NP	11.00	25.76	28.8	11.46	NP	NP	11.46	26.99	28.7	10.23	NP	NP	10.23	26.9	28.94	10.32	NP	NP	10.32	27.7	28.99	9.52	NP	NP	9.52
NFA	MW-310S	17.35	9.59	NP	NP	7.26	16.8	2.33	NP	NP	2.33	8.91	17	0.68	NP	NP	0.68	9.45	16.81	0.14	NP	NP	0.14	6.98	16.9	2.61	NP	NP	2.61	7.57	16.75	2.02	NP	NP	2.02
NFA	MW-310D	36.20	9.18	NP	NP	6.88	36.18	2.30	NP	NP	2.30	8.61	36.2	0.57	NP	NP	0.57	9.1	35.9	0.08	NP	NP	0.08	9	36.3	0.18	NP	NP	0.18	7.08	36.1	2.10	NP	NP	2.10
NFA	MW-311	22.00	10.26	NP	NP	7.88	22	2.38	NP	NP	2.38	9.76	22.03	0.50	NP	NP	0.50	10.05	21.75	0.21	NP	NP	0.21	10.01	22.11	0.25	NP	NP	0.25	8.37	22	1.89	NP	NP	1.89
FGPA	MW-201	15.00	13.76	NP	NP	8.7	15.1	5.06	NP	NP	5.06	8.57	15.18	5.19	NP	NP	5.19	10.19	14.84	3.57	NP	NP	3.57	10.36	15.15	3.40	NP	NP	3.40	9.24	15.04	4.52	NP	NP	4.52
FGPA	MW-202	13.80	14.39	NP	NP	3.15	13.8	11.24	NP	NP	11.24	2.55	13.82	11.84	NP	NP	11.84	4.41	13.54	9.98	NP	NP	9.98	4.56	13.85	9.83	NP	NP	9.83	5.21	13.82	9.18	NP	NP	9.18
FGPA	MW-203	14.80	10.29	NP	NP	7.5	14.73	2.79	NP	NP	2.79	7.88	14.79	2.41	NP	NP	2.41	8.79	14.6	1.50	NP	NP	1.50	8.99	14.89	1.30	NP	NP	1.30	8.98	14.82	1.31	NP	NP	1.31
FGPA	MW-207 (3)	11.75	14.50	NP	NP	Destroyed						Destroyed						Destroyed						Destroyed						Destroyed					
FGPA	MW-208	21.75	28.23	NP	NP	14.77	21.85	13.46	NP	NP	13.46	13.64	21.75	14.59	NP	NP	14.59	16.21	21.56	12.02	NP	NP	12.02	16.12	21.8	12.11	NP	NP	12.11	17.38	21.9	10.85	NP	NP	10.85
FGPA	MW-209	21.05	24.74	NP	NP	11.6	21	13.14	NP	NP	13.14	10.55	21.16	14.19	NP	NP	14.19	12.91	20.8	11.83	NP	NP	11.83	12.87	21.1	11.87	NP	NP	11.87	14.04	21.08	10.70	NP	NP	10.70
FGPA	MW-210	17.28	11.35	trace-2.54	NP	9.35	17.3	2.00	1.03	NP	2.88	10.22	17.35	1.13	2.25	NP	3.04	9.43	17.35	1.92	NP	NP	1.92	10.21	17.4	1.14	0.11	NP	1.23	11.88	17.36	-0.53	NP	NP	-0.53
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	9.25	16.94	2.21	0.05	NP	2.25	10.12	16.72	1.34	0.02	NP	1.36	9.57	16.72	1.89	0.03	NP	1.92	11.32	16.8	0.14	0.02	NP	0.16	11.18	16.8	0.28	trace	NP	0.28
FGPA	MW-4	17.65	10.58	NP	trace - 1.15	8.82	15.13	1.76	NP	trace	1.76	10.11	16.15	0.47	NP	NP	0.47	8.04	16.18	2.54	NP	NP	2.54	10.61	15.3	-0.03	NP	0.25	-0.03	8.04	15.6	2.54	NP	trace	2.54
FGPA	MW-303	41.85	9.07	NP	trace - 5.55	7.02	41.8	2.05	NP	0.8	2.05	8.3	41.9	0.77	NP	0.32	0.77	6.54	42	2.53	NP	1.35	2.53	8.7	41.9	0.37	NP	1.19	0.37	6.79	41.98	2.28	NP	3.74	2.28
FGPA	MW-312S	23.55	10.64	trace - 1.1	trace	9.3	24.53	1.34	0.48	NP	1.75	9.82	23.42	0.82	0.12	NP	0.92	9.22	23.42	1.42	0.46	NP	1.81	11.05	23.42	-0.41	1.1	NP	0.53	9.7	23.55	0.94	0.01	NP	0.95
FGPA	MW-312D	31.90	10.57	NP	trace	8.5	31.9	2.07	NP	NP	2.07	10.15	31.9	0.42	NP	NP	0.42	7.97	31.94	2.60	NP	NP	2.60	10.53	31.98	0.04	NP	NP	0.04	9.52	31.88	1.05	NP	NP	1.05
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	9.65	24.7	2.09	0.09	NP	2.17	10.7	24.74	1.04	NP	NP	1.04	9.61	24.83	2.13	NP	trace	2.13	11.51	24.8	0.23	trace	NP	0.23	11.13	24.7	0.61	NP	trace	0.61
FGPA	MW-313D	47.35	12.01	NP	NP	9.61	47.2	2.40	NP	NP	2.40	10.68	47.25	1.33	NP	NP	1.33	9.62	47.31	2.39	NP	NP	2.39	11.6	47.35	0.41	NP	NP	0.41	11.32	47.25	0.69	NP	NP	0.69
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	10.4	26.55	2.21	0.03	NP	2.24	11.25	26.65	1.36	NP	NP	1.36	10.57	26.7	2.04	NP	NP	2.04	12.42	26.7	0.19	NP	NP	0.19	12.14	26.55	0.47	NP	NP	0.47
FGPA	MW-326D	45.05	11.91	NP	NP	9.6	45.2	2.31	NP	NP	2.31	10.72	45.1	1.19	NP	NP	1.19	9.72	45.05	2.19	NP	NP	2.19	11.77	45.3	0.14	NP	NP	0.14	11.72	45.12	0.19	NP	NP	0.19
FGPA	MW-333S	18.30	12.30	NP	NP	10.17	18.26	2.13	NP	NP	2.13	11.94	18.07	0.36	NP	NP	0.36	10.74	15.48	1.56	NP	NP	1.56	11.95	18.28	0.35	NP	NP	0.35	11.71	18.05	0.59	NP	NP	0.59
FGPA	MW-333D	45.20	12.30	NP	NP	10.02	44.9	2.28	NP	NP	2.28	11.9	44.94	0.40	NP	NP	0.40	11.74	35.79	0.56	NP	NP	0.56	11.9	45	0.40	NP	NP	0.40	11.46	44.88	0.84	NP	NP	0.84
FGPA	MW-335S	15.75	11.50	NP	NP	9.13	15.57	2.37	NP	NP	2.37	9.66	15.6	1.84	NP	NP	1.84	12.15	17.91	-0.65	NP	NP	-0.65	10.54	15.8	0.96	NP	NP	0.96	10.52	15.82	0.98	NP	NP	0.98
FGPA	MW-335D	36.50	11.96	NP	NP	9.58	36	2.38	NP	NP	2.38	11.15	36	0.81	NP	NP	0.81	12.28	44.7	-0.32	NP	NP	-0.32	11.37	36.5	0.59	NP	NP	0.59	11.23	36	0.73	NP	NP	0.73
FGPA	MW-336	15.00	12.73	NP	NP	10.58	15.15																												

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 2013 Groundwater Gauging Information						April 2013 Groundwater Gauging Information						August 2013 Groundwater Gauging Information						October 2013 Groundwater Gauging Information					
						Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa-ter	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa-ter	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa-ter	Depth To Water (ft)	Total Well Depth (ft)	GW Elevation (feet)	LNAPL Thickness (feet)	DNAPL Thickness (feet)	Corrected Groundwa-ter
NFA	MW-5	11.60	32.23	NP	NP	dry	11.4		NP	NP	dry	dry	11.8		NP	NP	dry	dry	11.8		NP	NP	dry	dry	11.4		NP	NP	dry
NFA	MW-7	27.45	31.98	NP	NP	20.1	27.25	11.88	NP	NP	11.88	18.21	27.6	13.77	NP	NP	13.77	19.21	27.58	12.77	NP	NP	12.77	22.32	27.25	9.66	NP	NP	9.66
NFA	MW-204	16.77	9.47	NP	NP	6.51	16.85	2.96	NP	NP	2.96	6.16	16.85	3.31	NP	NP	3.31	6.68	16.66	2.79	NP	NP	2.79	9.04	16.6	0.43	NP	NP	0.43
NFA	MW-205	15.00	12.20	NP	NP	1.51	14.95	10.69	NP	NP	10.69	1.51	15.05	10.69	NP	NP	10.69	1.63	15.05	10.57	NP	NP	10.57	1.61	15	10.59	NP	NP	10.59
NFA	MW-206	28.77	37.22	NP	NP	26.55	28.68	10.67	NP	NP	10.67	25.72	29.05	11.50	NP	NP	11.50	26.28	29.04	10.94	NP	NP	10.94	28.27	28.7	8.95	NP	NP	8.95
NFA	MW-310S	17.35	9.59	NP	NP	6.56	16.8	3.03	NP	NP	3.03	6.18	16.96	3.41	NP	NP	3.41	6.58	16.9	3.01	NP	NP	3.01	9.16	16.8	0.43	NP	NP	0.43
NFA	MW-310D	36.20	9.18	NP	NP	5.01	36.2	4.17	NP	NP	4.17	5.58	36.2	3.60	NP	NP	3.60	6.02	36.2	3.16	NP	NP	3.16	8.65	36.2	0.53	NP	NP	0.53
NFA	MW-311	22.00	10.26	NP	NP	7.09	22	3.17	NP	NP	3.17	6.79	22	3.47	NP	NP	3.47	7.21	22.05	3.05	NP	NP	3.05	9.81	19.9	0.45	NP	NP	0.45
FGPA	MW-201	15.00	13.76	NP	NP	9.35	15	4.41	NP	NP	4.41	9.09	15.08	4.67	NP	NP	4.67	10.31	15.05	3.45	NP	NP	3.45	11.88	15	1.88	NP	NP	1.88
FGPA	MW-202	13.80	14.39	NP	NP	4.05	13.52	10.34	NP	NP	10.34	2.56	13.9	11.83	NP	NP	11.83	3.34	13.92	11.05	NP	NP	11.05	Not Found					
FGPA	MW-203	14.80	10.29	NP	NP	8.68	14.8	1.61	NP	NP	1.61	8.19	14.94	2.10	NP	NP	2.10	8.62	14.85	1.67	NP	NP	1.67	9.01	14.75	1.28	NP	NP	1.28
FGPA	MW-207 (3)	11.75	14.50	NP	NP	Destroyed						Destroyed						Destroyed						Destroyed					
FGPA	MW-208	21.75	28.23	NP	NP	15.7	21.6	12.53	NP	NP	12.53	13.65	21.92	14.58	NP	NP	14.58	14.73	21.8	13.50	NP	NP	13.50	18.05	21.9	10.18	NP	NP	10.18
FGPA	MW-209	21.05	24.74	NP	NP	12.5	20.8	12.24	NP	NP	12.24	10.68	21.08	14.06	NP	NP	14.06	11.66	21.05	13.08	NP	NP	13.08	14.55	21	10.19	NP	NP	10.19
FGPA	MW-210	17.28	11.35	trace-2.54	NP	9.19	17.82	2.16	0.04	NP	2.19	9.32	17.82	2.03	1.44	NP	3.25	9.25	17.38	2.10	0.08	NP	2.17	10.55	17.3	0.80	trace	NP	0.80
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	8.45	16.95	3.01	NP	NP	3.01	9.2	16.76	2.26	NP	NP	2.26	9.1	16.95	2.36	0.05	NP	2.40	11.5	17	-0.04	trace	NP	-0.04
FGPA	MW-4	17.65	10.58	NP	trace - 1.15	7.59	16.3	2.99	NP	trace	2.99	8.38	16.3	2.20	NP	trace	2.20	8.02	16.3	2.56	NP	0.7	2.56	10.88	15.25	-0.30	NP	NP	-0.30
FGPA	MW-303	41.85	9.07	NP	trace - 5.55	7.31	41.9	1.76	NP	2.29	1.76	6.7	41.9	2.37	NP	5.55	2.37	6.43	41.95	2.64	NP	5.25	2.64	9.1	39.8	-0.03	NP	NP	4.6
FGPA	MW-312S	23.55	10.64	trace - 1.1	trace	8.83	23.45	1.81	0.04	NP	1.84	9.18	23.45	1.46	0.76	NP	2.11	9.55	23.55	1.09	0.93	NP	1.88	10.15	23.4	0.49	0.07	NP	0.55
FGPA	MW-312D	31.90	10.57	NP	trace	7.76	32.9	2.81	NP	NP	2.81	7.59	31.93	2.98	NP	NP	2.98	8.19	32.9	2.38	NP	NP	2.38	10.37	31.9	0.20	NP	NP	0.20
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	9.56	24.7	2.18	NP	NP	2.18	9.21	24.85	2.53	NP	NP	2.53	9.1	24.82	2.64	trace	NP	2.64	11.89	24.6	-0.15	NP	NP	-0.15
FGPA	MW-313D	47.35	12.01	NP	NP	9.71	47.2	2.30	NP	NP	2.30	9.25	47.26	2.76	NP	NP	2.76	9.22	47.25	2.79	NP	NP	2.79	12.05	47.2	-0.04	NP	NP	-0.04
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	9.25	26.5	3.36	NP	NP	3.36	10.2	26.66	2.41	NP	NP	2.41	10.07	26.58	2.54	NP	NP	2.54	12.88	26.6	-0.27	trace	NP	-0.27
FGPA	MW-326D	45.05	11.91	NP	NP	8.56	45	3.35	NP	NP	3.35	9.32	45.1	2.59	NP	NP	2.59	9.18	45.05	2.73	NP	NP	2.73	12.11	45.3	-0.20	NP	NP	-0.20
FGPA	MW-333S	18.30	12.30	NP	NP	10.04	18	2.26	NP	NP	2.26	9.36	18	2.94	NP	NP	2.94	9.33	17.9	2.97	NP	NP	2.97	12.14	17.8	0.16	NP	NP	0.16
FGPA	MW-333D	45.20	12.30	NP	NP	10.18	44.85	2.12	NP	NP	2.12	9.45	45.95	2.85	NP	NP	2.85	9.45	44.96	2.85	NP	NP	2.85	12.31	44.9	-0.01	NP	NP	-0.01
FGPA	MW-335S	15.75	11.50	NP	NP	9.95	15.6	1.55	NP	NP	1.55	9.74	15.63	1.76	NP	NP	1.76	9.89	15.75	1.61	NP	NP	1.61	10.78	15.75	0.72	NP	NP	0.72
FGPA	MW-335D	36.50	11.96	NP	NP	9.81	35.9	2.15	NP	NP	2.15	9.05	36.1	2.91	NP	NP	2.91	9.17	36	2.79	NP	NP	2.79	11.74	35.9	0.22	NP	NP	0.22
FGPA	MW-336	15.00	12.73	NP	NP	11.52	15.2	1.21	NP	NP	1.21	10.75	15.2	1.98	NP	NP	1.98	11.45	15.15	1.28	NP	NP	1.28	11.98	15	0.75	NP	NP	0.75
FGPA	MW-339S	12.35	15.26	NP	NP	6.54	12.3	8.72	NP	NP	8.72	5.17	12.45	10.09	NP	NP	10.09	6	12.45	9.26	NP	NP	9.26	8.51	12.4	6.75	NP	NP	6.75
FGPA	MW-339D	20.95	15.42	NP	trace	6.14	21	9.28	NP	trace	9.28	4.9	21.06	10.52	NP	trace	10.52	5.68	21.05	9.74	NP	NP	9.74	8.22	20.7	7.20	NP	trace	7.20
FGPA	MW-341	30.10	19.62	NP	trace - 2.57	6.79	30.15	12.83	NP	1.4	12.83	7.1	30.15	12.52	NP	1.95	12.52	8.08	30.15	11.54	NP	2.57	11.54	10.1	30.15	9.52	NP	2	9.52
FPPA	M&E MW-1 (5)	15.05	9.36	NP	NP	7.9	15	1.46	NP	NP	1.46	7.73	15	1.63	NP	NP	1.63	7.9	15	1.46	NP	NP	1.46	8.91	15	0.45	NP	NP	0.45
FPPA	M&E MW-2	13.85	10.81	NP	NP	9.49	13.5	1.32	NP	NP	1.32	9.25	13.9	1.56	NP	NP	1.56	9.12	13.75	1.69	NP	NP	1.69	10.06	13.4	0.75	NP	NP	0.75
FPPA	M&E MW-4 (2)	7.81		NP	NP	Not Found						Not Found						Not Found						Not Found					
FPPA	M&E MW-5 (4)	16.88	8.92	0.01 - 3.24	NP	6.53	14.7	2.39	0.02	NP	2.41	7.13	14.7	1.79	0.14	NP	1.91	6.92	14.7	2.00	0.01	NP	2.01	8.3	14.65	0.62	0.33	NP	0.90
FPPA	MW-6	19.03	13.49	NP	NP	12.04	18.76	1.45	NP	NP	1.45	11.87	13	1.62	NP	NP	1.62	11.75	19.05	1.74	NP	NP	1.74	12.19	18.8	1.30	NP	NP	1.30
FPPA	MW-101	16.00	10.94	NP	NP	9.35	15.75	1.59	NP	NP	1.59	Not Able to Access this Area						9.41	16.1	1.53	NP	NP	1.53	10.29	15.75	0.65	NP	NP	0.65
FPPA	MW-102	26.80	19.74	NP	NP	Not Found						17.88	26.9	1.86	NP	NP	1.86	18.67	26.7	1.07	NP	NP	1.07	16.96	26.5	2.78	NP	NP	2.78
FPPA	MW-103	16.90	11.33	trace - 0.31	trace - 0.08	9.05	<																						

Former Tidewater Facility Pawtucket, Rhode Island

[illegible]

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.
 Blanks indicate no measurement collected during the event.

1. Not found after June 16, 2010.
2. Buried during gasholders Nos. 7 and 8 decommissioning.
3. Found to have casing broken on December 3, 2010.
4. Well was found to be significantly damaged on January 11, 2011.

5. This table presents gauging results from 2011 to 2013. The data was collected during Site Investigation activities from 2009 and 2010.

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

File No. 05.0043654.00
1/9/2014

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)	June 03 2011					June 29 2011					July 2011					October 2011					January 2012					April 2012				
						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)	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)	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	dry	-	NP	-	NP	dry	-	NP	-	NP
NFA	MW-7	27.45	31.98	NP	NP											20.17	-	NP	-	NP	19.25	-	NP	-	NP	18.29	-	NP	-	NP	20.60	-	NP	-	NP
NFA	MW-204	16.77	9.47	NP	NP											8.35	-	NP	-	NP	7.65	-	NP	-	NP	8.60	-	NP	-	NP	9.56	-	NP	-	NP
NFA	MW-205	15.00	12.20	NP	NP											1.93	-	NP	-	NP	1.54	-	NP	-	NP	1.50	-	NP	-	NP	2.11	-	NP	-	NP
NFA	MW-206	28.77	37.22	NP	NP											26.75	-	NP	-	NP	26.22	-	NP	-	NP	25.76	-	NP	-	NP	26.99	-	NP	-	NP
NFA	MW-310S	17.35	9.59	NP	NP											8.42	-	NP	-	NP	7.26	-	NP	-	NP	8.91	-	NP	-	NP	9.45	-	NP	-	NP
NFA	MW-310D	36.20	9.18	NP	NP											7.54	-	NP	-	NP	6.88	-	NP	-	NP	8.61	-	NP	-	NP	9.10	-	NP	-	NP
NFA	MW-311	22.00	10.26	NP	NP											9.33	-	NP	-	NP	7.88	-	NP	-	NP	9.76	-	NP	-	NP	10.05	-	NP	-	NP
FGPA	MW-201	15.00	13.76	NP	NP											13.21	-	NP	-	NP	8.70	-	NP	-	NP	8.57	-	NP	-	NP	10.19	-	NP	-	NP
FGPA	MW-202	13.80	14.39	NP	NP											4.27	-	NP	-	NP	3.15	-	NP	-	NP	2.55	-	NP	-	NP	4.41	-	NP	-	NP
FGPA	MW-203	14.80	10.29	NP	NP											8.47	-	NP	-	NP	7.50	-	NP	-	NP	7.88	-	NP	-	NP	8.79	-	NP	-	NP
FGPA	MW-207 (3)	11.75	14.50	NP	NP	Destroyed					Destroyed					Destroyed					Destroyed					Destroyed									
FGPA	MW-208	21.75	28.23	NP	NP											15.82	-	NP	-	NP	14.77	-	NP	-	NP	13.64	-	NP	-	NP	16.21	-	NP	-	NP
FGPA	MW-209	21.05	24.74	NP	NP											13.54	-	NP	-	NP	11.60	-	NP	-	NP	10.55	-	NP	-	NP	12.91	-	NP	-	NP
FGPA	MW-210	17.28	11.35	trace-2.54	NP	9.05	8.05	1	-	NP	8.98	8.65	0.33	-	NP	10.03	9.9	0.13	-	NP	9.35	8.32	1.03	-	NP	10.22	7.97	2.25	-	NP	9.43	-	NP	-	NP
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	10.43	9.63	0.8	-	NP	11.21	11.18	0.03	-	NP	11.30	11.15	0.15	-	NP	9.25	9.2	0.05	-	NP	10.12	10.1	0.02	-	NP	9.57	9.54	0.03	-	NP
FGPA	MW-4	17.65	10.58	NP	trace - 1.15	8.78	-	NP	trace	trace	9.00	-	NP	trace	trace	10.99	-	NP	trace	trace	8.82	-	NP	trace	trace	10.11	-	NP	-	NP	8.04	-	NP	-	NP
FGPA	MW-303	41.85	9.07	NP	trace - 5.55	7.00	-	NP	41.72	0.13	7.10	-	NP	41.55	0.3	9.01	-	NP	trace	trace	7.02	-	NP	41.05	0.8	8.30	-	NP	41.58	0.32	6.54	-	NP	40.65	1.35
FGPA	MW-312S	23.55	10.64	trace - 1.1	trace	8.72	8.71	0.01	-	NP	8.78	8.64	0.14	-	NP	8.75	8.5	0.25	-	NP	9.30	8.82	0.48	-	NP	9.82	9.7	0.12	-	NP	9.22	8.76	0.46	-	NP
FGPA	MW-312D	31.90	10.57	NP	trace	8.12	-	NP	-	NP	8.55	-	NP	-	NP	9.18	-	NP	-	NP	8.50	-	NP	-	NP	10.15	-	NP	-	NP	7.97	-	NP	-	NP
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	10.49	trace	trace	-	NP	11.23	11.22	0.01	-	NP	11.47	11.45	0.02	-	NP	9.65	9.56	0.09	-	NP	10.70	-	NP	-	NP	9.61	-	NP	trace	trace
FGPA	MW-313D	47.35	12.01	NP	NP	10.45	-	NP	-	NP	11.21	-	NP	-	NP	11.59	-	NP	-	NP	9.61	-	NP	-	NP	10.68	-	NP	-	NP	9.62	-	NP	-	NP
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	11.46	trace	trace	-	NP	12.28	12.27	0.01	-	NP	11.43	11.41	0.02	-	NP	10.40	10.37	0.03	-	NP	11.25	-	NP	-	NP	10.57	-	NP	-	NP
FGPA	MW-326D	45.05	11.91	NP	NP	10.75	-	NP	-	NP	11.45	-	NP	-	NP	10.37	-	NP	-	NP	9.60	-	NP	-	NP	10.72	-	NP	-	NP	9.72	-	NP	-	NP
FGPA	MW-333S	18.30	12.30	NP	NP											12.05	-	NP	-	NP	10.17	-	NP	-	NP	11.94	-	NP	-	NP	10.74	-	NP	-	NP
FGPA	MW-333D	45.20	12.30	NP	NP											12.24	-	NP	-	NP	10.02	-	NP	-	NP	11.90	-	NP	-	NP	11.74	-	NP	-	NP
FGPA	MW-335S	15.75	11.50	NP	NP											10.55	-	NP	-	NP	9.13	-	NP	-	NP	9.66	-	NP	-	NP	12.15	-	NP	-	NP
FGPA	MW-335D	36.50	11.96	NP	NP											11.35	-	NP	-	NP	9.58	-	NP	-	NP	11.15	-	NP	-	NP	12.28	-	NP	-	NP
FGPA	MW-336	15.00	12.73	NP	NP											11.69	-	NP	-	NP	10.58	-	NP	-	NP	10.74	-	NP	-	NP	11.78	-	NP	-	NP
FGPA	MW-339S	12.35	15.26	NP	NP	5.21	-	NP	-	NP	5.65	-	NP	-	NP	6.51	-	NP	-	NP	5.63	-	NP	-	NP	5.11	-	NP	-	NP	6.76	-	NP	-	NP
FGPA	MW-339D	20.95	15.42	NP	trace	4.95	-	NP	-	NP	5.40	-	NP	-	NP	8.30	-	NP	-	NP	5.37	-	NP	trace	trace	4.95	-	NP	trace	trace	6.54	-	NP	trace	trace
FGPA	MW-341	30.10	19.62	NP	trace - 2.57	7.28	-	NP	28.6	1.5	8.10	-	NP	28.85	1.25	8.93	-	NP	29.15	0.95	8.04	-	NP	28.42	1.68	7.25	-	NP	28.67	1.48	9.26	-	NP	28.77	1.38
FPPA	M&E MW-1 (5)	15.05	9.36	NP	NP											Not Found					Not Found					10.45	-	NP	-	NP	10.60	-	NP	-	NP
FPPA	M&E MW-2	13.85	10.81	NP	NP											9.40	-	NP	-	NP	8.42	-	NP	-	NP	10.83	-	NP	-	NP	10.95	-	NP	-	NP
FPPA	M&E MW-4 (2)	7.81		NP	NP	Not Found					Not Found					Not Found					Not Found					Not Found									
FPPA	M&E MW-5 (4)	16.88	8.92	0.01 - 3.24	NP	8.40	7.2	1.2	-	NP	8.40	8	0.4	-	NP	9.32	9.19	0.13	-	NP	6.50	6.45	0.05	-	NP	8.41	8.33	0.08	-	NP	7.39	7.35	0.04	-	NP
FPPA	MW-6	19.03	13.49	NP	NP											11.87	-	NP	-	NP	11.48	-	NP	-	NP	11.91	-	NP	-	NP	11.88	-	NP	-	NP
FPPA	MW-101	16.00	10.94	NP	NP											9.17	-	NP	-	NP	9.00	-	NP	-	NP	10.21	-	NP	-	NP	10.41	-	NP	-	NP
FPPA	MW-102	26.80																																	

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

File No. 05.0043654.00
1/9/2014

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 2012					October 2012					January 2013					April 2013					August 2013					October 2013				
						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)	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)	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	-	dry	-	dry	dry	-	dry	-	dry	dry	-	NP	-	NP	dry	-	NP	-	NP	dry	-	NP	-	NP	dry	-	NP	-	NP
NFA	MW-7	27.45	31.98	NP	NP	20.41	-	NP	-	NP	21.63	-	NP	-	NP	20.10	-	NP	-	NP	18.21	-	NP	-	NP	19.21	-	NP	-	NP	22.32	-	NP	-	NP
NFA	MW-204	16.77	9.47	NP	NP	9.30	-	NP	-	NP	9.52	-	NP	-	NP	6.51	-	NP	-	NP	6.16	-	NP	-	NP	6.68	-	NP	-	NP	9.04	-	NP	-	NP
NFA	MW-205	15.00	12.20	NP	NP	2.01	-	NP	-	NP	2.77	-	NP	-	NP	1.51	-	NP	-	NP	1.51	-	NP	-	NP	1.63	-	NP	-	NP	1.61	-	NP	-	NP
NFA	MW-206	28.77	37.22	NP	NP	26.90	-	NP	-	NP	27.70	-	NP	-	NP	26.55	-	NP	-	NP	25.72	-	NP	-	NP	26.28	-	NP	-	NP	28.27	-	NP	-	NP
NFA	MW-310S	17.35	9.59	NP	NP	6.98	-	NP	-	NP	7.57	-	NP	-	NP	6.56	-	NP	-	NP	6.18	-	NP	-	NP	6.58	-	NP	-	NP	9.16	-	NP	-	NP
NFA	MW-310D	36.20	9.18	NP	NP	9.00	-	NP	-	NP	7.08	-	NP	-	NP	5.01	-	NP	-	NP	5.58	-	NP	-	NP	6.02	-	NP	-	NP	8.65	-	NP	-	NP
NFA	MW-311	22.00	10.26	NP	NP	10.01	-	NP	-	NP	8.37	-	NP	-	NP	7.09	-	NP	-	NP	6.79	-	NP	-	NP	7.21	-	NP	-	NP	9.81	-	NP	-	NP
FGPA	MW-201	15.00	13.76	NP	NP	10.36	-	NP	-	NP	9.24	-	NP	-	NP	9.35	-	NP	-	NP	9.09	-	NP	-	NP	10.31	-	NP	-	NP	11.88	-	NP	-	NP
FGPA	MW-202	13.80	14.39	NP	NP	4.56	-	NP	-	NP	5.21	-	NP	-	NP	4.05	-	NP	-	NP	2.56	-	NP	-	NP	3.34	-	NP	-	NP	Not Found				
FGPA	MW-203	14.80	10.29	NP	NP	8.99	-	NP	-	NP	8.98	-	NP	-	NP	8.68	-	NP	-	NP	8.19	-	NP	-	NP	8.62	-	NP	-	NP	9.01	-	NP	-	NP
FGPA	MW-207 (3)	11.75	14.50	NP	NP	Destroyed					Destroyed					Destroyed					Destroyed					Destroyed					Destroyed				
FGPA	MW-208	21.75	28.23	NP	NP	16.12	-	NP	-	NP	17.38	-	NP	-	NP	15.70	-	NP	-	NP	13.65	-	NP	-	NP	14.73	-	NP	-	NP	18.05	-	NP	-	NP
FGPA	MW-209	21.05	24.74	NP	NP	12.87	-	NP	-	NP	14.04	-	NP	-	NP	12.50	-	NP	-	NP	10.68	-	NP	-	NP	11.66	-	NP	-	NP	14.55	-	NP	-	NP
FGPA	MW-210	17.28	11.35	trace-2.54	NP	10.21	10.1	0.11	-	NP	11.88	-	NP	-	NP	9.19	9.15	0.04	-	NP	9.32	7.88	1.44	-	NP	9.25	9.17	0.08	-	NP	10.55	trace	trace	-	NP
FGPA	MW-3	17.00	11.46	trace - 5.57	NP	11.32	11.3	0.02	-	NP	11.18	trace	trace	-	NP	8.45	-	NP	-	NP	9.20	-	NP	-	NP	9.10	9.05	0.05	-	NP	11.50	trace	trace	-	NP
FGPA	MW-4	17.65	10.58	NP	trace - 1.15	10.61	-	NP	15.05	0.25	8.04	-	NP	trace	trace	7.59	-	NP	trace	trace	8.38	-	NP	trace	trace	8.02	-	NP	15.6	0.7	10.88	-	NP	-	NP
FGPA	MW-303	41.85	9.07	NP	trace - 5.55	8.70	-	NP	40.71	1.19	6.79	-	NP	38.24	3.74	7.31	-	NP	39.61	2.29	6.70	-	NP	36.35	5.55	6.43	-	NP	36.7	5.25	9.10	-	NP	35.2	4.6
FGPA	MW-312S	23.55	10.64	trace - 1.1	trace	11.05	9.95	1.1	-	NP	9.70	9.69	0.01	-	NP	8.83	8.79	0.04	-	NP	9.18	8.42	0.76	-	NP	9.55	8.62	0.93	-	NP	10.15	10.08	0.07	-	NP
FGPA	MW-312D	31.90	10.57	NP	trace	10.53	-	NP	-	NP	9.52	-	NP	-	NP	7.76	-	NP	-	NP	7.59	-	NP	-	NP	8.19	-	NP	-	NP	10.37	-	NP	-	NP
FGPA	MW-313S	24.90	11.74	trace - 4.52	trace	11.51	trace	trace	-	NP	11.13	-	NP	trace	trace	9.56	-	NP	-	NP	9.21	-	NP	-	NP	9.10	trace	trace	-	NP	11.89	-	NP	-	NP
FGPA	MW-313D	47.35	12.01	NP	NP	11.60	-	NP	-	NP	11.32	-	NP	-	NP	9.71	-	NP	-	NP	9.25	-	NP	-	NP	9.22	-	NP	-	NP	12.05	-	NP	-	NP
FGPA	MW-326S	26.60	12.61	trace - 0.3	NP	12.42	-	NP	-	NP	12.14	-	NP	-	NP	9.25	-	NP	-	NP	10.20	-	NP	-	NP	10.07	-	NP	-	NP	12.88	trace	trace	-	NP
FGPA	MW-326D	45.05	11.91	NP	NP	11.77	-	NP	-	NP	11.72	-	NP	-	NP	8.56	-	NP	-	NP	9.32	-	NP	-	NP	9.18	-	NP	-	NP	12.11	-	NP	-	NP
FGPA	MW-333S	18.30	12.30	NP	NP	11.95	-	NP	-	NP	11.71	-	NP	-	NP	10.04	-	NP	-	NP	9.36	-	NP	-	NP	9.33	-	NP	-	NP	12.14	-	NP	-	NP
FGPA	MW-333D	45.20	12.30	NP	NP	11.90	-	NP	-	NP	11.46	-	NP	-	NP	10.18	-	NP	-	NP	9.45	-	NP	-	NP	9.45	-	NP	-	NP	12.31	-	NP	-	NP
FGPA	MW-335S	15.75	11.50	NP	NP	10.54	-	NP	-	NP	10.52	-	NP	-	NP	9.95	-	NP	-	NP	9.74	-	NP	-	NP	9.89	-	NP	-	NP	10.78	-	NP	-	NP
FGPA	MW-335D	36.50	11.96	NP	NP	11.37	-	NP	-	NP	11.23	-	NP	-	NP	9.81	-	NP	-	NP	9.05	-	NP	-	NP	9.17	-	NP	-	NP	11.74	-	NP	-	NP
FGPA	MW-336	15.00	12.73	NP	NP	11.81	-	NP	-	NP	12.97	-	NP	-	NP	11.52	-	NP	-	NP	10.75	-	NP	-	NP	11.45	-	NP	-	NP	11.98	-	NP	-	NP
FGPA	MW-339S	12.35	15.26	NP	NP	6.95	-	NP	-	NP	7.55	-	NP	-	NP	6.54	-	NP	-	NP	5.17	-	NP	-	NP	6.00	-	NP	-	NP	8.51	-	NP	-	NP
FGPA	MW-339D	20.95	15.42	NP	trace	6.78	-	NP	trace	trace	7.25	-	NP	-	NP	6.14	-	NP	trace	trace	4.90	-	NP	trace	trace	5.68	-	NP	-	NP	8.22	-	NP	trace	trace
FGPA	MW-341	30.10	19.62	NP	trace - 2.57	9.40	-	NP	29.02	1.08	10.36	-	NP	28.72	1.5	6.79	-	NP	28.75	1.4	7.10	-	NP	28.2	1.95	8.08	-	NP	27.58	2.57	10.10	-	NP	28.15	2
FPPA	M&E MW-1 (5)	15.05	9.36	NP	NP	Not Found					7.94	-	NP	-	NP	7.90	-	NP	-	NP	7.73	-	NP	-	NP	7.90	-	NP	-	NP	8.91	-	NP	-	NP
FPPA	M&E MW-2	13.85	10.81	NP	NP	10.78	-	NP	-	NP	10.83	-	NP	-	NP	9.49	-	NP	-	NP	9.25	-	NP	-	NP	9.12	-	NP	-	NP	10.06	-	NP	-	NP
FPPA	M&E MW-4 (2)	7.81		NP	NP	Not Found					Not Found					Not Found					Not Found					Not Found					Not Found				
FPPA	M&E MW-5 (4)	16.88	8.92	0.01 - 3.24	NP	8.30	8.25	0.05	-	NP	8.73	8.44	0.29	-	NP	6.53	6.51	0.02	-	NP	7.13	6.99	0.14	-	NP	6.92	6.91	0.01	-	NP	8.30	7.97	0.33	-	NP
FPPA	MW-6	19.03	13.49	NP	NP	11.70	-	NP	-	NP	11.82	-	NP	-	NP	12.04	-	NP	-	NP	11.87	-	NP	-	NP	11.75	-	NP	-	NP	12.19	-	NP	-	NP
FPPA	MW-101	16.00	10.94	NP	NP	10.10	-	NP	-	NP																									

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

12/13/2013
GZA File 05.00043654.00

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	
	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	
MW-4 (2) (3)		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	
MW-312S				NP	NP	0.45	0.13	trace	trace	trace	trace	0.20	0.28	
MW-313S			0.10		trace	NP	NP	NP	4.52	0.22	0.04	0.05	0.02	
MW-326S					NP	trace	0.30	trace	NP	trace	trace	0.03	0.01	
	Former Power Plant Area													
M&E MW-5 (5)	1.35	0.44			NP	0.04	1.17				3.24	3.16	1.12	
MW-102 (4) (6)	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	
MW-109 (4)	NP	NP			NP	NP		NP		NP		NP		
MW-314S			0.01	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 gauged 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

12/13/2013
GZA File 05.00043654.00

Former Tidewater Facility
Pawtucket, Rhode Island

	LNAPL Thickness (feet)											
Date	6/3/2011	6/29/2011	7/26/2011	10/18/2011	1/19/2012	4/18/2012	7/10/2012	10/15/2012	1/29/2013	4/26/2013	8/6/2013	10/29/2013
	Former Gas Plant Area											
MW-3 (1) (3)	0.80	0.03	0.15	0.05	0.02	0.03	0.02	trace	NP	NP	0.05	trace
MW-4 (2) (3)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-210 (3)	1.00	0.33	0.13	1.03	2.25	NP	0.11	NP	0.04	1.44	0.08	trace
MW-312S	0.01	0.14	0.25	0.48	0.12	0.46	1.1	0.01	0.04	0.76	0.93	0.07
MW-313S	trace	0.01	0.02	0.09	NP	NP	trace	NP	NP	NP	trace	NP
MW-326S	trace	0.01	0.02	0.03	NP	NP	NP	NP	NP	NP	NP	trace
	Former Power Plant Area											
M&E MW-5 (5)	1.20	0.40	0.13	0.05	0.08	0.04	0.05	0.29	0.02	0.14	0.01	0.33
MW-102 (4) (6)			NP	NP	NP	NP	NP	NP		NP	NP	NP
MW-103 (4)	0.09	0.01	0.02	trace	0.02	trace	trace	trace	trace	trace	trace	trace
MW-109 (4)			NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
MW-314S	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 gauged 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

12/13/2013
GZA File 05.00043654.00

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	
	Former Gas Plant Area													
MW-4 (1) (4)		NP			trace	trace	trace	trace	1.15	trace	trace	trace	trace	
MW-303			NP		trace	2.53	0.55	0.50	trace	0.88	0.15	0.55	0.75	
MW-312S				NP	trace	NP	NP	NP	NP	NP	NP	NP	NP	
MW-312D				NP	trace	NP		NP	NP		NP	NP	NP	
MW-313S			NP		NP	trace	NP	NP	NP	NP	NP	NP	NP	
MW-339D								NP	NP	NP	trace	trace	NP	
MW-341								trace	1.45	1.00	1.75	1.45	1.95	
	Former Power Plant Area													
MW-103	NP	NP			NP	trace	0.08	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		
MW-320S			0.18		NP	1.88	NP	0.20	trace	trace	trace	trace		
MW-320D			3.70		1.10	8.98	1.50	10.00	3.20	2.15	4.15	3.38		

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 gauged 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

12/13/2013
GZA File 05.00043654.00

Former Tidewater Facility
Pawtucket, Rhode Island

	DNAPL Thickness (feet)											
Date	6/3/2011	6/29/2011	7/26/2011	10/18/2011	1/19/2012	4/18/2012	7/10/2012	10/15/2012	1/29/2013	4/26/2013	8/6/2013	10/29/2013
	Former Gas Plant Area											
MW-4 (1) (4)	trace	trace	trace	trace	NP	NP	0.25	trace	trace	trace	0.7	NP
MW-303	0.13	0.30	trace	0.80	0.32	1.35	1.19	3.74	2.29	5.55	5.25	4.6
MW-312S	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
MW-313S	NP	NP	NP	NP	NP	trace	NP	trace	NP	NP	NP	NP
MW-339D	NP	NP	NP	trace	trace	trace	trace	NP	trace	trace	NP	trace
MW-341	1.50	1.25	0.95	1.68	1.48	1.38	1.08	1.5	1.4	1.95	2.57	2
	Former Power Plant Area											
MW-103	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	South Fill Area											
MW-1 (2) (3)	0.15	0.60	trace	trace	trace	trace	NP	NP	trace	trace	NP	NP
MW-320S	trace	trace	trace	0.98	0.1	0.05	trace	0.75	trace	trace	trace	0.18
MW-320D	4.50	4.50	2.50	7.05	1.1	8.67	1.05	2.56	8.45	8.15	7.85	8.14

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

File No. 05.00043654.00
1/6/2014

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	1.00	Mid	
	1/20/2012	11:05	8.14	10.3	17.3	1.00	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	
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	17.3	0.75	High	
	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
MW-103	10/30/2013	8:00	7.97	8.30	14.65	0.50	Mid	elevations adjusted for broken PVC
	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

File No. 05.00043654.00
1/6/2014

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.
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	2/17/2011	14:25	8.68	29.1	30.1	0.2	Low	
	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	
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

Pawtucket, Rhode Island

J:\ENV\43654.msk\Reports\Groundwater Monitoring Report\2013\Tables\EXCEL\43654 Groundwater Analytical Tables 4A-4D.xlsx\Table 4A - VOCs

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 08/08/2013 1308137-01 Aqueous	MW-310S 08/06/2013 1308084-06 Aqueous	MW-310D 08/06/2013 1308084-07 Aqueous	MW-201 08/07/2013 1308127-07 Aqueous	MW-208 08/08/2013 1308137-02 Aqueous	MW-312S 08/06/2013 1308084-08 Aqueous	MW-312D 08/06/2013 1308084-09 Aqueous	MW-326S 08/07/2013 1308127-01 Aqueous	MW-326D 08/07/2013 1308127-02 Aqueous	MW-333S 08/07/2013 1308127-05 Aqueous	MW-333D 08/07/2013 1308127-06 Aqueous	MW-339S 08/07/2013 1308127-04 Aqueous	MW-339D 08/07/2013 1308127-03 Aqueous	M and E MW-2 08/06/2013 1308084-02 Aqueous	MW-6 08/07/2013 1308127-08 Aqueous	MW-109 08/06/2013 1308084-01 Aqueous	MW-314S 08/06/2013 1308084-03 Aqueous	
EPA 8260	VOLATILE ORGANICS																					
	tert-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Tertiary-amyl methyl ether	mg/L	NE	NE	<0.001	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Tetrachloroethene	mg/L	NE	0.15	<0.001	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Tetrahydrofuran	mg/L	NE	NE	<0.005	<0.005	<0.5 D	<0.005	<0.005	<0.5 D	<0.5 D	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
	Toluene	mg/L	21	1.7	<0.001	<0.001	0.174 D	<0.001	0.0004 J	<0.1 D	<0.1 D	0.0025	<0.001	<0.001	0.0152	<0.001	0.0471	<0.001	0.0012	0.003	<0.001	
	trans-1,2-Dichloroethene	mg/L	79	2.8	<0.001	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	trans-1,3-Dichloropropene	mg/L	NE	NE	<0.0004	<0.0004	<0.04 D	<0.0004	<0.0004	<0.04 D	<0.04 D	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	
	Trichloroethene	mg/L	87	0.54	0.0003 J	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Trichlorofluoromethane	mg/L	NE	NE	<0.001	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Trihalomethanes (Total)	mg/L	NE	NE	<0.0036	<0.0036	<0.36 D	<0.0036	<0.0036	<0.36 D	<0.36 D	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	
	Vinyl Acetate	mg/L	NE	NE	<0.005	<0.005	<0.5 D	<0.005	<0.005	<0.5 D	<0.5 D	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
	Vinyl Chloride	mg/L	NE	0.002	<0.001	<0.001	<0.1 D	<0.001	<0.001	<0.1 D	<0.1 D	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
	Xylene O	mg/L	NE	NE	<0.001	0.0006 J	0.489 D	0.0252	0.0044	0.088 J D	0.309 D	0.0509	0.01	<0.001	0.163 D	0.0013	0.344 D	<0.001	0.0186	0.0183	<0.001	
	Xylene P,M	mg/L	NE	NE	<0.002	<0.002	0.478 D	0.0051	0.0009 J	0.027 J D	0.03 J D	0.0132	<0.002	<0.002	0.0393	0.0021	0.33 D	<0.002	0.0028	0.0128	<0.002	
	Xylenes (Total)	mg/L	NE	NE	<0.002	<0.002	0.967 D	0.0303	0.0053	0.115 J D	0.339 D	0.0641	0.01	<0.002	0.202 D	0.0034	0.674 D	<0.002	0.0213	0.0311	<0.002	
Total VOCs		mg/L	NE	NE	0.0021	0.0049	3.307	0.3987	0.0405	2.841	9.561	0.8268	0.2652	<0.6451	8.469	0.3045	5.5054	<0.6451	0.0803	0.5494	0.0007	

Notes
NE = Not Established
"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
Bold values indicate that the concentration was detected above method reporting limits
Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.
Gray shaded cells 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 2013. The January 2011 SIDR presents analytical results collected during Site Investigation activities from 2009 and 2010 and Appendix D of this report presents the analytical data collected during 2011 and 2012.

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

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-314D 08/06/2013 1308084-04 Aqueous	MW-316S 08/07/2013 1308127-17 Aqueous	MW-316D 08/07/2013 1308127-10 Aqueous	MW-337 08/07/2013 1308127-09 Aqueous	MW-107 08/07/2013 1308127-14 Aqueous	MW-318S 08/07/2013 1308127-12 Aqueous	MW-318D 08/07/2013 1308127-15 Aqueous	MW-334S 08/07/2013 1308127-13 Aqueous	MW-334D 08/07/2013 1308127-11 Aqueous
EPA 8260	VOLATILE ORGANICS												
	1,1,1,2-Tetrachloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1,1-Trichloroethane	mg/L	68	3.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	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
	1,1,2-Trichloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1-Dichloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1-Dichloroethene	mg/L	23	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1-Dichloropropene	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	1,2,3-Trichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2,3-Trichloropropane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2,4-Trichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2,4-Trimethylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	0.043	<0.001	0.0011	<0.001
	1,2-Dibromo-3-Chloropropane	mg/L	NE	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	1,2-Dibromoethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2-Dichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2-Dichloroethane	mg/L	670	0.11	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2-Dichloropropane	mg/L	140	3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,3,5-Trimethylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	0.0177	<0.001	<0.001	<0.001
	1,3-Dichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,3-Dichloropropane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,4-Dichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,4-Dioxane - Screen	mg/L	NE	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1-Chlorohexane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2,2-Dichloropropane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2-Butanone	mg/L	NE	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	2-Chlorotoluene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2-Hexanone	mg/L	NE	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4-Chlorotoluene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	4-Isopropyltoluene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	0.0012	<0.001	<0.001	<0.001
	4-Methyl-2-Pentanone	mg/L	NE	NE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
	Acetone	mg/L	NE	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benzene	mg/L	18	0.14	<0.001	<0.001	<0.001	<0.001	<0.001	0.0733	<0.001	0.002	0.0015
	Bromobenzene	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Bromochloromethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Bromodichloromethane	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
	Bromoform	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Bromomethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Carbon Disulfide	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Carbon Tetrachloride	mg/L	NE	0.07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chlorobenzene	mg/L	56	3.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chloroethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Chloroform	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chloromethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	cis-1,2-Dichloroethene	mg/L	69	2.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0012
	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
	Dibromochloromethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Dibromomethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Dichlorodifluoromethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Diethyl Ether	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Di-isopropyl ether	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Ethyl tertiary-butyl ether	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Ethylbenzene	mg/L	16	1.6	<0.001	<0.001	<0.001	<0.001	<0.001	0.0099	<0.001	<0.001	<0.001
	Hexachlorobutadiene	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
	Hexachloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Isopropylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Methyl tert-Butyl Ether	mg/L	NE	5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Methylene Chloride	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Naphthalene	mg/L	NE	2.67	<0.001	<0.001	<0.001	<0.001	<0.001	0.988 D	<0.001	0.0334	0.0132
	n-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	n-Propylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
	sec-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Styrene	mg/L	50	2.2	<0.001	<0.001	<0.001	<0.001	<0.001	0.0051	<0.001	<0.001	<0.001

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

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-314D 08/06/2013 1308084-04 Aqueous	MW-316S 08/07/2013 1308127-17 Aqueous	MW-316D 08/07/2013 1308127-10 Aqueous	MW-337 08/07/2013 1308127-09 Aqueous	MW-107 08/07/2013 1308127-14 Aqueous	MW-318S 08/07/2013 1308127-12 Aqueous	MW-318D 08/07/2013 1308127-15 Aqueous	MW-334S 08/07/2013 1308127-13 Aqueous	MW-334D 08/07/2013 1308127-11 Aqueous
EPA 8260	VOLATILE ORGANICS												
	tert-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Tertiary-amyl methyl ether	mg/L	NE	NE	0.0004 J	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Tetrachloroethene	mg/L	NE	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Tetrahydrofuran	mg/L	NE	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Toluene	mg/L	21	1.7	<0.001	<0.001	<0.001	<0.001	<0.001	0.0659	<0.001	0.001	<0.001
	trans-1,2-Dichloroethene	mg/L	79	2.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	trans-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
	Trichloroethene	mg/L	87	0.54	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0021
	Trichlorofluoromethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Trihalomethanes (Total)	mg/L	NE	NE	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036
	Vinyl Acetate	mg/L	NE	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Vinyl Chloride	mg/L	NE	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Xylene O	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	0.0374	<0.001	<0.001	<0.001
	Xylene P,M	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	0.083	<0.002	<0.002	<0.002
	Xylenes (Total)	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	0.12	<0.002	<0.002	<0.002
Total VOCs		mg/L	NE	NE	0.0004	<0.6451	<0.6451	<0.6451	<0.6451	1.3265	<0.6451	0.0375	0.018

Notes
NE = Not Established
"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
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NFA = North Fill Area
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SFA = South Fill Area
Bold values indicate that the concentration was detected above method reporting limits
Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.
Gray shaded cells 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 2013. The January 2011 SIDR presents analytical results collected during Site Investigation activities from 2009 and 2010 and Appendix D of this report presents the analytical data collected during 2011 and 2012.

TABLE 4B
GROUNDWATER INORGANIC, TPH, PAH ANALYTICAL RESULTS
Former Tidewater Facility
Pawtucket, RI

File No. 05.0043654.00
1/9/2014

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-7 08/08/2013 1308137-01 Aqueous	MW-310S 08/06/2013 1308084-06 Aqueous	MW-310D 08/06/2013 1308084-07 Aqueous	MW-201 08/07/2013 1308127-07 Aqueous	MW-208 08/08/2013 1308137-02 Aqueous	MW-312S 08/06/2013 1308084-08 Aqueous	MW-312D 08/06/2013 1308084-09 Aqueous	MW-326S 08/07/2013 1308127-01 Aqueous	MW-326D 08/07/2013 1308127-02 Aqueous	MW-333S 08/07/2013 1308127-05 Aqueous	MW-333D 08/07/2013 1308127-06 Aqueous	MW-339S 08/07/2013 1308127-04 Aqueous	MW-339D 08/07/2013 1308127-03 Aqueous
Mod. EPA 8100	TOTAL PETROLEUM HYDROCARBON																
	Hydrocarbon Content	mg/L	NE	NE	<0.19	<0.19	13.5	1.86	0.9	8.84	9.42	11.1	0.66	<0.19	6.6	0.61	9.78
EPA 8270	PAHS BY GCMS																
	2-Methylnaphthalene	mg/L	NE	NE	<0.0002	<0.0002	0.403 D	0.0004	<0.0002	0.101 D	0.189 D	0.0407 D	0.0009	<0.0002	0.0755 D	0.0323 D	0.303 D
	Acenaphthene	mg/L	NE	NE	<0.0002	0.0008	0.0914 D	0.0061	0.0023	0.221 D	0.0771 D	0.0545 D	0.0016	<0.0002	0.0584 D	0.0004	0.0591 D
	Acenaphthylene	mg/L	NE	NE	<0.0002	<0.0002	0.0454 D	0.0019	0.002	0.0336 D	0.0033 D	0.0006	<0.0002	<0.0002	0.0024 D	<0.0002	0.0789 D
	Anthracene	mg/L	NE	NE	<0.0002	<0.0002	0.0024 D	0.003	0.0005	0.0377 D	0.005 D	0.0018	<0.0002	<0.0002	0.0037 D	0.0003	0.0041 D
	Benzo [a] Anthracene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.0005	<0.00005	0.0145 D	<0.0005 D	0.0014	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Benzo [a] Pyrene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.0003	<0.00005	0.0123 D	<0.0005 D	0.0012	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Benzo [b] Fluoranthene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.0003	<0.00005	0.009 D	<0.0005 D	0.0009	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Benzo [g,h,i] Perylene	mg/L	NE	NE	<0.0002	<0.0002	<0.0019 D	<0.0002	<0.0002	0.0043 D	<0.0019 D	0.0006	<0.0002	<0.0002	<0.0021 D	<0.0002	<0.0021 D
	Benzo [k] Fluoranthene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.0001	<0.00005	0.0033 D	<0.0005 D	0.0009	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Chrysene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.0005	<0.00005	0.0137 D	<0.0005 D	0.0013	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Dibenzo [a,h] Anthracene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.00006	<0.00005	0.0012 D	<0.0005 D	0.0002	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Fluoranthene	mg/L	NE	NE	<0.0002	<0.0002	<0.0019 D	0.0014	0.0002	0.0327 D	0.0023 D	0.0027	<0.0002	<0.0002	<0.0021 D	0.0002	<0.0021 D
	Fluorene	mg/L	NE	NE	<0.0002	0.0002	0.0311 D	0.0108	0.0015	0.0811 D	0.0255 D	0.0058	<0.0002	<0.0002	0.0153 D	0.0009	0.0314 D
	Indeno [1,2,3-cd] Pyrene	mg/L	NE	NE	<0.00005	<0.00005	<0.0005 D	0.0002	<0.00005	0.0045 D	<0.0005 D	0.0006	<0.00005	<0.00005	<0.0005 D	<0.00005	<0.0005 D
	Naphthalene	mg/L	NE	2.67	0.0004	0.0002	4.57 D	0.0306 B D	0.0013	1.78 D	2.98 D	0.0068 B	0.0644 B D	0.0012 B	1.98 B D	0.129 B D	1.63 B D
	Phenanthrene	mg/L	NE	NE	<0.0002	<0.0002	0.0207 D	0.0094	0.002	0.114 D	0.0246 D	0.0031	<0.0002	<0.0002	0.0169 D	0.0014	0.0271 D
	Pyrene	mg/L	NE	NE	<0.0002	<0.0002	<0.0019 D	0.0024	0.0003	0.0439 D	0.0028 D	0.0037	<0.0002	<0.0002	<0.0021 D	0.0002	<0.0021 D
EPA 9014	SUBCONTRACTED ANALYTES																
	Dissolved Free Cyanide	mg/L	NE	NE	0.0239	0.0414	0.133	2.37 D	0.0237	0.3 D	0.523 D	0.337 D	0.766 D	0.0137	3.95 D	0.335 D	0.0761
	Total Cyanide	mg/L	NE	NE	0.0316	0.0548	0.139	3.68 D	0.0302	0.307 D	0.531 D	0.339 D	0.808 D	0.014	4.05 D	0.364 D	0.0777

Notes
NE = Not Established
"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
Bold values indicate that the concentration was detected above method reporting limits
Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.
Gray shaded cells 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 2013. The January 2011 SIDR presents analytical results collected during Site Investigation activities from 2009 and 2010 and Appendix D of this report presents the analytical data collected during 2011 and 2012.

TABLE 4B
GROUNDWATER INORGANIC, TPH, PAH ANALYTICAL RESULTS
Former Tidewater Facility
Pawtucket, RI

File No. 05.0043654.00
1/9/2014

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	M and E MW-2 08/06/2013 1308084-02 Aqueous	MW-6 08/07/2013 1308127-08 Aqueous	MW-109 08/06/2013 1308084-01 Aqueous	MW-314S 08/06/2013 1308084-03 Aqueous	MW-314D 08/06/2013 1308084-04 Aqueous	MW-316D 08/07/2013 1308127-10 Aqueous	MW-337 08/07/2013 1308127-09 Aqueous	MW-107 08/07/2013 1308127-14 Aqueous	MW-318S 08/07/2013 1308127-12 Aqueous	MW-318D 08/07/2013 1308127-15 Aqueous	MW-334S 08/07/2013 1308127-13 Aqueous	MW-334D 08/07/2013 1308127-11 Aqueous
Mod. EPA 8100	TOTAL PETROLEUM HYDROCARBON															
	Hydrocarbon Content	mg/L	NE	NE	<0.19	2.98	2.79	2.08	0.53	<0.19	1.36	<0.19	3.42	<0.19	0.52	0.33
EPA 8270	PAHS BY GCMS															
	2-Methylnaphthalene	mg/L	NE	NE	<0.0002	<0.0002	0.0309 D	<0.0002	<0.0002	<0.0009 D	<0.0009 D	<0.0009 D	0.0397 D	<0.0009 D	0.0019 D	0.0013 D
	Acenaphthene	mg/L	NE	NE	<0.0002	0.0067	0.0033	0.0025	0.0031	<0.0009 D	<0.0009 D	<0.0009 D	0.0046 D	<0.0009 D	<0.001 D	<0.0009 D
	Acenaphthylene	mg/L	NE	NE	<0.0002	0.0414 D	0.0004	0.0004	0.0002	<0.0009 D	<0.001 D	<0.0009 D	0.0129 D	<0.0009 D	<0.001 D	<0.0009 D
	Anthracene	mg/L	NE	NE	<0.0002	0.0005	0.0004	0.0004	<0.0002	<0.0009 D	<0.0009 D	<0.0009 D	0.0036 D	<0.0009 D	<0.001 D	<0.0009 D
	Benzo [a] Anthracene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Benzo [a] Pyrene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Benzo [b] Fluoranthene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Benzo [g,h,i] Perylene	mg/L	NE	NE	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0009 D	<0.0009 D	<0.0009 D	<0.0009 D	<0.0009 D	<0.001 D	<0.0009 D
	Benzo [k] Fluoranthene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Chrysene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Dibenzo [a,h] Anthracene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Fluoranthene	mg/L	NE	NE	<0.0002	0.0004	<0.0002	0.0003	<0.0002	<0.0009 D	0.0012 D	<0.0009 D	0.001 D	<0.0009 D	<0.001 D	<0.0009 D
	Fluorene	mg/L	NE	NE	<0.0002	0.0063	0.0019	0.0008	<0.0002	<0.0009 D	0.0016 D	<0.0009 D	0.0111 D	<0.0009 D	<0.001 D	<0.0009 D
	Indeno [1,2,3-cd] Pyrene	mg/L	NE	NE	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D	<0.0002 D
	Naphthalene	mg/L	NE	2.67	<0.0002	0.0018 B	0.0965 D	0.0003	0.0004	<0.0009 D	0.0014 B D	<0.0009 D	0.351 B D	<0.0009 D	0.0142 B D	0.0067 B D
	Phenanthrene	mg/L	NE	NE	<0.0002	0.0037	0.0019	<0.0002	<0.0002	<0.0009 D	<0.0009 D	<0.0009 D	0.0106 D	<0.0009 D	0.0027 D	0.0029 D
	Pyrene	mg/L	NE	NE	<0.0002	0.0003	0.0002	0.0004	0.0002	<0.0009 D	0.0012 D	<0.0009 D	<0.0009 D	<0.0009 D	<0.001 D	<0.0009 D
EPA 9014	SUBCONTRACTED ANALYTES															
	Dissolved Free Cyanide	mg/L	NE	NE	0.0395	0.263 D	0.132	0.0894	0.154	0.0129	0.267 D	0.0445	0.0119	0.0138	0.0286	0.0245
	Total Cyanide	mg/L	NE	NE	0.045	0.271 D	0.143	0.0902	0.317 D	0.0129	0.282 D	0.0472	0.0125	0.0163	0.0352	0.0256

Notes
NE = Not Established
"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.
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FPPA = Former Power Plant Area
SFA = South Fill Area
Bold values indicate that the concentration was detected above method reporting limits
Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.
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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 2013. The January 2011 SIDR presents analytical results collected during Site Investigation activities from 2009 and 2010 and Appendix D of this report presents the analytical data collected during 2011 and 2012.

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

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-314D 08/06/2013 1308084-04 Aqueous	BD-1 08/06/2013 1308084-05 Aqueous	MW-318S 08/07/2013 1308127-12 Aqueous	BD-2 08/07/2013 1308127-16 Aqueous	Trip Blank 8/6/2013 1308084-10 Aqueous	Trip Blank 08/07/2013 1308127-18 Aqueous	Trip Blank 8/8/2013 1308137-03 Aqueous
EPA 8260	VOLATILE ORGANICS										
	1,1,1,2-Tetrachloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1,1-Trichloroethane	mg/L	68	3.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1,2,2-Tetrachloroethane	mg/L	NE	NE	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
	1,1,2-Trichloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1-Dichloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1-Dichloroethene	mg/L	23	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,1-Dichloropropene	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	1,2,3-Trichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2,3-Trichloropropane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2,4-Trichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2,4-Trimethylbenzene	mg/L	NE	NE	<0.001	<0.001	0.043	0.0452	<0.001	<0.001	<0.001
	1,2-Dibromo-3-Chloropropane	mg/L	NE	0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	1,2-Dibromoethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2-Dichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2-Dichloroethane	mg/L	670	0.11	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,2-Dichloropropane	mg/L	140	3	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,3,5-Trimethylbenzene	mg/L	NE	NE	<0.001	<0.001	0.0177	0.0182	<0.001	<0.001	<0.001
	1,3-Dichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,3-Dichloropropane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,4-Dichlorobenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	1,4-Dioxane - Screen	mg/L	NE	NE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1-Chlorohexane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2,2-Dichloropropane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2-Butanone	mg/L	NE	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	2-Chlorotoluene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2-Hexanone	mg/L	NE	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	4-Chlorotoluene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	4-Isopropyltoluene	mg/L	NE	NE	<0.001	<0.001	0.0012	0.0012	<0.001	<0.001	<0.001
	4-Methyl-2-Pentanone	mg/L	NE	NE	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
	Acetone	mg/L	NE	NE	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Benzene	mg/L	18	0.14	<0.001	<0.001	0.0733	0.0772	<0.001	<0.001	<0.001
	Bromobenzene	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Bromochloromethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Bromodichloromethane	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
	Bromoform	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Bromomethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Carbon Disulfide	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Carbon Tetrachloride	mg/L	NE	0.07	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chlorobenzene	mg/L	56	3.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chloroethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Chloroform	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chloromethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	cis-1,2-Dichloroethene	mg/L	69	2.4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	cis-1,3-Dichloropropene	mg/L	NE	NE	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
	Dibromochloromethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Dibromomethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Dichlorodifluoromethane	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Diethyl Ether	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Di-isopropyl ether	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Ethyl tertiary-butyl ether	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Ethylbenzene	mg/L	16	1.6	<0.001	<0.001	0.0099	0.0097	<0.001	<0.001	<0.001
	Hexachlorobutadiene	mg/L	NE	NE	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
	Hexachloroethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Isopropylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Methyl tert-Butyl Ether	mg/L	NE	5	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Methylene Chloride	mg/L	NE	NE	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Naphthalene	mg/L	NE	2.67	<0.001	<0.001	0.988 D	0.998 D	<0.001	<0.001	0.0006 J
	n-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	n-Propylbenzene	mg/L	NE	NE	<0.001	<0.001	0.002	0.0018	<0.001	<0.001	<0.001
	sec-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Styrene	mg/L	50	2.2	<0.001	<0.001	0.0051	0.0049	<0.001	<0.001	<0.001

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

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-314D 08/06/2013 1308084-04 Aqueous	BD-1 08/06/2013 1308084-05 Aqueous	MW-318S 08/07/2013 1308127-12 Aqueous	BD-2 08/07/2013 1308127-16 Aqueous	Trip Blank 8/6/2013 1308084-10 Aqueous	Trip Blank 08/07/2013 1308127-18 Aqueous	Trip Blank 8/8/2013 1308137-03 Aqueous
EPA 8260	VOLATILE ORGANICS										
	tert-Butylbenzene	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Tertiary-amyl methyl ether	mg/L	NE	NE	0.0004 J	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Tetrachloroethene	mg/L	NE	0.15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Tetrahydrofuran	mg/L	NE	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Toluene	mg/L	21	1.7	<0.001	<0.001	0.0659	0.0658	<0.001	<0.001	<0.001
	trans-1,2-Dichloroethene	mg/L	79	2.8	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	trans-1,3-Dichloropropene	mg/L	NE	NE	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
	Trichloroethene	mg/L	87	0.54	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Trichlorofluoromethane	mg/L	NE	NE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Trihalomethanes (Total)	mg/L	NE	NE	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036
	Vinyl Acetate	mg/L	NE	NE	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Vinyl Chloride	mg/L	NE	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Xylene O	mg/L	NE	NE	<0.001	<0.001	0.0374	0.039	<0.001	<0.001	<0.001
	Xylene P,M	mg/L	NE	NE	<0.002	<0.002	0.083	0.0869	<0.002	<0.002	<0.002
	Xylenes (Total)	mg/L	NE	NE	<0.002	<0.002	0.12	0.126	<0.002	<0.002	<0.002
Total VOCs		mg/L	NE	NE	0.0004	<0.6451	1.3265	1.3479	<0.6451	<0.6451	<0.6451

Notes
NE = Not Established
"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
Bold values indicate that the concentration was detected above method reporting limits
Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.
Gray shaded cells 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 BD-1 was collected from MW-314D
Blind Duplicate sample BD-2 was collected from MW-318S
This table presents analytical results from 2013. The January 2011 SIDR presents analytical results collected during Site Investigation activities from 2009 and 2010 and Appendix D of this report presents the analytical data collected during 2011 and 2012.

TABLE 4D
GROUNDWATER INORGANIC, TPH, PAH QA/QC ANALYTICAL RESULTS
Former Tidewater Facility
Pawtucket, RI

		Units	RIDEM GB Groundwater UCL	RIDEM GB Groundwater Objective	MW-314D 08/06/2013 1308084-04 Aqueous	BD-1 08/06/2013 1308084-05 Aqueous	MW-318S 08/07/2013 1308127-12 Aqueous	BD-2 08/07/2013 1308127-16 Aqueous
Mod. EPA 8100	TOTAL PETROLEUM HYDROCARBON							
	Hydrocarbon Content	mg/L	NE	NE	0.53	0.89	3.42	3.64
EPA 8270	PAHS BY GCMS							
	2-Methylnaphthalene	mg/L	NE	NE	<0.0002	<0.0002	0.0397 D	0.0514 D
	Acenaphthene	mg/L	NE	NE	0.0031	0.0024	0.0046 D	0.0063 D
	Acenaphthylene	mg/L	NE	NE	0.0002	0.0002	0.0129 D	0.0168 D
	Anthracene	mg/L	NE	NE	<0.0002	<0.0002	0.0036 D	0.0043 D
	Benzo [a] Anthracene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Benzo [a] Pyrene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Benzo [b] Fluoranthene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Benzo [g,h,i] Perylene	mg/L	NE	NE	<0.0002	<0.0002	<0.0009 D	<0.0009 D
	Benzo [k] Fluoranthene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Chrysene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Dibenzo [a,h] Anthracene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Fluoranthene	mg/L	NE	NE	<0.0002	<0.0002	0.001 D	0.0012 D
	Fluorene	mg/L	NE	NE	<0.0002	<0.0002	0.0111 D	0.0147 D
	Indeno [1,2,3-cd] Pyrene	mg/L	NE	NE	<0.00005	<0.00005	<0.0002 D	<0.0002 D
	Naphthalene	mg/L	NE	2.67	0.0004	<0.0002	0.351 B D	0.434 B D
	Phenanthrene	mg/L	NE	NE	<0.0002	<0.0002	0.0106 D	0.0133 D
	Pyrene	mg/L	NE	NE	0.0002	<0.0002	<0.0009 D	<0.0009 D
EPA 9014	SUBCONTRACTED ANALYTES							
	Total Cyanide	mg/L	NE	NE	0.154	0.333 D	0.0119	0.0119
	Dissolved Free Cyanide	mg/L	NE	NE	0.317 D	0.337 D	0.0125	0.0122

Notes
NE = Not Established
"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
Bold values indicate that the concentration was detected above method reporting limits
Blue shaded cells indicate detection limits equal to or exceeds the GB Groundwater Objective.
Gray shaded cells 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 BD-1 was collected from MW-314D
Blind Duplicate sample BD-2 was collected from MW-318S
This table presents analytical results from 2013. The January 2011 SIDR presents analytical results collected during Site Investigation activities from 2009 and 2010 and Appendix D of this report presents the analytical data collected during 2011 and 2012.

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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-5										
			AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010		GZA July 2011	GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (5)	Note (5)			Note (2)		Note (6)		Note (2)	Note (2)	Note (2)
VOCs (ppm)					Result	DL							
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 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							
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							
Tertiary-amyl methyl ether	NE	NE											
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			<	0.188							
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-7										
			AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010		GZA July 2011		GZA July 2012
	RIDEM GB GW UCL	RIDEM GB GW Objectives							Note (6)				
VOCs (ppm)			Result	Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE			<	0.025	<	0.010		<	0.010	<0.01	<0.01
Benzene	18	0.14	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE		0.0048	<	0.001	<	0.001		<	0.001	<0.001	0.0018
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67		<0.001	<	0.002	0.0035	0.002		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2	<0.02		<	0.001	<	0.001		<	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	<0.001	<0.001
Toluene	21	1.7	<0.02		<	0.001	<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	0.0003 J
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE	<0.02	<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene P,M	NE	NE	<0.02	<0.002	<	0.002	<	0.002		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE	<0.04	<0.03	<	0.003	<	0.003		<	0.003	<0.003	<0.002
Total VOCs	NE	NE	<0.14	0.0048	<	0.188	0.0035			<	0.122	<0.6415	0.0021
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			<	0.2	<	0.2		<	0.2	<0.2	<0.19
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Acenaphthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Acenaphthylene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Fluorene	NE	NE	<0.02	<0.0003	<	0.002	<	0.002		<	0.002	<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
Naphthalene	NE	2.67	<0.02	<0.0003	<	0.002	<	0.002		<	0.002	0.001	0.0004
Phenanthrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<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
Dissolved Free Cyanide	NE	NE		<0.05	<	0.010	<	0.010		<	0.010	<0.005	0.0239
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-310S										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
			Note (4)	Note (4)	Note (4)				Note (6)				
VOCs (ppm)							Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE					<	0.01		<	0.01	<0.01	<0.01
Benzene	18	0.14					<	0.001		<	0.001	0.0029	0.0035
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE					<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6					<	0.001		<	0.001	0.0012	0.0004 J
Isopropylbenzene	NE	NE					<	0.001		<	0.001	<0.001	0.0004 J
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67					<	0.002		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2					<	0.001		<	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	<0.001
Toluene	21	1.7					<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE					<	0.001		<	0.001	<0.001	0.0006 J
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE					<	0.003		<	0.003	<0.003	<0.002
Total VOCs	NE	NE					<	0.122		<	0.122	0.0041	0.0049
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					0.41	0.2		<	0.2	<0.2	<0.19
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Acenaphthene	NE	NE					<	0.002		<	0.002	0.0004	0.0008
Acenaphthylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Fluorene	NE	NE					<	0.002		<	0.002	<0.0002	0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67					<	0.002		<	0.002	0.0004	0.0002
Phenanthrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.090	0.010		0.06	0.010	0.0531	0.0548
Dissolved Free Cyanide	NE	NE					<	0.010		<	0.010	<0.005	0.0414
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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 5D
GROUNDWATER MONITORING DATA
North Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-310D											
	AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010		GZA July 2011		GZA July 2012		GZA August 2013	
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)				Note (6)					
VOCs (ppm)							Result	DL		Result	DL	Result	Result	
1,1,1,2-Tetrachloroethane	NE	NE					<	0.025		<	0.05	<0.001	0.13 D	
1,1-Dichloroethene	23	0.007					<	0.025		<	0.05	<0.001	<0.1 D	
1,2,4-Trimethylbenzene	NE	NE					0.32	0.025		0.64	0.05	0.712	0.473 D	
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.050		<	0.10	<0.005	<0.5 D	
1,3,5-Trimethylbenzene	NE	NE					0.84	0.025		0.17	0.05	0.18	0.102 D	
4-Isopropyltoluene	NE	NE										0.017	<0.1 D	
Acetone	NE	NE					<	0.250		<	0.50	<0.01	<1 D	
Benzene	18	0.14					0.29	0.025		0.65	0.05	0.618	0.678 D	
Carbon Tetrachloride	NE	0.07					<	0.025		<	0.05	<0.001	<0.1 D	
Chloroform	NE	NE					<	0.025		<	0.05	<0.001	<0.1 D	
cis-1,2-Dichloroethene	69	2.4					<	0.025		<	0.05	<0.001	<0.1 D	
Ethylbenzene	16	1.6					0.4	0.025		0.92	0.05	1.07	0.72 D	
Isopropylbenzene	NE	NE					0.05	0.025		0.092	0.05	0.101	0.063 J D	
Methyl tert-Butyl Ether	NE	5					<	0.025		<	0.05	<0.001	<0.1 D	
Naphthalene	NE	2.67					3.9	0.050		6.8	0.10	9.8	6.6 D	
n-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.001	<0.1 D	
n-Propylbenzene	NE	NE					<	0.025		<	0.05	0.0524	<0.1 D	
sec-Butylbenzene	NE	NE					<	0.025		<	0.05	0.005	<0.1 D	
Styrene	50	2.2					<	0.025		<	0.05	<0.001	<0.1 D	
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.1 D	
Tetrachloroethene	NE	0.15					<	0.025		<	0.05	<0.001	<0.1 D	
Toluene	21	1.7					0.061	0.025		0.19	0.05	0.198	0.174 D	
Trichloroethene	87	0.54					<	0.025		<	0.05	<0.001	<0.1 D	
Vinyl Chloride	NE	0.002					<	0.025		<	0.05	<0.001	<0.1 D	
Xylene O	NE	NE					0.33	0.025		0.66	0.05	0.735	0.489 D	
Xylene P,M	NE	NE					0.29	0.050		0.67	0.10	0.775	0.478 D	
Xylenes (Total)	NE	NE					0.62	0.075		1.33	0.15	1.51	0.967 D	
Total VOCs	NE	NE					6.48			10.79		14.26	9.907	
TOTAL PETROLEUM HYDROCARBON (ppm)														
Hydrocarbon Content	NE	NE					6.8	1		8.7	0.2	11.6	13.5	
PAHS BY GCMS (ppm)														
2-Methylnaphthalene	NE	NE					0.17 D	0.05		0.2	0.01	0.394	0.403 D	
Acenaphthene	NE	NE					0.088	0.002		0.054	0.002	0.158	0.0914 D	
Acenaphthylene	NE	NE					0.027	0.002		0.023	0.002	0.064	0.0454 D	
Anthracene	NE	NE					0.010	0.002		<	0.002	<0.02	0.0024 D	
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.02	<0.0019 D	
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Chrysene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0019 D	
Fluorene	NE	NE					0.022	0.002		0.018	0.002	0.047	0.0311 D	
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D	
Naphthalene	NE	2.67					2.2 D	0.05		2.5	0.04	5.76	4.57 D	
Phenanthrene	NE	NE					0.010	0.002		0.012	0.002	0.029	0.0207 D	
Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0019 D	
INORGANICS (ppm)														
Total Cyanide	NE	NE					0.18	0.010		0.12	0.010	0.132	0.139	
Dissolved Free Cyanide	NE	NE					0.070	0.010		0.15	0.010	0.0293	0.133	
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-201										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)						Note (6)				
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE		0.0907	0.017	0.001	0.0094	0.001		0.0047	0.001	0.0019	0.0248
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.005		<	0.005	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE		0.0024	<	0.001	<	0.001		<	0.001	<0.001	0.0024
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE			<	0.025	<	0.025		<	0.025	<0.01	<0.01
Benzene	18	0.14		0.0047	0.032	0.001	0.050	0.001		0.050	0.001	0.0397	0.0948 D
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6		0.0228	0.055	0.001	0.064	0.001		0.035	0.001	0.0163	0.0658
Isopropylbenzene	NE	NE		0.0164	0.025	0.001	0.020	0.001		0.017	0.001	0.0129	0.0274
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67		0.0028	0.019	0.002	0.020	0.002		0.010	0.002	0.0032	0.0781
n-Butylbenzene	NE	NE		<0.001	0.0067	0.001	0.0062	0.001		0.0056	0.001	0.0056	0.0068
n-Propylbenzene	NE	NE		0.0149	0.018	0.001	0.018	0.001		0.015	0.001	0.0124	0.0227
sec-Butylbenzene	NE	NE		0.0031	0.0024	0.001	0.0024	0.001		0.0021	0.001	0.0018	0.0026
Styrene	50	2.2			<	0.001	<	0.001		<	0.001	<0.001	0.0043
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001
Tetrachloroethene	NE	0.15			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Toluene	21	1.7		0.0018	<	0.001	0.0024	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE		0.0113	0.021	0.001	0.0062	0.001		0.0053	0.001	0.0021	0.0252
Xylene P,M	NE	NE		0.0024	<	0.002	<	0.002		<	0.002	<0.002	0.0051
Xylenes (Total)	NE	NE		0.0137	0.021	0.003	0.0062	0.003		0.0053	0.003	0.0021	0.0303
Total VOCs	NE	NE		0.1733	0.1961	0.188	0.1986	0.188		0.1447	0.188	0.0959	0.3987
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			0.66	0.2	<	0.2		0.6	0.2	1.77	1.86
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE		0.00076	<	0.002	0.0068	0.002		<	0.002	<0.0002	0.0004
Acenaphthene	NE	NE		0.0088	0.0052	0.002	<	0.002		0.0053 D	0.002	0.006	0.0061
Acenaphthylene	NE	NE		0.00209	<	0.002	<	0.002		<	0.002	0.002	0.0019
Anthracene	NE	NE		0.0035	<	0.002	<	0.002		<	0.002	0.004	0.003
Benzo [a] Anthracene	NE	NE		0.00102	<	0.002	<	0.002		<	0.002	0.0004	0.0005
Benzo [a] Pyrene	NE	NE		0.00085	<	0.002	<	0.002		<	0.002	0.0003	0.0003
Benzo [b] Fluoranthene	NE	NE		0.00051	<	0.002	<	0.002		<	0.002	0.0003	0.0003
Benzo [g,h,i] Perylene	NE	NE		0.00035	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE		0.00063	<	0.002	<	0.002		<	0.002	<0.0002	0.0001
Chrysene	NE	NE		0.00112	<	0.002	<	0.002		<	0.002	0.0004	0.0005
Dibenzo [a,h] Anthracene	NE	NE		0.00023	<	0.002	<	0.002		<	0.002	<0.0002	0.00006
Fluoranthene	NE	NE		0.00503	<	0.002	<	0.002		<	0.002	0.002	0.0014
Fluorene	NE	NE		0.014	0.011	0.002	<	0.002		0.011 D	0.002	0.012	0.0108
Indeno [1,2,3-cd] Pyrene	NE	NE		0.00039	<	0.002	<	0.002		<	0.002	<0.0002	0.0002
Naphthalene	NE	2.67		0.012	0.0069	0.002	<	0.002		0.0042 D	0.002	0.002	0.0306 B D
Phenanthrene	NE	NE		0.012	0.085	0.002	<	0.002		0.086 D	0.002	0.012	0.0094
Pyrene	NE	NE		0.00356	<	0.002	<	0.002		<	0.002	0.003	0.0024
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
Dissolved Free Cyanide	NE	NE		<0.05	0.020	0.010	0.15	0.010		0.13	0.010	0.0067	2.37 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-208										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)						Note (6)				
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.002	<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	0.0009 J
Acetone	NE	NE			<	0.025	<	0.01		<	0.01	<0.01	<0.01
Benzene	18	0.14		0.0016	0.004	0.001	<	0.001		<	0.001	0.0017	0.0006 J
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6		0.0012	0.0033	0.001	<	0.001		0.0037	0.001	0.005	0.0096
Isopropylbenzene	NE	NE		0.0126	0.011	0.001	<	0.001		0.0037	0.001	0.0037	0.0027
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67		0.0014	0.0023	0.002	<	0.002		0.0021	0.002	0.0028	<0.001
n-Butylbenzene	NE	NE		<0.001	0.015	0.001	0.0012	0.001		0.0076	0.001	0.0154	0.0132
n-Propylbenzene	NE	NE		0.0075	0.0090	0.001	<	0.001		0.0021	0.001	0.0019	0.0012
sec-Butylbenzene	NE	NE		0.0092	0.0074	0.001	<	0.001		0.0068	0.001	0.0077	0.0066
Styrene	50	2.2			<	0.001	<	0.001		<	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	<0.001	<0.001
Toluene	21	1.7		<0.001	0.0017	0.001	<	0.001		<	0.001	<0.001	0.0004 J
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE		0.0036	0.0025	0.001	<	0.001		0.002	0.001	0.0039	0.0044
Xylene P,M	NE	NE		<0.002	<	0.002	<	0.002		<	0.002	<0.002	0.0009 J
Xylenes (Total)	NE	NE		0.0036	0.0025	0.003	<	0.003		0.002	0.003	0.0039	0.0053
Total VOCs	NE	NE		0.0371	0.056	0.185	0.0012	0.122		0.028	0.122	0.0421	0.0405
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			0.57	0.2	0.8	0.2		0.31	0.2	1	0.9
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE		<0.0002	<	0.002	0.033	0.002		<	0.002	<0.0002	<0.0002
Acenaphthene	NE	NE		0.00156	<	0.002	0.0067	0.002		<	0.002	0.003	0.0023
Acenaphthylene	NE	NE		0.0013	<	0.002	<	0.002		<	0.002	0.002	0.002
Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	0.0005	0.0005
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	0.0003	0.0002
Fluorene	NE	NE		0.00139	<	0.002	0.011	0.002		<	0.002	0.002	0.0015
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67		0.00094	<	0.002	0.0076	0.002		<	0.002	0.002	0.0013
Phenanthrene	NE	NE		0.00074	<	0.002	0.01	0.002		<	0.002	0.002	0.002
Pyrene	NE	NE		0.00027	<	0.002	<	0.002		<	0.002	0.0005	0.0003
INORGANICS (ppm)													
Total Cyanide	NE	NE		0.17	0.010	0.010	0.050	0.010		0.030	0.010	0.0299	0.0302
Dissolved Free Cyanide	NE	NE		<0.06	<	0.010	<	0.010		<	0.010	<0.005	0.0237
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-312S										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
			Note (4)	Note (4)	Note (4)		Note (3)		Note (6)	Note (3)		Note (3)	Note (3)
VOCs (ppm)							Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.025		<	0.05	<0.05	<0.1 D
1,1-Dichloroethene	23	0.007					<	0.025		<	0.05	<0.05	<0.1 D
1,2,4-Trimethylbenzene	NE	NE					0.18	0.025		0.26	0.05	0.186	0.104 D
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.050		<	0.10	<0.1	<0.5 D
1,3,5-Trimethylbenzene	NE	NE					0.05	0.025		0.063	0.05	<0.05	0.024 J D
4-Isopropyltoluene	NE	NE										<0.05	<0.1 D
Acetone	NE	NE					<	0.250		<	0.50	<0.5	<1 D
Benzene	18	0.14					0.052	0.025		0.13	0.05	0.0685	<0.1 D
Carbon Tetrachloride	NE	0.07					<	0.025		<	0.05	<0.05	<0.1 D
Chloroform	NE	NE					<	0.025		<	0.05	<0.05	<0.1 D
cis-1,2-Dichloroethene	69	2.4					<	0.025		<	0.05	<0.05	<0.1 D
Ethylbenzene	16	1.6					0.84	0.025		1.1	0.05	0.856	0.546 D
Isopropylbenzene	NE	NE					0.04	0.025		0.053	0.05	<0.05	0.022 J D
Methyl tert-Butyl Ether	NE	5					<	0.025		<	0.05	<0.05	<0.1 D
Naphthalene	NE	2.67					2.8	0.050		4.3	0.10	2.85	2.03 D
n-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.05	<0.1 D
n-Propylbenzene	NE	NE					<	0.025		<	0.05	<0.05	<0.1 D
sec-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.05	<0.1 D
Styrene	50	2.2					<	0.025		<	0.05	<0.05	<0.1 D
Tertiary-amyl methyl ether	NE	NE										<0.1	<0.1 D
Tetrachloroethene	NE	0.15					<	0.025		<	0.05	<0.05	<0.1 D
Toluene	21	1.7					<	0.025		<	0.05	<0.05	<0.1 D
Trichloroethene	87	0.54					<	0.025		<	0.05	<0.05	<0.1 D
Vinyl Chloride	NE	0.002					<	0.025		<	0.05	<0.05	<0.1 D
Xylene O	NE	NE					0.22	0.025		0.24	0.05	0.119	0.088 J D
Xylene P,M	NE	NE					<	0.050		<	0.10	<0.1	0.027 J D
Xylenes (Total)	NE	NE					0.22	0.750		0.24	0.150	0.119	0.115 J D
Total VOCs	NE	NE					4.18	3.05		6.15	6.100	4.0795	2.841
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					5.2	1		48	0.2	8.61	8.84
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					0.11	0.002		3.1 D	0.2	0.068	0.101 D
Acenaphthene	NE	NE					0.094	0.002		3.9 D	0.2	0.214	0.221 D
Acenaphthylene	NE	NE					0.028	0.002		0.4 D	0.2	0.026	0.0336 D
Anthracene	NE	NE					0.025	0.002		1.7 D	0.2	0.032	0.0377 D
Benzo [a] Anthracene	NE	NE					0.0091	0.002		0.8 D	0.2	<0.02	0.0145 D
Benzo [a] Pyrene	NE	NE					0.0073	0.002		0.45 D	0.2	<0.02	0.0123 D
Benzo [b] Fluoranthene	NE	NE					0.006	0.002		0.41 D	0.2	<0.02	0.009 D
Benzo [g,h,i] Perylene	NE	NE					0.0027	0.002		<	0.2	<0.02	0.0043 D
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.2	<0.02	0.0033 D
Chrysene	NE	NE					0.009	0.002		0.64 D	0.2	<0.02	0.0137 D
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.2	<0.02	0.0012 D
Fluoranthene	NE	NE					0.026	0.002		1.8 D	0.2	0.022	0.0327 D
Fluorene	NE	NE					0.047	0.002		2 D	0.2	0.078	0.0811 D
Indeno [1,2,3-cd] Pyrene	NE	NE					0.0025	0.002		<	0.2	<0.02	0.0045 D
Naphthalene	NE	2.67					1 D	0.02		10 D	0.2	2.58	1.78 D
Phenanthrene	NE	NE					0.088	0.002		5.6 D	0.2	0.115	0.114 D
Pyrene	NE	NE					0.035	0.002		2.5 D	0.2	0.031	0.0439 D
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.51	0.010		0.33	0.010	0.319	0.307 D
Dissolved Free Cyanide	NE	NE					<	0.010		0.040	0.010	<0.005	0.3 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-312D										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
			Note (4)	Note (4)	Note (4)				Note (6)				
VOCs (ppm)							Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D
1,1-Dichloroethene	23	0.007					<	0.025		<	0.05	<0.1	<0.1 D
1,2,4-Trimethylbenzene	NE	NE					0.31	0.025		0.42	0.05	0.432	<0.1 D
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.050		<	0.10	<0.5	<0.5 D
1,3,5-Trimethylbenzene	NE	NE					0.055	0.025		<	0.05	<0.1	0.026 J D
4-Isopropyltoluene	NE	NE										<0.1	<0.1 D
Acetone	NE	NE					<	0.250		<	0.50	<1	<1 D
Benzene	18	0.14					2.5	0.025		2.8	0.05	2.29	3.56 D
Carbon Tetrachloride	NE	0.07					<	0.025		<	0.05	<0.1	<0.1 D
Chloroform	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D
cis-1,2-Dichloroethene	69	2.4					<	0.025		<	0.05	<0.1	<0.1 D
Ethylbenzene	16	1.6					1.2	0.025		1.5	0.05	1.63	1.26 D
Isopropylbenzene	NE	NE					0.062	0.025		0.085	0.05	<0.1	0.054 J D
Methyl tert-Butyl Ether	NE	5					<	0.025		<	0.05	<0.1	<0.1 D
Naphthalene	NE	2.67					3.4	0.050		5.3	0.10	6.75	4.3 D
n-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D
n-Propylbenzene	NE	NE					<	0.025		<	0.05	<0.1	0.022 J D
sec-Butylbenzene	NE	NE					<	0.025		<	0.05	<0.1	<0.1 D
Styrene	50	2.2					<	0.025		<	0.05	<0.1	<0.1 D
Tertiary-amyl methyl ether	NE	NE										<0.1	<0.1 D
Tetrachloroethene	NE	0.15					<	0.025		<	0.05	<0.1	<0.1 D
Toluene	21	1.7					<	0.025		<	0.05	<0.1	<0.1 D
Trichloroethene	87	0.54					<	0.025		<	0.05	<0.1	<0.1 D
Vinyl Chloride	NE	0.002					<	0.025		<	0.05	<0.1	<0.1 D
Xylene O	NE	NE					0.3	0.025		0.41	0.05	0.422	0.309 D
Xylene P,M	NE	NE					<	0.050		<	0.10	<0.2	0.03 J D
Xylenes (Total)	NE	NE					0.3	0.750		0.41	0.150	0.422	0.339 D
Total VOCs	NE	NE					7.8	3.05		10.52	6.100	11.524	9.561
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					4.6	2.0		6.5	0.2	10.7	9.42
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					0.14	0.002		0.091	0.002	0.172	0.189 D
Acenaphthene	NE	NE					0.07	0.002		0.051	0.002	0.108	0.0771 D
Acenaphthylene	NE	NE					0.0075	0.002		<	0.002	<0.02	0.0033 D
Anthracene	NE	NE					0.0064	0.002		0.0035	0.002	<0.02	0.005 D
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.02	<0.0019 D
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Chrysene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Fluoranthene	NE	NE					0.003	0.002		0.0024	0.002	<0.02	0.0023 D
Fluorene	NE	NE					0.025	0.002		0.019	0.002	0.031	0.0255 D
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.02	<0.0005 D
Naphthalene	NE	2.67					2 D	0.05		0.9	0.02	2.98	2.98 D
Phenanthrene	NE	NE					0.032	0.002		0.018	0.002	0.033	0.0246 D
Pyrene	NE	NE					0.0036	0.002		0.003	0.002	<0.02	0.0028 D
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.62	0.010		0.74	0.010	0.48	0.531 D
Dissolved Free Cyanide	NE	NE					<	0.010		0.020	0.010	<0.005	0.523 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=detection limit equals or exceeds the RIDEM GB Groundwater Objective
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(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 5I
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-326S										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013	
			Note (4)	Note (4)	Note (4)				Note (6)	Note (3)			
VOCs (ppm)							Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.005		<	0.005	<0.001	<0.001
1,1-Dichloroethene	23	0.007					<	0.005		<	0.005	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE					0.073	0.005		0.140	0.005	0.0674	0.0478
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.010		<	0.010	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE					0.012	0.005		0.022	0.005	0.0098	0.0112
4-Isopropyltoluene	NE	NE										0.0019	<0.001
Acetone	NE	NE					<	0.050		<	0.050	<0.01	<0.01
Benzene	18	0.14					0.36	0.005		0.47	0.005	0.368	0.444 D
Carbon Tetrachloride	NE	0.07					<	0.005		<	0.005	<0.001	<0.001
Chloroform	NE	NE					<	0.005		<	0.005	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.005		<	0.005	<0.001	<0.001
Ethylbenzene	16	1.6					0.2	0.005		0.3	0.005	0.186	0.154 D
Isopropylbenzene	NE	NE					0.026	0.005		0.051	0.005	0.0419	0.037
Methyl tert-Butyl Ether	NE	5					<	0.005		<	0.005	<0.001	<0.001
Naphthalene	NE	2.67					0.27	0.010		0.13	0.010	0.0474	0.0516
n-Butylbenzene	NE	NE					<	0.005		<	0.005	<0.001	<0.001
n-Propylbenzene	NE	NE					0.007	0.005		0.018	0.005	0.0152	0.0128
sec-Butylbenzene	NE	NE					<	0.005		<	0.005	0.0015	<0.001
Styrene	50	2.2					<	0.005		<	0.005	<0.001	0.0018
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001
Tetrachloroethene	NE	0.15					<	0.005		<	0.005	<0.001	<0.001
Toluene	21	1.7					<	0.005		0.006	0.005	0.0022	0.0025
Trichloroethene	87	0.54					<	0.005		<	0.005	<0.001	<0.001
Vinyl Chloride	NE	0.002					<	0.005		<	0.005	<0.001	<0.001
Xylene O	NE	NE					0.13	0.005		0.16	0.005	0.0735	0.0509
Xylene P,M	NE	NE					0.015	0.010		0.021	0.010	0.012	0.0132
Xylenes (Total)	NE	NE					0.145	0.015		0.181	0.015	0.0855	0.0641
Total VOCs	NE	NE					1.093	0.62		1.318	0.62	0.8268	0.8268
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					2.7	0.2		2.3	0.2	6.43	11.1
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					0.023	0.002		0.017	0.002	0.024	0.0407 D
Acenaphthene	NE	NE					0.029	0.002		0.025	0.002	0.038	0.0545 D
Acenaphthylene	NE	NE					<	0.002		<	0.002	0.0008	0.0006
Anthracene	NE	NE					<	0.002		<	0.002	0.001	0.0018
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	0.0003	0.0014
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	0.0003	0.0012
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	0.0003	0.0009
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	0.0006
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	0.0009
Chrysene	NE	NE					<	0.002		<	0.002	0.0003	0.0013
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	0.0002
Fluoranthene	NE	NE					<	0.002		<	0.002	0.001	0.0027
Fluorene	NE	NE					0.0054	0.002		0.0043	0.002	0.006	0.0058
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	0.0006
Naphthalene	NE	2.67					0.099	0.002		0.026	0.002	0.008	0.0068 B
Phenanthrene	NE	NE					0.0037	0.002		<	0.002	0.002	0.0031
Pyrene	NE	NE					<	0.002		<	0.002	0.002	0.0037
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.69	0.010		0.49	0.010	0.297	0.339 D
Dissolved Free Cyanide	NE	NE					0.010	0.010		<	0.010	<0.005	0.337 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-326D										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)								
VOCs (ppm)							Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.0025		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007					<	0.0025		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE					0.022	0.0025		0.0027	0.001	0.0023	0.0086
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.0050		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE					0.0073	0.0025		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE					<	0.0250		<	0.010	<0.01	<0.01
Benzene	18	0.14					0.26	0.0025		0.057	0.001	0.0588	0.0809
Carbon Tetrachloride	NE	0.07					<	0.0025		<	0.001	<0.001	<0.001
Chloroform	NE	NE					<	0.0025		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.0025		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6					0.13	0.0025		0.017	0.001	0.0201	0.0401
Isopropylbenzene	NE	NE					0.016	0.0025		0.0038	0.001	0.0022	0.0026
Methyl tert-Butyl Ether	NE	5					<	0.0025		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67					0.32	0.0050		0.052	0.002	0.0448	0.123 D
n-Butylbenzene	NE	NE					<	0.0025		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE					0.0051	0.0025		0.0014	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE					<	0.0025		<	0.001	<0.001	<0.001
Styrene	50	2.2					<	0.0025		<	0.001	<0.001	<0.001
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001
Tetrachloroethene	NE	0.15					<	0.0025		<	0.001	<0.001	<0.001
Toluene	21	1.7					<	0.0025		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54					<	0.0025		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002					<	0.0025		<	0.001	<0.001	<0.001
Xylene O	NE	NE					0.034	0.0025		0.0029	0.001	0.0038	0.01
Xylene P,M	NE	NE					0.0068	0.0050		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE					0.0408	0.0075		0.0029	0.003	0.0038	0.01
Total VOCs	NE	NE					0.8012	0.305		0.1368	0.122	0.132	0.2652
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					1.2	0.2		0.27	0.2	0.45	0.66
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					0.0038	0.002		<	0.002	<0.0002	0.0009
Acenaphthene	NE	NE					0.0063	0.002		0.0022	0.002	0.001	0.0016
Acenaphthylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Fluorene	NE	NE					<	0.002		<	0.002	0.0002	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67					0.042	0.002		0.02	0.002	0.012	0.0644 B D
Phenanthrene	NE	NE					0.0026	0.002		<	0.002	0.0004	<0.0002
Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.54	0.010		0.67	0.010	0.665	0.808 D
Dissolved Free Cyanide	NE	NE					0.080	0.010		0.010	0.010	<0.005	0.766 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-333S									
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013		
			Note (4)	Note (4)	Note (4)	Note (4)						
VOCs (ppm)							Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001	<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007					<	0.001	<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE					<	0.001	0.0097	0.001	0.0136	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002	<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE									<0.001	<0.001
Acetone	NE	NE					<	0.010	<	0.010	<0.01	<0.01
Benzene	18	0.14					<	0.001	0.039	0.001	0.0287	<0.001
Carbon Tetrachloride	NE	0.07					<	0.001	<	0.001	<0.001	<0.001
Chloroform	NE	NE					<	0.001	<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.001	<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6					<	0.001	0.13	0.001	0.212	<0.001
Isopropylbenzene	NE	NE					<	0.001	0.005	0.001	0.0068	<0.001
Methyl tert-Butyl Ether	NE	5					<	0.001	<	0.001	<0.001	<0.001
Naphthalene	NE	2.67					<	0.002	0.042	0.002	0.0122	<0.001
n-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE					<	0.001	0.0015	0.001	0.0024	<0.001
sec-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
Styrene	50	2.2					<	0.001	<	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	<0.001
Toluene	21	1.7					<	0.001	0.0026	0.001	0.0014	<0.001
Trichloroethene	87	0.54					<	0.001	<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002					<	0.001	<	0.001	<0.001	<0.001
Xylene O	NE	NE					<	0.001	0.024	0.001	0.0144	<0.001
Xylene P,M	NE	NE					<	0.002	0.0048	0.002	0.0023	<0.002
Xylenes (Total)	NE	NE					<	0.003	0.029	0.003	0.0167	<0.002
Total VOCs	NE	NE					<	0.122	0.2586	0.122	0.2938	<0.6451
TOTAL PETROLEUM HYDROCARBON (ppm)												
Hydrocarbon Content	NE	NE					0.31	0.2	0.32	0.2	1.07	<0.19
PAHS BY GCMS (ppm)												
2-Methylnaphthalene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002
Acenaphthene	NE	NE					<	0.002	<	0.002	0.002	<0.0002
Acenaphthylene	NE	NE					<	0.002	<	0.002	0.001	<0.0002
Anthracene	NE	NE					<	0.002	<	0.002	0.0002	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Chrysene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE					<	0.002	<	0.002	0.0002	<0.0002
Fluorene	NE	NE					<	0.002	<	0.002	0.0006	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67					<	0.002	0.013	0.002	0.005	0.0012 B
Phenanthrene	NE	NE					<	0.002	<	0.002	0.0005	<0.0002
Pyrene	NE	NE					<	0.002	<	0.002	0.0003	<0.0002
INORGANICS (ppm)												
Total Cyanide	NE	NE					0.050	0.01	0.150	0.01	0.0815	0.014
Dissolved Free Cyanide	NE	NE					<	0.01	0.010	0.01	<0.005	0.0137
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-333D									
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013		
			Note (4)	Note (4)	Note (4)	Note (4)						
VOCs (ppm)							Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.025	<	0.025	<0.1	<0.001
1,1-Dichloroethene	23	0.007					<	0.025	<	0.025	<0.1	<0.001
1,2,4-Trimethylbenzene	NE	NE					0.19	0.025	0.43	0.025	0.344	0.353 D
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.050	<	0.050	<0.5	<0.005
1,3,5-Trimethylbenzene	NE	NE					<	0.025	<	0.025	<0.1	<0.001
4-Isopropyltoluene	NE	NE									<0.1	<0.001
Acetone	NE	NE					<	0.250	<	0.250	<1	<0.01
Benzene	18	0.14					1.2	0.025	1.6	0.025	1.77	2.67 D
Carbon Tetrachloride	NE	0.07					<	0.025	<	0.025	<0.1	<0.001
Chloroform	NE	NE					<	0.025	<	0.025	<0.1	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.025	<	0.025	<0.1	<0.001
Ethylbenzene	16	1.6					0.91	0.025	0.98	0.025	0.981	1.14 D
Isopropylbenzene	NE	NE					0.041	0.025	0.080	0.025	<0.1	0.09
Methyl tert-Butyl Ether	NE	5					<	0.025	<	0.025	<0.1	<0.001
Naphthalene	NE	2.67					1.8	0.050	3	0.050	3.55	3.96 D
n-Butylbenzene	NE	NE					<	0.025	<	0.025	<0.1	<0.001
n-Propylbenzene	NE	NE					<	0.025	0.035	0.025	<0.1	0.0346
sec-Butylbenzene	NE	NE					<	0.025	<	0.025	<0.1	<0.001
Styrene	50	2.2					<	0.025	<	0.025	<0.1	0.0039
Tertiary-amyl methyl ether	NE	NE									<0.1	<0.001
Tetrachloroethene	NE	0.15					<	0.025	<	0.025	<0.1	<0.001
Toluene	21	1.7					0.065	0.025	<	0.025	<0.1	0.0152
Trichloroethene	87	0.54					<	0.025	<	0.025	<0.1	<0.001
Vinyl Chloride	NE	0.002					<	0.025	<	0.025	<0.1	<0.001
Xylene O	NE	NE					0.36	0.025	0.34	0.025	0.205	0.163 D
Xylene P,M	NE	NE					0.27	0.050	0.093	0.050	<0.2	0.0393
Xylenes (Total)	NE	NE					0.63	0.075	0.433	0.075	0.205	0.202 D
Total VOCs	NE	NE					4.84	3.05	6.558	3.05	6.85	8.469
TOTAL PETROLEUM HYDROCARBON (ppm)												
Hydrocarbon Content	NE	NE					3.5	0.2	2	0.2	7.82	6.6
PAHS BY GCMS (ppm)												
2-Methylnaphthalene	NE	NE					0.13	0.04	0.046	0.002	0.066	0.0755 D
Acenaphthene	NE	NE					0.059	0.04	0.039	0.002	0.073	0.0584 D
Acenaphthylene	NE	NE					<	0.04	<	0.002	<0.02	0.0024 D
Anthracene	NE	NE					<	0.04	0.0027	0.002	<0.02	0.0037 D
Benzo [a] Anthracene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Benzo [a] Pyrene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Benzo [b] Fluoranthene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Benzo [g,h,i] Perylene	NE	NE					<	0.04	<	0.002	<0.02	<0.0021 D
Benzo [k] Fluoranthene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Chrysene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Dibenzo [a,h] Anthracene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Fluoranthene	NE	NE					<	0.04	<	0.002	<0.02	<0.0021 D
Fluorene	NE	NE					<	0.04	0.014	0.002	<0.02	0.0153 D
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.04	<	0.002	<0.02	<0.0005 D
Naphthalene	NE	2.67					0.96	0.04	0.98	0.02	2.07	1.98 B D
Phenanthrene	NE	NE					<	0.04	0.013	0.002	0.022	0.0169 D
Pyrene	NE	NE					<	0.04	<	0.002	<0.02	<0.0021 D
INORGANICS (ppm)												
Total Cyanide	NE	NE					0.72	0.010	1.1	0.010	0.742	4.05 D
Dissolved Free Cyanide	NE	NE					<	0.010	0.020	0.010	<0.005	3.95 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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 5M
GROUNDWATER MONITORING DATA
Former Gas Plant Area
Former Tidewater Facility
Pawtucket, Rhode Island

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-339S										
	AES 1996	VHB 2006	GZA January 2010		GZA June 2010	GZA December 2010		GZA July 2011		GZA July 2012	GZA August 2013		
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)		Note (4)						
VOCs (ppm)								Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.1	<	0.005	<0.005	<0.001
1,1-Dichloroethene	23	0.007						<	0.1	<	0.005	<0.005	<0.001
1,2,4-Trimethylbenzene	NE	NE						0.41	0.1	0.02	0.005	0.0092	0.0092
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.2	<	0.010	<0.01	<0.005
1,3,5-Trimethylbenzene	NE	NE						0.13	0.1	0.0068	0.005	<0.005	0.0032
4-Isopropyltoluene	NE	NE										<0.005	<0.001
Acetone	NE	NE						<	1.0	<	0.050	<0.05	<0.01
Benzene	18	0.14						<	0.1	<	0.005	<0.005	0.0011
Carbon Tetrachloride	NE	0.07						<	0.1	<	0.005	<0.005	<0.001
Chloroform	NE	NE						<	0.1	<	0.005	<0.005	<0.001
cis-1,2-Dichloroethene	69	2.4						<	0.1	<	0.005	<0.005	<0.001
Ethylbenzene	16	1.6						<	0.1	<	0.005	<0.005	<0.001
Isopropylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001
Methyl tert-Butyl Ether	NE	5						<	0.1	<	0.005	<0.005	<0.001
Naphthalene	NE	2.67						10	0.2	0.76	0.010	0.35	0.286 D
n-Butylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001
n-Propylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001
sec-Butylbenzene	NE	NE						<	0.1	<	0.005	<0.005	<0.001
Styrene	50	2.2						<	0.1	<	0.005	<0.005	0.0016
Tertiary-amyl methyl ether	NE	NE										<0.01	<0.001
Tetrachloroethene	NE	0.15						<	0.1	<	0.005	<0.005	<0.001
Toluene	21	1.7						<	0.1	<	0.005	<0.005	<0.001
Trichloroethene	87	0.54						<	0.1	<	0.005	<0.005	<0.001
Vinyl Chloride	NE	0.002						<	0.1	<	0.005	<0.005	<0.001
Xylene O	NE	NE						<	0.1	<	0.005	<0.005	0.0013
Xylene P,M	NE	NE						<	0.2	<	0.010	<0.01	0.0021
Xylenes (Total)	NE	NE						<	0.3	<	0.015	<0.015	0.0034
Total VOCs	NE	NE						10.54	12.5	0.7868	0.61	0.3592	0.3045
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE						15	10	1.1	0.2	0.83	0.61
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE						0.3	0.04	0.075	0.002	0.066	0.0323 D
Acenaphthene	NE	NE						<	0.04	<	0.002	<0.002	0.0004
Acenaphthylene	NE	NE						<	0.04	<	0.002	<0.002	<0.0002
Anthracene	NE	NE						<	0.04	<	0.002	<0.002	0.0003
Benzo [a] Anthracene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Benzo [a] Pyrene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Benzo [b] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Benzo [g,h,i] Perylene	NE	NE						<	0.04	<	0.002	<0.002	<0.0002
Benzo [k] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Chrysene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Fluoranthene	NE	NE						<	0.04	<	0.002	<0.002	0.0002
Fluorene	NE	NE						<	0.04	0.0029	0.002	0.002	0.0009
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.04	<	0.002	<0.002	<0.00005
Naphthalene	NE	2.67						5.5 D	0.2	0.35	0.010	0.287	0.129 B D
Phenanthrene	NE	NE						<	0.04	0.005	0.002	0.003	0.0014
Pyrene	NE	NE						<	0.04	<	0.002	<0.002	0.0002
INORGANICS (ppm)													
Total Cyanide	NE	NE						0.84	0.010	0.44	0.010	0.52	0.364 D
Dissolved Free Cyanide	NE	NE						<	0.010	0.080	0.010	<0.005	0.335 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-339D										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010	GZA December 2010		GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)		Note (4)					Note (3)	Note (3)
VOCs (ppm)								Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.05	<	0.025	<0.05	<0.001
1,1-Dichloroethene	23	0.007						<	0.05	<	0.025	<0.05	<0.001
1,2,4-Trimethylbenzene	NE	NE						0.38	0.05	0.41	0.025	0.449	0.437 D
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.10	<	0.050	<0.1	<0.005
1,3,5-Trimethylbenzene	NE	NE						0.11	0.05	0.11	0.025	0.122	0.1 D
4-Isopropyltoluene	NE	NE										<0.05	0.0087
Acetone	NE	NE						<	0.50	<	0.250	<0.5	<0.01
Benzene	18	0.14						<	0.05	0.036	0.025	0.066	0.0232
Carbon Tetrachloride	NE	0.07						<	0.05	<	0.025	<0.05	<0.001
Chloroform	NE	NE						<	0.05	<	0.025	<0.05	<0.001
cis-1,2-Dichloroethene	69	2.4						<	0.05	<	0.025	<0.05	<0.001
Ethylbenzene	16	1.6						0.20	0.05	0.24	0.025	0.26	0.19 D
Isopropylbenzene	NE	NE						<	0.05	0.046	0.025	<0.05	0.0472
Methyl tert-Butyl Ether	NE	5						<	0.05	<	0.025	<0.05	<0.001
Naphthalene	NE	2.67						3.3	0.10	2.7	0.050	3.13	3.91 D
n-Butylbenzene	NE	NE						<	0.05	<	0.025	<0.05	<0.001
n-Propylbenzene	NE	NE						<	0.05	0.034	0.025	<0.05	0.034
sec-Butylbenzene	NE	NE						<	0.05	<	0.025	<0.05	<0.001
Styrene	50	2.2						<	0.05	0.044	0.025	<0.05	0.0342
Tertiary-amyl methyl ether	NE	NE										<0.1	<0.001
Tetrachloroethene	NE	0.15						<	0.05	<	0.025	<0.05	<0.001
Toluene	21	1.7						0.058	0.05	0.041	0.025	0.05	0.0471
Trichloroethene	87	0.54						<	0.05	<	0.025	<0.05	<0.001
Vinyl Chloride	NE	0.002						<	0.05	<	0.025	<0.05	<0.001
Xylene O	NE	NE						0.41	0.05	0.038	0.025	0.418	0.344 D
Xylene P,M	NE	NE						0.46	0.10	0.047	0.050	0.446	0.33 D
Xylenes (Total)	NE	NE						0.87	0.15	0.085	0.075	0.864	0.674 D
Total VOCs	NE	NE						4.92	6.1	3.746	3.05	4.941	5.5054
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE						10	2.0	5.4	0.2	8.4	9.78
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE						0.41	0.04	0.23	0.01	0.275	0.303 D
Acenaphthene	NE	NE						0.042	0.04	0.052	0.002	0.09	0.0591 D
Acenaphthylene	NE	NE						0.079	0.04	0.069	0.002	0.105	0.0789 D
Anthracene	NE	NE						<	0.04	0.0029	0.002	<0.02	0.0041 D
Benzo [a] Anthracene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Benzo [a] Pyrene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Benzo [b] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Benzo [g,h,i] Perylene	NE	NE						<	0.04	<	0.002	<0.02	<0.0021 D
Benzo [k] Fluoranthene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Chrysene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Dibenzo [a,h] Anthracene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Fluoranthene	NE	NE						<	0.04	<	0.002	<0.02	<0.0021 D
Fluorene	NE	NE						<	0.04	0.024	0.002	0.04	0.0314 D
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.04	<	0.002	<0.02	<0.0005 D
Naphthalene	NE	2.67						1.7	0.04	1.1	0.04	2.13	1.63 B D
Phenanthrene	NE	NE						<	0.04	0.023	0.002	0.041	0.0271 D
Pyrene	NE	NE						<	0.04	<	0.002	<0.02	<0.0021 D
INORGANICS (ppm)													
Total Cyanide	NE	NE						0.29	0.010	0.13	0.010	0.0925	0.0777
Dissolved Free Cyanide	NE	NE						0.020	0.010	0.010	0.010	<0.005	0.0761
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

J

B

NE

Bold Value

(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.

"J" qualifier indicates analyte concentration is estimated

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

Regulatory Limit is not established

= concentration detected above the Method Reporting Limit.

= concentration equals or exceeds the RIDEM GB Groundwater Objective

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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		M&E MW-2										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (5)						Note (6)				
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.002	<	0.002		<	0.002	<0.002	<0.005
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE			<	0.010	<	0.010		<	0.010	<0.01	<0.01
Benzene	18	0.14		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67		<0.001	<	0.002	<	0.002		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Tertiary-amyl methyl ether	NE	NE										<0.002	<0.001
Tetrachloroethene	NE	0.15			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Toluene	21	1.7			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene P,M	NE	NE		<0.002	<	0.002	<	0.002		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE		<0.003	<	0.003	<	0.003		<	0.003	<0.003	<0.002
Total VOCs	NE	NE		<0.019	<	0.122	<	0.122		<	0.122	<0.038	<0.6451
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			<	0.2	<	0.2		<	0.2	0.27	<0.19
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Acenaphthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Acenaphthylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Fluorene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67		<0.0002	<	0.002	<	0.002		<	0.002	0.001	<0.0002
Phenanthrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<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
Dissolved Free Cyanide	NE	NE		<0.05	<	0.010	<	0.010		<	0.010	<0.005	0.0395
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:
- D

J

B

NE

Bold Value

(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.

"J" qualifier indicates analyte concentration is estimated

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

Regulatory Limit is not established

= concentration detected above the Method Reporting Limit.

= concentration equals or exceeds the RIDEM GB Groundwater Objective

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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		TB-1 / MW-6										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010		GZA July 2011	GZA July 2012	GZA August 2013
									Note (6)				
VOCs (ppm)			Result	Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001
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
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE		0.01	0.0046	0.001	0.0003	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE			<	0.025	<	0.010		0.003	0.010	<0.01	<0.01
Benzene	18	0.14	0.02	0.0495	0.0035	0.001	0.0031	0.001		0.0034	0.001	0.0213	0.0263
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6	0.03	0.0849	0.0016	0.001	0.068	0.001		0.0360	0.001	0.0243	0.0193
Isopropylbenzene	NE	NE		0.0074	<	0.001	0.008	0.001		0.0049	0.001	0.0033	0.0037
Methyl tert-Butyl Ether	NE	5		<0.001	0.005	0.001	<	0.002		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67		0.0328	0.00267	0.002	0.14	0.001		0.011	0.002	0.0035	0.0045
n-Butylbenzene	NE	NE		0.0027	<	0.001	<	0.001		0.0012	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE		0.0079	<	0.001	0.008	0.001		0.0043	0.001	0.0027	0.0027
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2	<0.02		0.0022	0.001	<	0.001		<	0.001	<0.001	<0.001
Tertiary-amyl methyl ether	NE	NE										<0.001	<0.001
Tetrachloroethene	NE	0.15			0.00015	0.001	<	0.001		<	0.001	<0.001	<0.001
Toluene	21	1.7	<0.02	0.0057	0.0017	0.001	0.004	0.001		0.0025	0.001	0.0011	0.0012
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE	0.02	0.082	<	0.001	0.079	0.001		0.042	0.001	0.0212	0.0186
Xylene P,M	NE	NE	<0.02	0.0079	<	0.002	0.026	0.001		0.0055	0.002	0.0028	0.0028
Xylenes (Total)	NE	NE	0.02	0.0899	<	0.003	0.105	0.002		0.048	0.003	0.024	0.0213
Total VOCs	NE	NE	0.08	0.2962	0.02882	0.188	0.340	0.093		0.117	0.122	0.0802	0.0803
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			2.6	0.2	3.7	0.2		1.8	0.2	3.65	2.98
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE	0.04	<0.0002	<	0.002	0.034	0.002		<	0.002	<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
Acenaphthylene	NE	NE	0.013	0.1435	0.071	0.002	0.057	0.002		0.038	0.002	0.057	0.0414 D
Anthracene	NE	NE	<0.02	0.00134	<	0.002	0.012	0.002		<	0.002	0.0006	0.0005
Benzo [a] Anthracene	NE	NE	0.06	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE	<0.02	<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE	<0.02	0.00203	<	0.002	<	0.002		<	0.002	0.0007	0.0004
Fluorene	NE	NE	0.003	0.0364	0.019	0.002	0.013	0.002		0.0081	0.002	0.01	0.0063
Indeno [1,2,3-cd] Pyrene	NE	NE	<0.02	<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<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 B
Phenanthrene	NE	NE	0.004	0.0306	0.014	0.002	0.012	0.002		0.0031	0.002	0.007	0.0037
Pyrene	NE	NE	0.01 J	0.00104	<	0.002	<	0.002		<	0.002	0.0004	0.0003
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
Dissolved Free Cyanide	NE	NE		<0.05	0.01	0.010	<	0.010		0.040	0.010	0.0063	0.263 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-109										
			AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)						Note (6)				
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
1,1-Dichloroethene	23	0.007			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
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
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.0130	<	0.002		<	0.0050	<0.05	<0.005
1,3,5-Trimethylbenzene	NE	NE		0.047	0.017	0.0025	0.02	0.001		0.0097	0.0025	0.0172	0.0057
4-Isopropyltoluene	NE	NE										0.0104	0.0046
Acetone	NE	NE			<	0.0630	<	0.010		<	0.0250	<0.1	<0.01
Benzene	18	0.14		0.0352	0.039	0.0025	0.024	0.001		0.03	0.0025	0.0402	0.115 D
Carbon Tetrachloride	NE	0.07			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
Chloroform	NE	NE		<0.001	<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
cis-1,2-Dichloroethene	69	2.4			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
Ethylbenzene	16	1.6		0.177	0.086	0.0025	<	0.001		0.057	0.0025	0.0928	0.0404
Isopropylbenzene	NE	NE		0.0418	0.038	0.0025	0.028	0.001		0.026	0.0025	0.0337	0.0194
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.0025	<	0.002		<	0.0025	<0.01	<0.001
Naphthalene	NE	2.67		0.724	0.41	0.0050	0.3	0.001		0.3	0.0050	0.559	0.163 D
n-Butylbenzene	NE	NE		<0.001	0.009	0.0025	<	0.001		0.0075	0.0025	<0.01	<0.001
n-Propylbenzene	NE	NE		0.0217	0.017	0.0025	0.015	0.001		0.014	0.0025	0.0189	0.0101
sec-Butylbenzene	NE	NE		0.0056	0.0025	0.0025	<	0.001		0.0025	0.0025	<0.01	<0.001
Styrene	50	2.2			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
Tertiary-amyl methyl ether	NE	NE										<0.01	<0.001
Tetrachloroethene	NE	0.15			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
Toluene	21	1.7		0.0058	0.0028	0.0025	0.003	0.001		0.0025	0.0025	<0.01	0.003
Trichloroethene	87	0.54			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
Vinyl Chloride	NE	0.002			<	0.0025	<	0.001		<	0.0025	<0.01	<0.001
Xylene O	NE	NE		0.0875	0.031	0.0025	0.033	0.001		0.026	0.0025	0.0457	0.0183
Xylene P,M	NE	NE		0.0875	0.026	0.0050	0.034	0.001		0.019	0.0050	0.0415	0.0128
Xylenes (Total)	NE	NE		0.175	0.057	0.0075	0.067	0.002		0.045	0.0075	0.0872	0.0311
Total VOCs	NE	NE		1.6871	0.9483	0.136	0.717	0.044		0.7042	0.09	1.1544	0.5494
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			1.1	0.2	1.5	0.2		0.66	0.2	3.62	2.79
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
Acenaphthene	NE	NE		0.00583	0.0027	0.002	0.0028	0.002		0.0023	0.002	0.004	0.0033
Acenaphthylene	NE	NE		0.00124	<	0.002	<	0.002		<	0.002	<0.002	0.0004
Anthracene	NE	NE		0.00065	<	0.002	<	0.002		<	0.002	<0.002	0.0004
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.0002
Benzo [k] Fluoranthene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.002	<0.00005
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.002	<0.00005
Fluoranthene	NE	NE		0.00033	<	0.002	<	0.002		<	0.002	<0.002	<0.0002
Fluorene	NE	NE		0.00336	<	0.002	<	0.002		<	0.002	0.002	0.0019
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.002	<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
Phenanthrene	NE	NE		0.00317	<	0.002	<	0.002		<	0.002	0.002	0.0019
Pyrene	NE	NE		0.00031	<	0.002	<	0.002		<	0.002	<0.002	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
Dissolved Free Cyanide	NE	NE		0.06	<	0.010	<	0.010		<	0.010	<0.005	0.132
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-314S									
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013		
			Note (4)	Note (4)	Note (4)	Result	DL	Note (6)	Result	DL	Result	Result
VOCs (ppm)						Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE				<	0.001		<	0.001	<0.0025	<0.001
1,1-Dichloroethene	23	0.007				<	0.001		<	0.001	<0.0025	<0.001
1,2,4-Trimethylbenzene	NE	NE				0.0017	0.001		<	0.001	0.0053	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002				<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE				<	0.001		<	0.001	<0.0025	<0.001
4-Isopropyltoluene	NE	NE									<0.0025	<0.001
Acetone	NE	NE				<	0.010		<	0.010	<0.025	<0.01
Benzene	18	0.14				<	0.001		<	0.001	<0.0025	<0.001
Carbon Tetrachloride	NE	0.07				<	0.001		<	0.001	<0.0025	<0.001
Chloroform	NE	NE				<	0.001		<	0.001	<0.0025	<0.001
cis-1,2-Dichloroethene	69	2.4				<	0.001		<	0.001	<0.0025	<0.001
Ethylbenzene	16	1.6				<	0.001		<	0.001	<0.0025	<0.001
Isopropylbenzene	NE	NE				0.0016	0.001		0.0016	0.001	0.0028	0.0007 J
Methyl tert-Butyl Ether	NE	5				<	0.001		<	0.001	<0.0025	<0.001
Naphthalene	NE	2.67				0.0041	0.002		<	0.002	0.0083	<0.001
n-Butylbenzene	NE	NE				<	0.001		<	0.001	<0.0025	<0.001
n-Propylbenzene	NE	NE				<	0.001		<	0.001	<0.0025	<0.001
sec-Butylbenzene	NE	NE				<	0.001		<	0.001	<0.0025	<0.001
Styrene	50	2.2				<	0.001		<	0.001	<0.0025	<0.001
Tertiary-amyl methyl ether	NE	NE									<0.005	<0.001
Tetrachloroethene	NE	0.15				<	0.001		<	0.001	<0.0025	<0.001
Toluene	21	1.7				<	0.001		<	0.001	<0.0025	<0.001
Trichloroethene	87	0.54				<	0.001		<	0.001	<0.0025	<0.001
Vinyl Chloride	NE	0.002				<	0.001		<	0.001	<0.0025	<0.001
Xylene O	NE	NE				0.0041	0.001		<	0.001	0.0052	<0.001
Xylene P,M	NE	NE				<	0.002		<	0.002	<0.005	<0.002
Xylenes (Total)	NE	NE				0.0041	0.003		<	0.003	0.0052	<0.002
Total VOCs	NE	NE				0.0115	0.122		0.0016	0.122	0.0216	0.0007
TOTAL PETROLEUM HYDROCARBON (ppm)												
Hydrocarbon Content	NE	NE				1.2	0.2		1.4	0.2	4.65	2.08
PAHS BY GCMS (ppm)												
2-Methylnaphthalene	NE	NE				<	0.002		<	0.002	0.0003	<0.0002
Acenaphthene	NE	NE				0.0029	0.002		<	0.002	0.003	0.0025
Acenaphthylene	NE	NE				<	0.002		<	0.002	0.0006	0.0004
Anthracene	NE	NE				<	0.002		<	0.002	0.0005	0.0004
Benzo [a] Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE				<	0.002		<	0.002	0.0002	0.0003
Fluorene	NE	NE				<	0.002		<	0.002	0.001	0.0008
Indeno [1,2,3-cd] Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67				<	0.002		<	0.002	0.004	0.0003
Phenanthrene	NE	NE				<	0.002		<	0.002	0.0005	<0.0002
Pyrene	NE	NE				<	0.002		<	0.002	0.0003	0.0004
INORGANICS (ppm)												
Total Cyanide	NE	NE				0.20	0.010		0.10	0.010	0.0637	0.0902
Dissolved Free Cyanide	NE	NE				<	0.010		0.010	0.010	<0.005	0.0894
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-314D										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
			Note (4)	Note (4)	Note (4)		Result	DL	Note (6)	Result	DL	Result	Result
VOCs (ppm)													
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007					<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002		<	0.002	<0.002	<0.005
1,3,5-Trimethylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE					<	0.010		<	0.010	<0.01	<0.01
Benzene	18	0.14					0.0016	0.001		0.001	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07					<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE					<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6					<	0.001		<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5					<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67					0.0023	0.002		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE					<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2					<	0.001		<	0.001	<0.001	<0.001
Tertiary-amyl methyl ether	NE	NE										<0.002	0.0004 J
Tetrachloroethene	NE	0.15					<	0.001		<	0.001	<0.001	<0.001
Toluene	21	1.7					<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54					<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002					<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE					<	0.001		<	0.001	<0.001	<0.001
Xylene P,M	NE	NE					<	0.002		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE					<	0.003		<	0.003	<0.003	<0.002
Total VOCs	NE	NE					0.0039	0.122		0.001	0.122	<0.038	0.0004
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					<	0.2		0.33	0.2	1.69	0.53
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Acenaphthene	NE	NE					0.0037	0.002		0.0027	0.002	0.003	0.0031
Acenaphthylene	NE	NE					<	0.002		<	0.002	0.0003	0.0002
Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.002	<0.0002	<0.0002
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Chrysene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Fluoranthene	NE	NE					<	0.002		<	0.002	0.0002	<0.0002
Fluorene	NE	NE					<	0.002		<	0.002	0.0004	<0.0002
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.002	<0.0002	<0.00005
Naphthalene	NE	2.67					<	0.002		<	0.002	0.004	0.0004
Phenanthrene	NE	NE					0.002	0.002		<	0.002	0.0002	<0.0002
Pyrene	NE	NE					<	0.002		<	0.002	0.0003	0.0002
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.46	0.010		0.32	0.010	0.144	0.317 D
Dissolved Free Cyanide	NE	NE					<	0.010		0.050	0.010	<0.005	0.154
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.
- J

"J" qualifier indicates analyte concentration is estimated
- B

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

Regulatory Limit is not established
- Bold Value

= concentration detected above the Method Reporting Limit.
- = concentration equals or exceeds the RIDEM GB Groundwater Objective
- =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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-316S										
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013			
			Note (4)	Note (4)	Note (4)			Note (6)					
VOCs (ppm)						Result	DL		Result	DL	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 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	
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	
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	<0.002	
Total VOCs	NE	NE							0.012	0.122	<0.04	<0.6451	
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-316D									
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
			Note (4)	Note (4)	Note (4)			Note (6)				
VOCs (ppm)						Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE				<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007				<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002				<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE									<0.001	<0.001
Acetone	NE	NE				<	0.010		<	0.010	<0.01	<0.01
Benzene	18	0.14				<	0.001		<	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07				<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE				<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4				<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6				<	0.001		<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5				<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67				<	0.002		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2				<	0.001		<	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	<0.001
Toluene	21	1.7				<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54				<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002				<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE				<	0.001		<	0.001	<0.001	<0.001
Xylene P,M	NE	NE				<	0.002		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE				<	0.003		<	0.003	<0.003	<0.002
Total VOCs	NE	NE				<	0.122		<	0.122	<0.04	<0.6451
TOTAL PETROLEUM HYDROCARBON (ppm)												
Hydrocarbon Content	NE	NE				<	0.2		<	0.2	<0.2	<0.19
PAHS BY GCMS (ppm)												
2-Methylnaphthalene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Acenaphthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Acenaphthylene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Benzo [a] Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [a] Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Benzo [k] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Chrysene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Fluorene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Indeno [1,2,3-cd] Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Naphthalene	NE	2.67				<	0.002		<	0.002	0.0004	<0.0009 D
Phenanthrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
INORGANICS (ppm)												
Total Cyanide	NE	NE				0.020	0.010		0.010	0.010	0.0083	0.0129
Dissolved Free Cyanide	NE	NE				<	0.010		<	0.010	<0.005	0.0129
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-337										
	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010		GZA July 2011		GZA July 2012	GZA August 2013			
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)		Note (4)						
VOCs (ppm)								Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.001	<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007						<	0.001	<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.002	<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE						<	0.010	<	0.010	<0.01	<0.01
Benzene	18	0.14						<	0.001	<	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07						<	0.001	<	0.001	<0.001	<0.001
Chloroform	NE	NE						<	0.001	<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4						<	0.001	<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6						<	0.001	<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5						<	0.001	<	0.001	<0.001	<0.001
Naphthalene	NE	2.67						<	0.002	<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
Styrene	50	2.2						<	0.001	<	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	<0.001
Toluene	21	1.7						<	0.001	<	0.001	<0.001	<0.001
Trichloroethene	87	0.54						<	0.001	<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002						<	0.001	<	0.001	<0.001	<0.001
Xylene O	NE	NE						<	0.001	<	0.001	<0.001	<0.001
Xylene P,M	NE	NE						<	0.002	<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE						<	0.003	<	0.003	<0.003	<0.002
Total VOCs	NE	NE						<	0.122	<	0.122	<0.04	<0.6451
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE						0.69	0.2	0.46	0.2	0.91	1.36
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D
Acenaphthene	NE	NE						<	0.002	<	0.002	0.0004	<0.0009 D
Acenaphthylene	NE	NE						<	0.002	<	0.002	0.0004	<0.001 D
Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D
Benzo [a] Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [a] Pyrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D
Benzo [k] Fluoranthene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Chrysene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Fluoranthene	NE	NE						<	0.002	<	0.002	0.001	0.0012 D
Fluorene	NE	NE						<	0.002	<	0.002	0.0009	0.0016 D
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Naphthalene	NE	2.67						<	0.002	<	0.002	0.0002	0.0014 B D
Phenanthrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D
Pyrene	NE	NE						<	0.002	<	0.002	0.001	0.0012 D
INORGANICS (ppm)													
Total Cyanide	NE	NE						0.20	0.010	0.19	0.010	0.127	0.282 D
Dissolved Free Cyanide	NE	NE						<	0.010	<	0.010	0.0099	0.267 D
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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 5W
GROUNDWATER MONITORING DATA
South Fill Area
Former Tidewater Facility
Pawtucket, Rhode Island

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-107										
			AES 1996	VHB 2006	GZA January 2010		GZA July 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)						Note (6)				
VOCs (ppm)				Result	Result	DL	Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007			<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002			<	0.005	<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE			<	0.025	<	0.010		<	0.010	<0.01	<0.01
Benzene	18	0.14		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5		<0.001	<	0.001	<	0.002		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67		<0.001	<	0.002	<	0.001		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2			<	0.001	<	0.001		<	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	<0.001	<0.001
Toluene	21	1.7		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002			<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE		<0.001	<	0.001	<	0.001		<	0.001	<0.001	<0.001
Xylene P,M	NE	NE		<0.002	<	0.002	<	0.001		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE		<0.003	<	0.003	<	0.002		<	0.003	<0.003	<0.002
Total VOCs	NE	NE		<0.02	<	0.188	<	0.093		<	0.122	<0.04	<0.6451
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE			<	0.2	<	0.2		<	0.2	<0.21	<0.19
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Acenaphthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Acenaphthylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Benzo [a] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [a] Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Benzo [k] Fluoranthene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Chrysene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Fluoranthene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Fluorene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Indeno [1,2,3-cd] Pyrene	NE	NE		<0.0003	<	0.002	<	0.002		<	0.002	<0.0002	<0.0002 D
Naphthalene	NE	2.67		<0.0002	<	0.002	<	0.002		<	0.002	0.002	<0.0009 D
Phenanthrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
Pyrene	NE	NE		<0.0002	<	0.002	<	0.002		<	0.002	<0.0002	<0.0009 D
INORGANICS (ppm)													
Total Cyanide	NE	NE		0.07	0.020	0.010	0.052	0.010		0.040	0.010	0.0306	0.0472
Dissolved Free Cyanide	NE	NE		<0.05	<	0.010	<	0.010		<	0.010	<0.005	0.0445
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-318S										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010		GZA December 2010	GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)				Note (6)				
VOCs (ppm)							Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.01		<	0.01	<0.05	<0.001
1,1-Dichloroethene	23	0.007					<	0.01		<	0.01	<0.05	<0.001
1,2,4-Trimethylbenzene	NE	NE					0.052	0.01		0.04	0.01	<0.05	0.043
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.02		<	0.02	<0.25	<0.005
1,3,5-Trimethylbenzene	NE	NE					0.023	0.01		0.017	0.01	<0.05	0.0177
4-Isopropyltoluene	NE	NE										<0.05	0.0012
Acetone	NE	NE					<	0.10		<	0.10	<0.5	<0.01
Benzene	18	0.14					0.088	0.01		0.089	0.01	0.063	0.0733
Carbon Tetrachloride	NE	0.07					<	0.01		<	0.01	<0.05	<0.001
Chloroform	NE	NE					<	0.01		<	0.01	<0.05	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.01		<	0.01	<0.05	<0.001
Ethylbenzene	16	1.6					0.012	0.01		0.01	0.01	<0.05	0.0099
Isopropylbenzene	NE	NE					<	0.01		<	0.01	<0.05	<0.001
Methyl tert-Butyl Ether	NE	5					<	0.01		<	0.01	<0.05	<0.001
Naphthalene	NE	2.67					1.2	0.02		1.1	0.02	1.22	0.988 D
n-Butylbenzene	NE	NE					<	0.01		<	0.01	<0.05	<0.001
n-Propylbenzene	NE	NE					<	0.01		<	0.01	<0.05	0.002
sec-Butylbenzene	NE	NE					<	0.01		<	0.01	<0.05	<0.001
Styrene	50	2.2					<	0.01		<	0.01	<0.05	0.0051
Tertiary-amyl methyl ether	NE	NE										<0.05	<0.001
Tetrachloroethene	NE	0.15					<	0.01		<	0.01	<0.05	<0.001
Toluene	21	1.7					0.076	0.01		0.072	0.01	0.0575	0.0659
Trichloroethene	87	0.54					<	0.01		<	0.01	<0.05	<0.001
Vinyl Chloride	NE	0.002					<	0.01		<	0.01	<0.05	<0.001
Xylene O	NE	NE					0.046	0.01		0.039	0.01	<0.05	0.0374
Xylene P,M	NE	NE					0.11	0.02		0.082	0.02	<0.1	0.083
Xylenes (Total)	NE	NE					0.156	0.03		0.121	0.03	<0.15	0.12
Total VOCs	NE	NE					1.61	1.22		1.449	1.22	1.3405	1.3265
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE					1	1.0		2.9	0.2	4.13	3.42
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE					0.048	0.002		0.044	0.01	0.06	0.0397 D
Acenaphthene	NE	NE					0.006	0.002		<	0.01	0.009	0.0046 D
Acenaphthylene	NE	NE					0.021	0.002		0.014	0.01	0.024	0.0129 D
Anthracene	NE	NE					0.019	0.002		<	0.01	0.007	0.0036 D
Benzo [a] Anthracene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Benzo [a] Pyrene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE					<	0.002		<	0.01	<0.002	<0.0009 D
Benzo [k] Fluoranthene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Chrysene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Fluoranthene	NE	NE					0.004	0.002		<	0.01	<0.002	0.001 D
Fluorene	NE	NE					0.014	0.002		0.012	0.01	0.02	0.0111 D
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002		<	0.01	<0.002	<0.0002 D
Naphthalene	NE	2.67					0.21	0.002		0.38	0.01	0.753	0.351 B D
Phenanthrene	NE	NE					0.018	0.002		<	0.01	0.019	0.0106 D
Pyrene	NE	NE					0.003	0.002		<	0.01	<0.002	<0.0009 D
INORGANICS (ppm)													
Total Cyanide	NE	NE					0.50	0.010		0.01	0.010	0.0359	0.0125
Dissolved Free Cyanide	NE	NE					0.020	0.010		0.01	0.010	<0.005	0.0119
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.
- J

"J" qualifier indicates analyte concentration is estimated
- B

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

Regulatory Limit is not established
- Bold Value

= concentration detected above the Method Reporting Limit.
- = concentration equals or exceeds the RIDEM GB Groundwater Objective
- =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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-318D									
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013		
			Note (4)	Note (4)	Note (4)			Note (6)				
VOCs (ppm)						Result	DL		Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE				<	0.001		<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007				<	0.001		<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002				<	0.002		<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE									<0.001	<0.001
Acetone	NE	NE				<	0.010		<	0.010	<0.01	<0.01
Benzene	18	0.14				<	0.001		<	0.001	<0.001	<0.001
Carbon Tetrachloride	NE	0.07				<	0.001		<	0.001	<0.001	<0.001
Chloroform	NE	NE				<	0.001		<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4				<	0.001		<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6				<	0.001		<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5				<	0.001		<	0.001	<0.001	<0.001
Naphthalene	NE	2.67				0.0043	0.002		<	0.002	<0.001	<0.001
n-Butylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE				<	0.001		<	0.001	<0.001	<0.001
Styrene	50	2.2				<	0.001		<	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	<0.001
Toluene	21	1.7				<	0.001		<	0.001	<0.001	<0.001
Trichloroethene	87	0.54				<	0.001		<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002				<	0.001		<	0.001	<0.001	<0.001
Xylene O	NE	NE				<	0.001		<	0.001	<0.001	<0.001
Xylene P,M	NE	NE				<	0.002		<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE				<	0.003		<	0.003	<0.003	<0.002
Total VOCs	NE	NE				<	0.122		<	0.122	<0.04	<0.6451
TOTAL PETROLEUM HYDROCARBON (ppm)												
Hydrocarbon Content	NE	NE				<	0.2		<	0.2	<0.21	<0.19
PAHS BY GCMS (ppm)												
2-Methylnaphthalene	NE	NE				<	0.002		<	0.002	0.0008	<0.0009 D
Acenaphthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Acenaphthylene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Benzo [a] Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [a] Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Benzo [k] Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Chrysene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Fluoranthene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Fluorene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
Indeno [1,2,3-cd] Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0002 D
Naphthalene	NE	2.67				<	0.002		<	0.002	0.01	<0.0009 D
Phenanthrene	NE	NE				0.002	0.002		<	0.002	<0.0002	<0.0009 D
Pyrene	NE	NE				<	0.002		<	0.002	<0.0002	<0.0009 D
INORGANICS (ppm)												
Total Cyanide	NE	NE				<	0.010		<	0.010	<0.005	0.0163
Dissolved Free Cyanide	NE	NE				<	0.010		<	0.010	<0.005	0.0138
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-334S									
	RIDEM GB GW UCL	RIDEM GB GW Objectives	AES 1996	VHB 2006	GZA January 2010	GZA June 2010	GZA December 2010	GZA July 2011	GZA July 2012	GZA August 2013		
			Note (4)	Note (4)	Note (4)	Note (4)						
VOCs (ppm)							Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE					<	0.001	<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007					<	0.001	<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE					0.0034	0.001	<	0.001	0.0016	0.0011
1,2-Dibromo-3-Chloropropane	NE	0.002					<	0.002	<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE					0.0013	0.001	<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE									<0.001	<0.001
Acetone	NE	NE					<	0.010	<	0.010	<0.01	<0.01
Benzene	18	0.14					0.0032	0.001	0.001	0.001	0.0021	0.002
Carbon Tetrachloride	NE	0.07					<	0.001	<	0.001	<0.001	<0.001
Chloroform	NE	NE					<	0.001	<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4					<	0.001	<	0.001	<0.001	<0.001
Ethylbenzene	16	1.6					<	0.001	<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5					<	0.001	<	0.001	<0.001	<0.001
Naphthalene	NE	2.67					0.071	0.002	0.014	0.002	0.0429	0.0334
n-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE					<	0.001	<	0.001	<0.001	<0.001
Styrene	50	2.2					<	0.001	<	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	<0.001
Toluene	21	1.7					0.0018	0.001	0.0011	0.001	0.0012	0.001
Trichloroethene	87	0.54					<	0.001	<	0.001	<0.001	<0.001
Vinyl Chloride	NE	0.002					<	0.001	<	0.001	<0.001	<0.001
Xylene O	NE	NE					0.0025	0.001	<	0.001	0.0013	<0.001
Xylene P,M	NE	NE					0.0042	0.002	<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE					0.0067	0.003	<	0.003	0.0013	<0.002
Total VOCs	NE	NE					0.0874	0.122	0.0161	0.122	0.0491	0.0375
TOTAL PETROLEUM HYDROCARBON (ppm)												
Hydrocarbon Content	NE	NE					0.5	0.2	0.22	0.2	0.55	0.52
PAHS BY GCMS (ppm)												
2-Methylnaphthalene	NE	NE					0.0028	0.002	<	0.002	0.003	0.0019 D
Acenaphthene	NE	NE					<	0.002	<	0.002	0.001	<0.001 D
Acenaphthylene	NE	NE					<	0.002	<	0.002	0.0002	<0.001 D
Anthracene	NE	NE					<	0.002	<	0.002	0.0005	<0.001 D
Benzo [a] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [a] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE					<	0.002	<	0.002	<0.0002	<0.001 D
Benzo [k] Fluoranthene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Chrysene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Fluoranthene	NE	NE					<	0.002	<	0.002	0.0006	<0.001 D
Fluorene	NE	NE					<	0.002	<	0.002	0.001	<0.001 D
Indeno [1,2,3-cd] Pyrene	NE	NE					<	0.002	<	0.002	<0.0002	<0.0002 D
Naphthalene	NE	2.67					0.018	0.002	0.0075	0.002	0.023	0.0142 B D
Phenanthrene	NE	NE					0.0021	0.002	<	0.002	0.003	0.0027 D
Pyrene	NE	NE					<	0.002	<	0.002	0.0004	<0.001 D
INORGANICS (ppm)												
Total Cyanide	NE	NE					0.040	0.010	0.02	0.010	0.0564	0.0352
Dissolved Free Cyanide	NE	NE					<	0.010	<	0.010	<0.005	0.0286
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.
J	"J" qualifier indicates analyte concentration is estimated
B	"B" qualifier indicates that the analyte was present in the method blank
NE	Regulatory Limit is not established
Bold Value	= concentration detected above the Method Reporting Limit.
	= concentration equals or exceeds the RIDEM GB Groundwater Objective
	=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

1/6/2014
GZA File No. 05.00043654.00

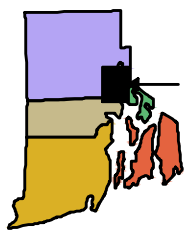
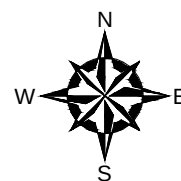
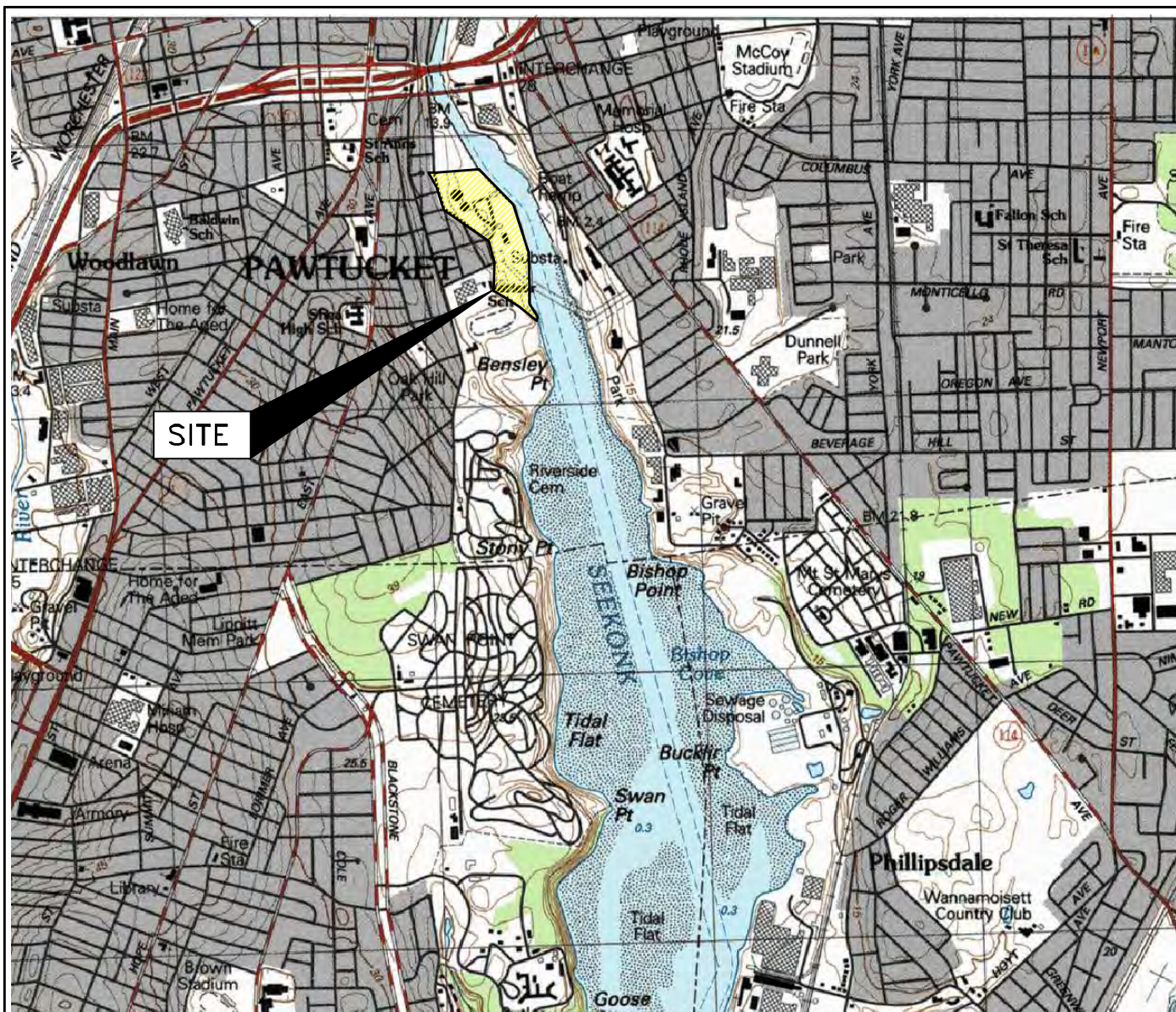
ANALYTICAL	Sample ID: Collected By: Sample Date:		MW-334D										
			AES 1996	VHB 2006	GZA January 2010		GZA June 2010	GZA December 2010		GZA July 2011		GZA July 2012	GZA August 2013
	RIDEM GB GW UCL	RIDEM GB GW Objectives	Note (4)	Note (4)	Note (4)		Note (4)						
VOCs (ppm)								Result	DL	Result	DL	Result	Result
1,1,1,2-Tetrachloroethane	NE	NE						<	0.001	<	0.001	<0.001	<0.001
1,1-Dichloroethene	23	0.007						<	0.001	<	0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	NE	NE						0.0042	0.001	<	0.001	<0.001	<0.001
1,2-Dibromo-3-Chloropropane	NE	0.002						<	0.002	<	0.002	<0.005	<0.005
1,3,5-Trimethylbenzene	NE	NE						0.0014	0.001	<	0.001	<0.001	<0.001
4-Isopropyltoluene	NE	NE										<0.001	<0.001
Acetone	NE	NE						<	0.010	<	0.010	<0.01	<0.01
Benzene	18	0.14						0.0030	0.001	0.0013	0.001	0.0013	0.0015
Carbon Tetrachloride	NE	0.07						<	0.001	<	0.001	<0.001	<0.001
Chloroform	NE	NE						<	0.001	<	0.001	<0.001	<0.001
cis-1,2-Dichloroethene	69	2.4						0.0024	0.001	0.0011	0.001	0.0012	0.0012
Ethylbenzene	16	1.6						0.0011	0.001	<	0.001	<0.001	<0.001
Isopropylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
Methyl tert-Butyl Ether	NE	5						<	0.001	<	0.001	<0.001	<0.001
Naphthalene	NE	2.67						0.11	0.002	0.0097	0.002	0.0213	0.0132
n-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
n-Propylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
sec-Butylbenzene	NE	NE						<	0.001	<	0.001	<0.001	<0.001
Styrene	50	2.2						<	0.001	<	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	<0.001
Toluene	21	1.7						0.0018	0.001	<	0.001	<0.001	<0.001
Trichloroethene	87	0.54						0.0045	0.001	0.0014	0.001	0.0023	0.0021
Vinyl Chloride	NE	0.002						<	0.001	<	0.001	<0.001	<0.001
Xylene O	NE	NE						0.0036	0.001	<	0.001	<0.001	<0.001
Xylene P,M	NE	NE						0.0040	0.002	<	0.002	<0.002	<0.002
Xylenes (Total)	NE	NE						0.0076	0.003	<	0.003	<0.003	<0.002
Total VOCs	NE	NE						0.136	0.122	0.0135	0.122	0.0261	0.018
TOTAL PETROLEUM HYDROCARBON (ppm)													
Hydrocarbon Content	NE	NE						0.47	0.2	<	0.2	0.45	0.33
PAHS BY GCMS (ppm)													
2-Methylnaphthalene	NE	NE						0.0099	0.002	<	0.002	0.002	0.0013 D
Acenaphthene	NE	NE						<	0.002	<	0.002	0.0008	<0.0009 D
Acenaphthylene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D
Anthracene	NE	NE						<	0.002	<	0.002	0.0005	<0.0009 D
Benzo [a] Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [a] Pyrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [b] Fluoranthene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Benzo [g,h,i] Perylene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0009 D
Benzo [k] Fluoranthene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Chrysene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Dibenzo [a,h] Anthracene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Fluoranthene	NE	NE						<	0.002	<	0.002	0.0007	<0.0009 D
Fluorene	NE	NE						<	0.002	<	0.002	0.001	<0.0009 D
Indeno [1,2,3-cd] Pyrene	NE	NE						<	0.002	<	0.002	<0.0002	<0.0002 D
Naphthalene	NE	2.67						<	0.002	0.0036	0.002	0.008	0.0067 B D
Phenanthrene	NE	NE						0.002	0.002	<	0.002	0.003	0.0029 D
Pyrene	NE	NE						<	0.002	<	0.002	0.0005	<0.0009 D
INORGANICS (ppm)													
Total Cyanide	NE	NE						0.35	0.010	0.02	0.010	0.0326	0.0256
Dissolved Free Cyanide	NE	NE						0.060	0.010	<	0.010	<0.005	0.0245
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.
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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



QUADRANGLE LOCATION

SOURCE:

**BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
PROVIDENCE, RHODE ISLAND (1987)**

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY MAPTECH. INC.

CONTOUR ELEVATIONS REFERENCE NGVD 29,
CONTOURS ARE SHOWN IN METERS AT 3 METER INTERVALS

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'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. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND

LOCUS PLAN

PREPARED BY:



GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:

NATIONAL GRID

PROJ MGR: MSK

REVIEWED BY: MSK

CHECKED BY: JJC

FIGURE

DESIGNED BY: SDN

DRAWN BY: CRD

SCALE: AS NOTED

1

DATE:

2014

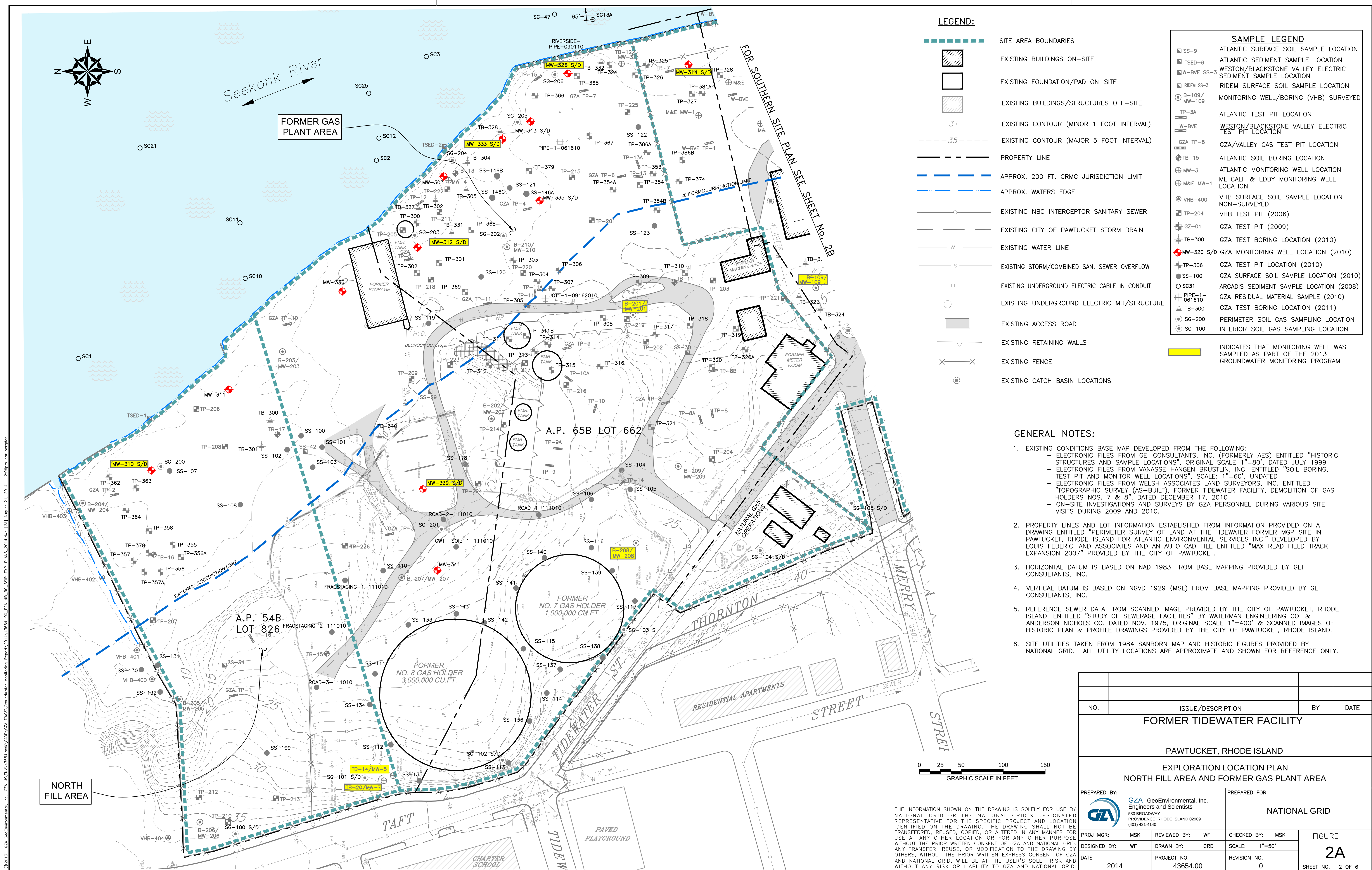
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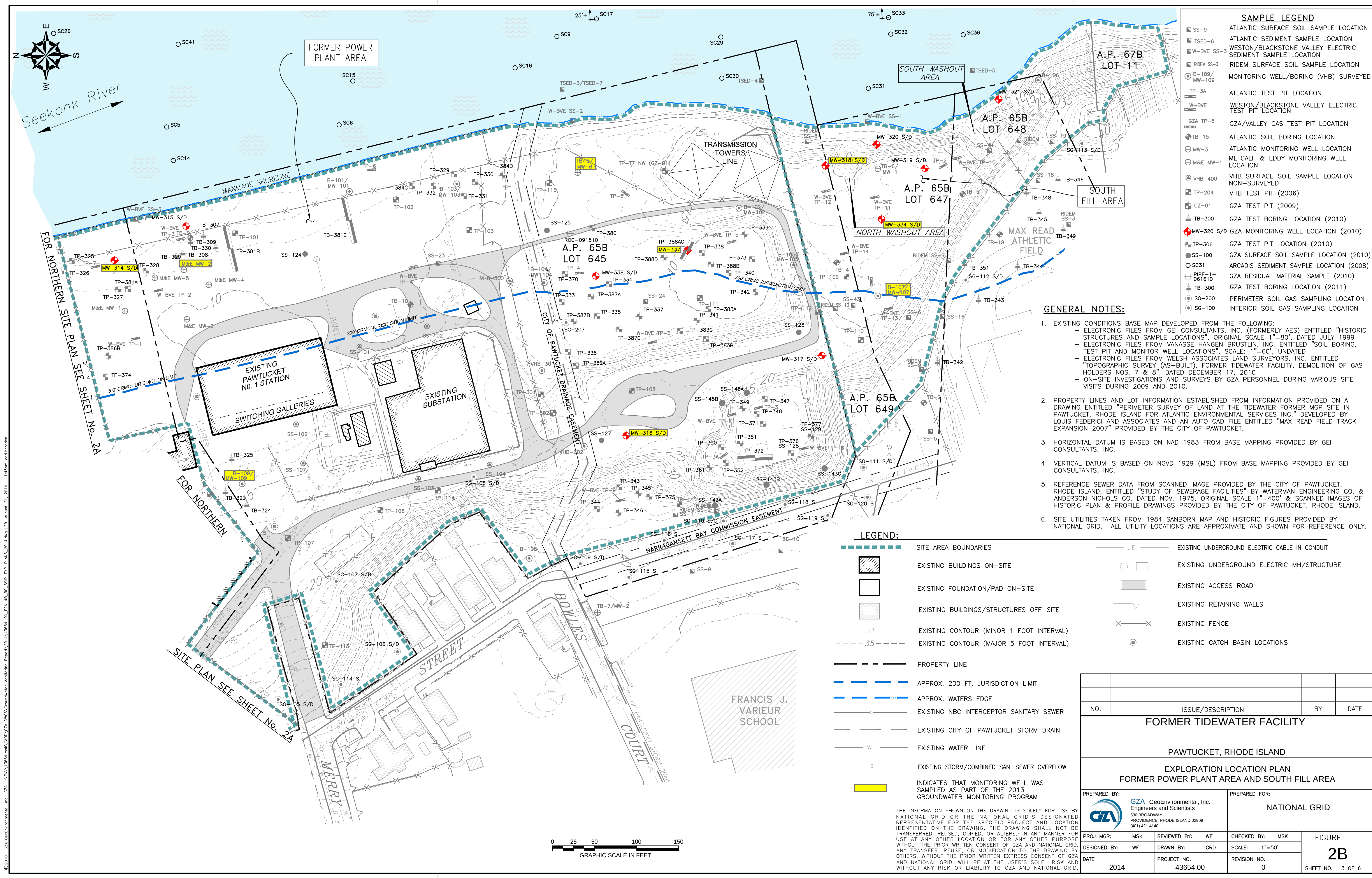
43654.20

REVISION NO.

0

SHEET NO. 1 OF 5





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-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)
MW-320 S/D	GZA MONITORING WELL LOCATION (2010)
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)
TB-300	GZA TEST BORING LOCATION (2011)
SG-200	PERIMETER SOIL GAS SAMPLING LOCATION
SG-100	INTERIOR SOIL GAS SAMPLING LOCATION

GENERAL NOTES:

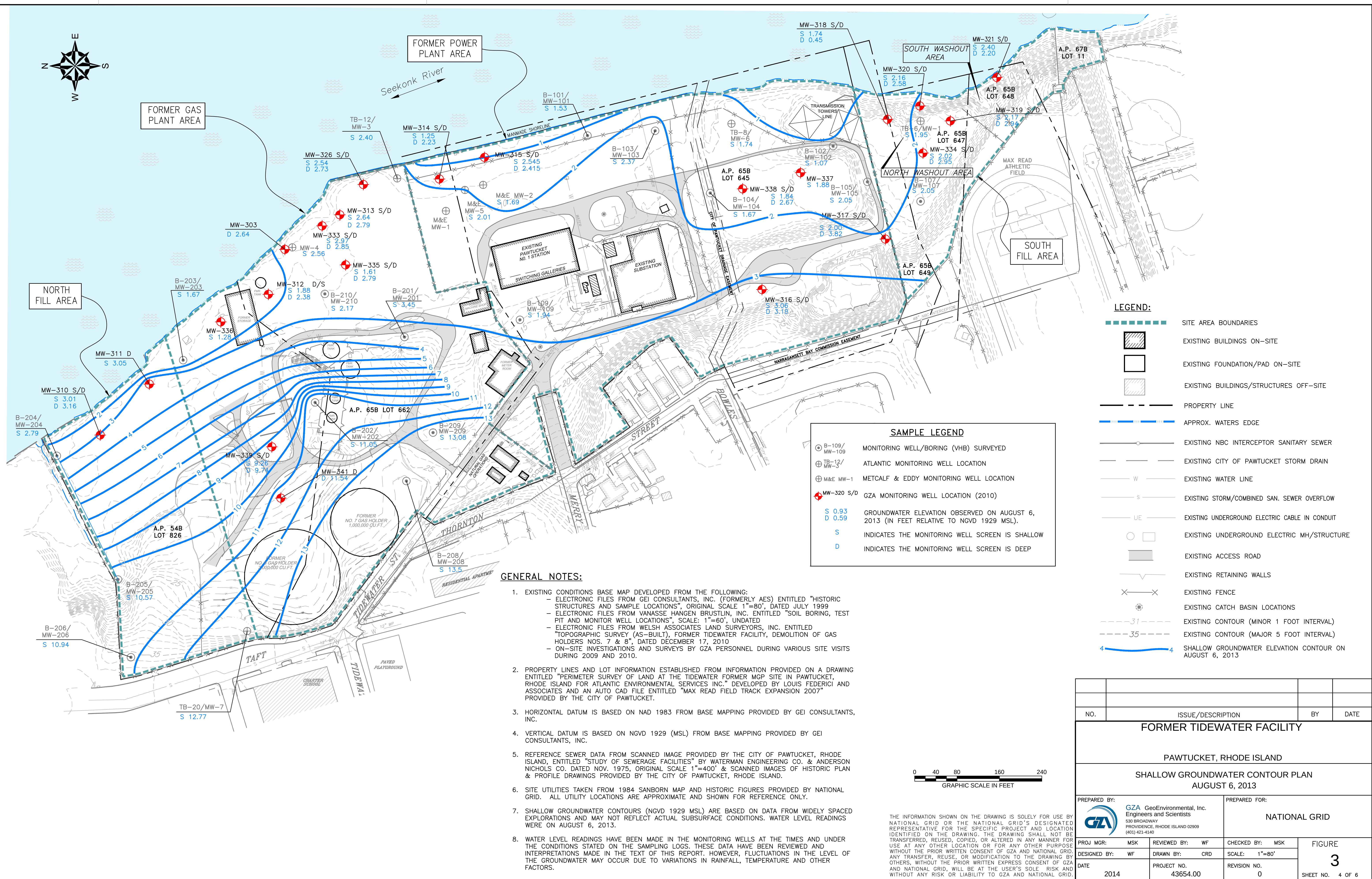
- EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
 - ELECTRONIC FILES FROM GEI CONSULTANTS, INC. (FORMERLY AES) ENTITLED "HISTORIC STRUCTURES AND SAMPLE LOCATIONS", ORIGINAL SCALE 1"=80', DATED JULY 1999
 - ELECTRONIC FILES FROM VANASSE HANGEN BRUSTLIN, INC. ENTITLED "SOIL BORING, TEST PIT 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.
- 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.
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- 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:

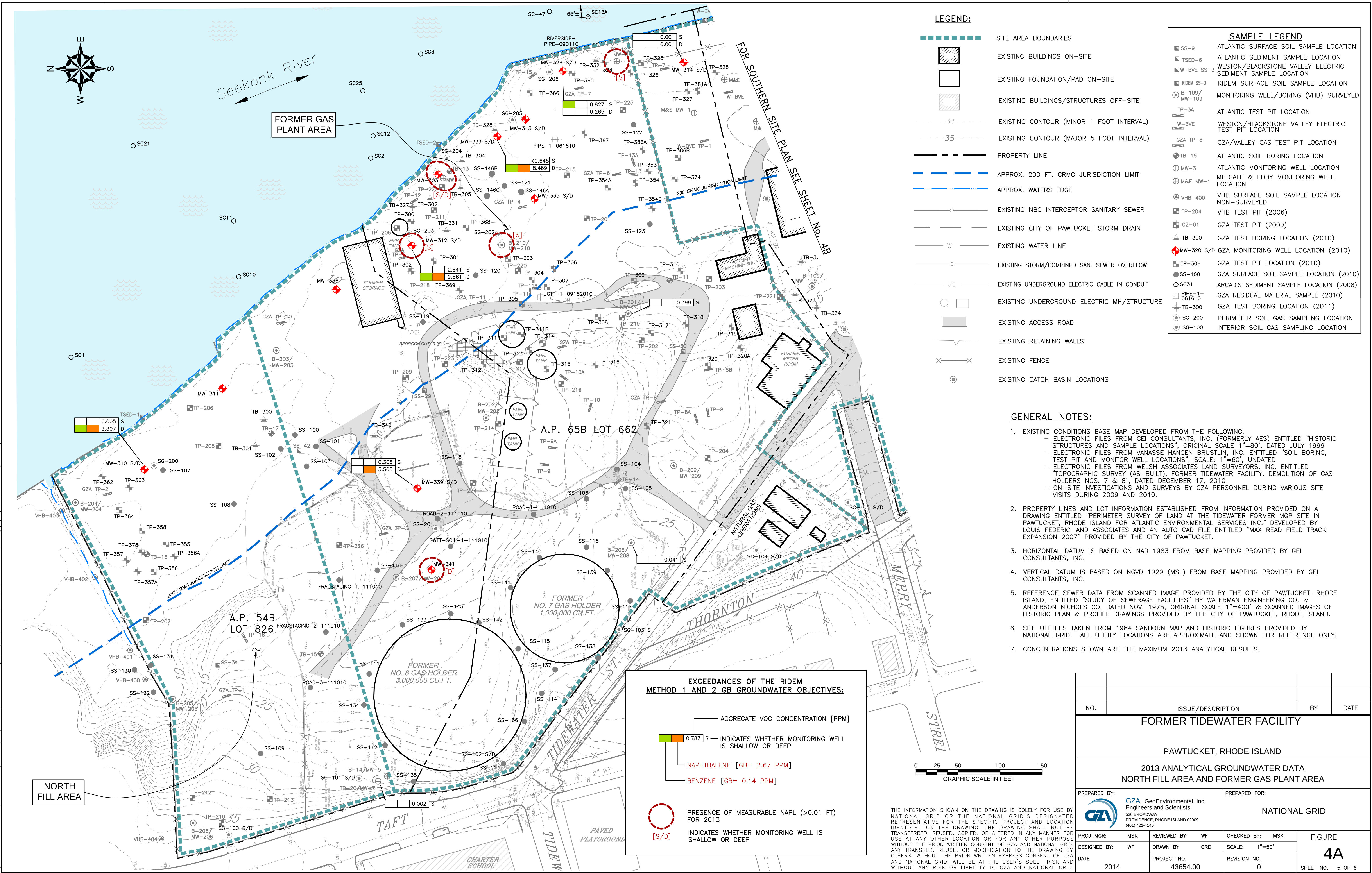
---	SITE AREA BOUNDARIES	---	EXISTING UNDERGROUND ELECTRIC CABLE IN CONDUIT
---	EXISTING BUILDINGS ON-SITE	---	EXISTING UNDERGROUND ELECTRIC MH/STRUCTURE
---	EXISTING FOUNDATION/PAD ON-SITE	---	EXISTING ACCESS ROAD
---	EXISTING BUILDINGS/STRUCTURES OFF-SITE	---	EXISTING RETAINING WALLS
---	EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)	---	EXISTING FENCE
---	EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)	---	EXISTING CATCH BASIN LOCATIONS
---	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		
---	INDICATES THAT MONITORING WELL WAS SAMPLED AS PART OF THE 2013 GROUNDWATER MONITORING PROGRAM		

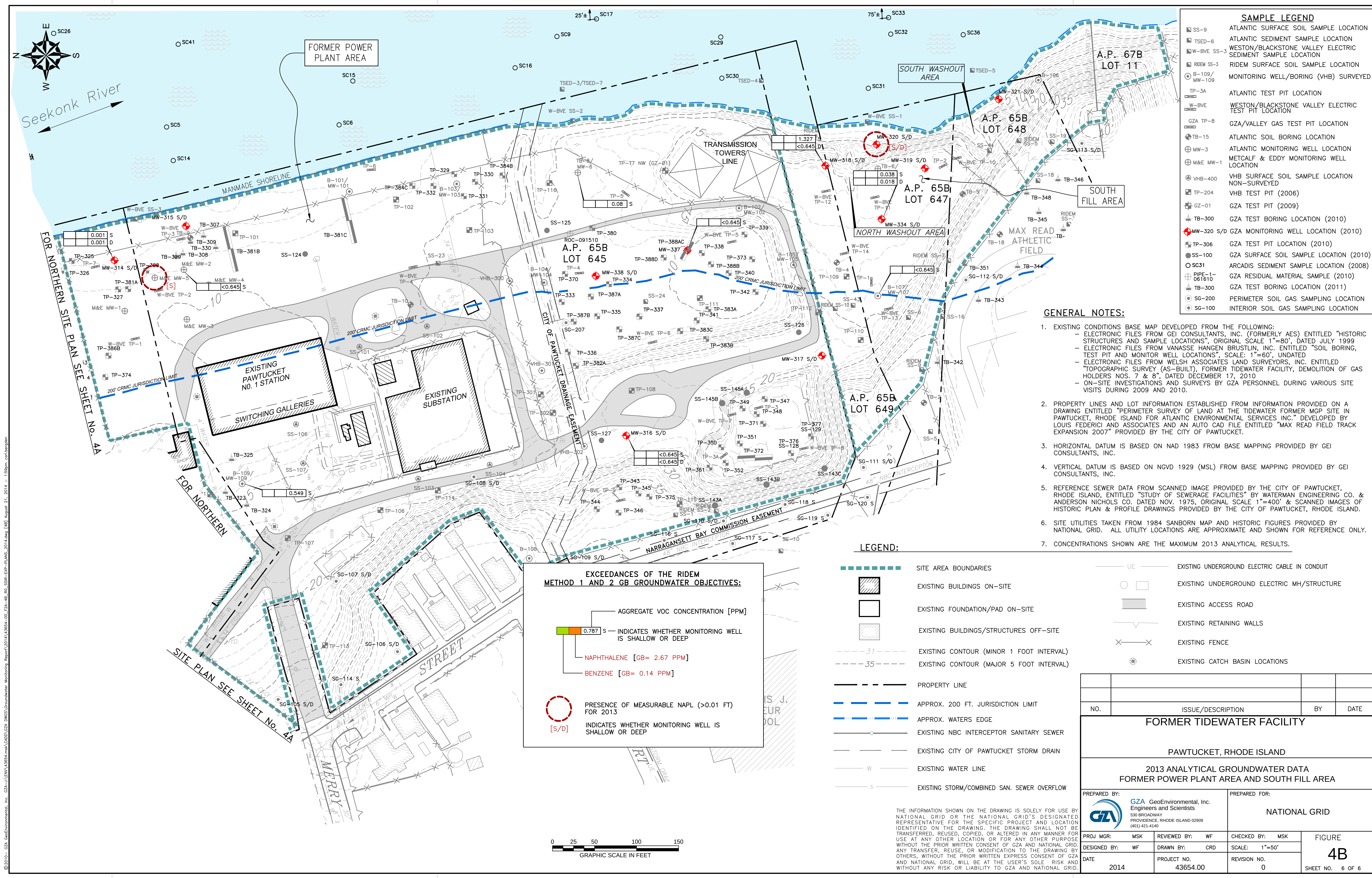
THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR 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.

NO.	ISSUE/DESCRIPTION	BY	DATE
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: NATIONAL GRID	
PROJ MGR: MSK	REVIEWED BY: WF	CHECKED BY: MSK	FIGURE
DESIGNED BY: WF	DRAWN BY: CRD	SCALE: 1"=50'	2B
DATE: 2014	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 3 OF 6



2013- GZA GeoEnvironmental, Inc. GZA-ENV-13054-ma-C001 GZA DWS Groundwater Monitoring Report 2013-13054-00_F4-4B-RO-SSR-EPE-PLANS-2014.dwg [4] August 21, 2014 - 2:00pm caribang





© 2010 - GZA GeoEnvironmental, Inc. GZA-J:\ENVA\33654.mxd\0007\GZA_DWSS\Groundwater Monitoring Report\2014\33654-00_FPA-4B_RI_SSHE-EXP-PLANS-2014.dwg [48] August 21, 2014 - 1:59pm carl.bangden

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-8 GZA/VALLEY GAS TEST PIT LOCATION
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- 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)
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- 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)
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- SG-200 PERIMETER SOIL GAS SAMPLING LOCATION
- SG-100 INTERIOR SOIL GAS SAMPLING LOCATION

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- CONCENTRATIONS SHOWN ARE THE MAXIMUM 2013 ANALYTICAL RESULTS.

LEGEND:

- SITE AREA BOUNDARIES
- EXISTING BUILDINGS ON-SITE
- EXISTING FOUNDATION/PAD ON-SITE
- EXISTING BUILDINGS/STRUCTURES OFF-SITE
- EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
- EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
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- EXISTING NBC INTERCEPTOR SANITARY SEWER
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- EXISTING WATER LINE
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- EXISTING UNDERGROUND ELECTRIC MH/STRUCTURE
- EXISTING ACCESS ROAD
- EXISTING RETAINING WALLS
- EXISTING FENCE
- EXISTING CATCH BASIN LOCATIONS

EXCEEDANCES OF THE RIDEM METHOD 1 AND 2 GB GROUNDWATER OBJECTIVES:

AGGREGATE VOC CONCENTRATION [PPM]

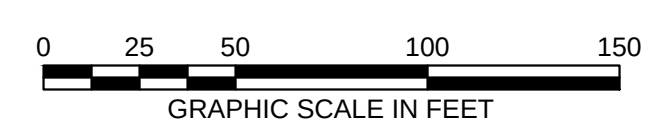
0.787 S INDICATES WHETHER MONITORING WELL IS SHALLOW OR DEEP

NAPHTHALENE [GB= 2.67 PPM]

BENZENE [GB= 0.14 PPM]

PRESENCE OF MEASURABLE NAPL (>0.01 FT) FOR 2013

INDICATES WHETHER MONITORING WELL IS SHALLOW OR DEEP



FORMER TIDEWATER FACILITY			
PAWTUCKET, RHODE ISLAND			
2013 ANALYTICAL GROUNDWATER DATA 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: NATIONAL GRID	
PROJ MGR: MSK	REVIEWED BY: WF	CHECKED BY: MSK	FIGURE
DESIGNED BY: WF	DRAWN BY: CRD	SCALE: 1"=50'	4B
DATE: 2014	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 6 OF 6

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.

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.

J:\ENV\43654.msk\Reports\Groundwater Monitoring Report\2012\Appendix A - Limitations\43654 Limitations-Appendix A.docx

APPENDIX B

GROUNDWATER SAMPLING LOGS

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/28/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID: MW-7

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) 14.5 to 24.5 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Submersible Pump Start Time: 12:00 Stop Time: 12:40

Depth: Depth to 27.50 feet Height of GW Column: 7.25 feet Average Flow Rate: 375 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3.6 Gal.

Water: 20.25 feet Total Volume Purged: 4 Gal.

SAMPLING INFORMATION

Equipment: Submersible Pump Time: 12:30

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: -
 Clarity: -
 : Odor: -

FIELD ANALYSIS DATA

+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft		
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
12:07	7.19	14.8	0.90	3.65	144.4	32.4	20.27
12:10	7.01	14.4	0.90	3.75	146.3	23.3	20.28
12:13	6.92	14.9	0.90	3.72	146.8	19.3	20.25
12:16	6.74	14.6	0.90	3.88	148.2	14.2	20.25
12:19	6.65	14.8	0.90	3.93	152	10.3	20.25
12:21	6.63	14.7	0.90	4.09	153.8	5.1	20.25
12:24	6.61	14.5	0.90	4.16	156	4.5	20.25
12:27	6.63	14.6	0.90	4.22	158.3	3.9	20.25

NOTES

Notes: Sampling depth in screen: 19.5 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/27/2011
 Sampler: MJB

WELL INFORMATION

Monitoring Well ID: MW-310S

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) 5 to 15 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 9:15 Stop Time: 11:45

Depth: Depth to 16.80 feet Height of GW Column: 7.78 feet Average Flow Rate: 200 ml/min

Product: Depth to - feet Three Times the Standing Volume: 4.02 Gal.

Water: 8.42 feet Total Volume Purged: 4.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 10:30

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
 Clarity: Clear
 : Odor: Moderate Coal tar-like

FIELD ANALYSIS DATA

+/-0.1		+/-3%		+/-3%		+/-10%		+/-10mV		DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)				
9:56	6.36	13.50	0.387	0.27	-45	14.9	9.20				
1001	6.36	13.70	0.389	0.3	-48	13.9	9.22				
1006	6.36	14.0	0.389	0.27	-55	12.2	9.22				
1011	6.36	19.9	0.384	0.25	-61	12	9.22				
1021	6.40	14.0	0.383	0.25	-61	10	9.22				
1025	6.39	14.0	0.383	0.28	-65	9.5	9.22				
1027	6.38	14.0	0.383	0.25	-67	9.2	9.22				

NOTES

Notes: Iron in purge water.
 Sampling depth in screen: 10 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-310D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

22 bgs) to 32

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 9:20 Stop Time: 10:50

Depth: Depth to 36.20 feet Height of GW Column: 28.61 feet Average Flow Rate: 200 ml/min

Product: Depth to - feet Three Times the Standing Volume: 13.73 Gal.

Water: 7.54 feet Total Volume Purged: 4.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 10:50

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
Clarity: Clear
Odor: Moderate Coal tar-like odor

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV		DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
10:35	6.91	13.2	0.655	0.23	-82	11.70	10.24
10:40	7.04	13.2	0.556	0.18	-105	8.03	10.24
10:45	7.06	13.2	0.555	0.18	-107	8.52	10.24
10:49	7.06	13.3	0.56	0.18	-108	7.95	10.24

NOTES

Notes: Sampling depth in screen: 27 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: SDN

WELL INFORMATION

Monitoring Well ID MW-201

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"
3 bgs): to 13

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 12:40 Stop Time: 14:05

Depth: Depth to 15.00 feet Height of GW Column: 1.79 feet Average Flow Rate: 400 ml/min

Product: Depth to - feet Three Times the Standing Volume: 0.875 Gal.

Water: 13.21 feet Total Volume Purged: 8.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 14:00

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: Yellow
Clarity: -
: Odor: Slight sulfur odor

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV		DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1339	8.07	16.3	1.08	0.92	-180.5	8.11	13.95
1340	7.96	16.0	1.08	0.93	-139	7.1	13.95
1343	7.79	15.9	1.08	0.92	-190.8	0.68	13.95
1346	7.70	15.9	1.08	0.93	-191.7	-	-
1349	7.64	15.9	1.08	0.95	-193.1	-	-
1352	7.59	15.8	1.08	0.97	-194.2	-	-
1355	7.56	15.8	1.08	0.98	-196.1	-	-

NOTES

Notes: Sampling depth in screen: 12 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: SDN

WELL INFORMATION

Monitoring Well ID MW-208

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

10 bgs) to 20

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 10:05 Stop Time: 11:50

Depth: Depth to 22.65 feet Height of GW Column: 0.85 feet Average Flow Rate: 175 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3.29 Gal.

Water: 15.80 feet Total Volume Purged: 4 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 11:45

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Slight rust
Clarity: Slight
: Odor: -

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
11:29	7.14	16.1	0.66	0.61	-48.5	17.6	15.85
11:33	7.10	16.8	0.66	0.67	-51.6	19.0	15.85
11:36	7.00	15.7	0.66	0.58	-53.8	14.5	15.85
11:39	6.90	15.8	0.66	0.55	-56	12.1	15.85
11:42	6.93	15.8	0.66	0.53	-57.7	11.1	15.85

NOTES

Notes: Sampling depth in screen: 15 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: SDN

WELL INFORMATION

Monitoring Well ID: **MW-312S**

Measuring Point: PVC ☒ Well Construction: PVC ☒ Well Locked: Yes ☒
TOC ☐ Other ☐ No ☐

Screened Interval (feet bgs): to
Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Peristaltic Pump Start Time: 14:50 Stop Time: 16:10

Well Depth: 23.50 feet Height of GW Column: 14.75 feet Average Flow Rate: 450 ml/min

Depth to Product: 8.5 feet Three Times the Standing Volume: 7.08 Gal.

Depth to Water: 8.75 feet Total Volume Purged: 7.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 16:00

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Yellow
Clarity: -
Odor: Fuel oil-like

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV		DD<0.3ft.
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
15:36	6.14	17.4	2.45	1.52	-95	<5	8.75
15:40	6.14	17.2	2.45	1.61	-97	<5	-
15:43	6.15	17.5	2.44	1.52	-98	<5	-
15:46	6.14	17.6	2.44	1.43	-99	<5	-

NOTES

Notes: 0.25' of LNAPL (Fuel Oil).
Used Horiba due to presence of LNAPL.
Sheen on purge water.
Sampling depth in screen: 12.5 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/27/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID: MW-312D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) 23 to 28 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 14:45 Stop Time: 16:00

Depth: Depth to 31.90 feet Height of GW Column: 22.72 feet Average Flow Rate: 300 ml/min

Product: Depth to - feet Three Times the Standing Volume: 10.91 Gal.

Water: 9.18 feet Total Volume Purged: 4.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 15:55

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Yellow
 Clarity: -
 : Odor: -

FIELD ANALYSIS DATA

+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft		
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
15:32	8.74	14.8	0.82	0.26	-179.5	3.96	9.20
15:35	8.57	14.8	0.81	0.26	-179.1	-	-
15:38	8.37	14.8	0.80	0.24	-177.5	-	-
15:41	8.36	14.8	0.80	0.25	-176.8	-	-
15:45	8.42	14.8	0.80	0.24	-175.5	-	-

NOTES

Notes: Sampling depth in screen: 26 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-326S

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

5 bgs): to 25

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 14:40 Stop Time: 16:30

Depth: Depth to 26.60 feet Height of GW Column: 15.17 feet Average Flow Rate: 250 ml/min

Product: Depth to 11.41 feet Three Times the Standing Volume: 7.28 Gal.

Water: 11.43 feet Total Volume Purged: 8 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 16:30

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
Clarity: Clear
: Odor: -

FIELD ANALYSIS DATA

+/-0.1		+/-3%		+/-3%	+/-10%	+/-10mV	DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1620	6.68	15.50	0.708	0.47	-125	2	10.75
1623	6.67	15.50	0.706	0.5	-126	1	10.75
1626	6.67	15.40	0.709	0.48	-127	2	10.75

NOTES

Notes: Slight sheen on purge water.
Used Horiba due to presence of LNAPL
Sampling depth in screen: 15 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-326D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

33 bgs): to 43

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 14:35 Stop Time: 16:20

Depth: Depth to 45.00 feet Height of GW Column: 34.65 feet Average Flow Rate: 250 ml/min

Product: Depth to - feet Three Times the Standing Volume: 16.6 Gal.

Water: 10.37 feet Total Volume Purged: 8 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 16:20

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
Clarity: Clear
: Odor: None

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1555	7.71	15.8	9.899	0.70	-169	4.4	17.55
1603	7.66	15.8	10.395	0.69	-167	4.9	17.55
1610	7.66	15.8	9.963	0.76	-162	4.5	17.55
1613	7.65	15.7	9.946	0.78	-160	4.0	17.55
1616	7.63	15.7	9.841	0.75	-155	3.9	17.55

NOTES

Notes: Sampling depth in screen: 38 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/27/2011
 Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-333S

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) 6 bgs) to 16 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 11:30 Stop Time: 13:15

Depth: Depth to 18.30 feet Height of GW Column: 6.25 feet Average Flow Rate: 300 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3 Gal.

Water: 12.05 feet Total Volume Purged: 7.5 Gal.

SAMPLING INFORMATION

Equipment:	Peristaltic Pump	Time: 13:10			
	Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
	VOCs	N	HCL	VOA	3
	Total Cyanide	N	NaOH	Plastic	1
	Dissolved Cyanide	Y	NaOH	Plastic	1
	TPH	N	-	Glass	1
	PAHs	N	-	Glass	1

Sample Observations: Color: Clear
 Clarity: Clear
 : Odor: None

FIELD ANALYSIS DATA

+/-0.1		+/-3%		+/-3%		+/-10%		+/-10mV		DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)				
1206	6.14	19.7	7.991	0.27	41	3.7	12.55				
1212	6.15	19.2	7.909	0.22	7.0	2.9	12.52				
1217	6.18	19.5	7.802	0.19	-26	3.2	12.50				
1223	6.17	19.2	7.753	0.18	-39	3.8	12.48				
1229	6.18	19.1	7.632	0.18	-32	3.0	12.45				
1235	6.21	19.1	7.600	0.18	-49	3.5	12.42				
1259	6.26	19.3	7.308	0.13	-126	3.0	12.26				
1302	6.27	19.5	7.316	0.14	-130	3.0	12.25				
1305	6.28	19.3	7.225	0.12	-129.7	3.0	12.25				

NOTES

Notes: Sampling depth in screen: 11 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-333D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

30 bgs) to 40

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 11:35 Stop Time: 13:30

Depth: Depth to 45.00 feet Height of GW Column: 32.76 feet Average Flow Rate: 250 ml/min

Product: Depth to - feet Three Times the Standing Volume: 15.72 Gal.

Water: 12.24 feet Total Volume Purged: 8 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 13:30

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
Clarity: Clear
: Odor: None

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1317	7.87	16.00	0.954	0.50	-194	3.0	15.00
1325	7.89	16.00	0.955	0.49	-194	2.5	15.00
1330	7.85	16.00	0.956	0.49	-189	3.0	15.00

NOTES

Notes: Sampling depth in screen: 35 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/27/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID: MW-339S

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) Well Diameter: 2"
3 bgs) to 10

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 9:50 Stop Time: 11:00

Depth: Depth to 12.20 feet Height of GW Column: 5.69 feet Average Flow Rate: 375 ml/min

Product: Depth to - feet Three Times the Standing Volume: 2.73 Gal.

Water: 6.51 feet Total Volume Purged: 6 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 10:50

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: -
 Clarity: -
 : Odor: -

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1022	5.57	18.9	0.62	0.63	80.4	4.76	6.80
1025	5.43	19.8	0.62	0.66	80.2	-	6.81
1032	5.37	18.5	0.62	2.60	75.0	-	6.75
1035	5.34	18.4	0.62	2.36	75.1	-	6.75
1040	5.35	18.6	0.61	2.24	76.5	-	6.70
1043	5.36	18	0.61	2.55	71.9	-	6.65

NOTES

Notes: Sampling depth in screen: 7 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/27/2011
Sampler: SDN

WELL INFORMATION

Monitoring Well ID MW-339D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"
12 bgs) to 17

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 11:05 Stop Time: 12:25

Depth: Depth to 20.95 feet Height of GW Column: 12.65 feet Average Flow Rate: 250 ml/min

Product: Depth to - feet Three Times the Standing Volume: 6.07 Gal.

Water: 8.30 feet Total Volume Purged: 7 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 12:18

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: -
Clarity: -
: Odor: Slight coal-tar like

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV		DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1203	6.87	14.2	0.56	0.5	-32.8	4.5	8.22
1206	6.83	14.0	0.56	0.37	-37.4	3.74	8.22
1209	6.78	14.1	0.56	0.32	-42	-	8.22
1212	6.79	14.1	0.56	0.29	-46.1	-	8.22
1215	6.81	14.1	0.56	0.26	-50.3	-	8.22

NOTES

Notes: Sampling depth in screen: 15 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/26/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID: M&E MW-2

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet bgs): Unknown Well Diameter: 2"

WELL PURGING INFORMATION

Equipment Well: Peristaltic Pump Start Time: 10:01 Stop Time: 11:45

Depth: Depth to 13.80 feet Height of GW Column: 4.40 feet Average Flow Rate: 225 ml/min

Product: Depth to - feet Three Times the Standing Volume: 2.11 Gal.

Water: 9.40 feet Total Volume Purged: 9 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 11:35

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCl	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: -
 Clarity: -
 Odor: -

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
11:17	7.27	19.3	10.922	1.73	7.5	0.09	10.64
11:24	7.24	19.3	10.987	1.79	7.0	0	10.65
11:27	7.21	19.5	11.013	1.79	2.7	0	10.63
11:30	7.25	19.7	11.095	1.79	4.6	0	10.60

NOTES

Notes: Sampling depth in screen: 11 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/26/2011
Sampler: SDN

WELL INFORMATION

Monitoring Well ID: MW-6

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) 5.5 bgs) to 15.5 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 13:25 Stop Time: 14:45

Depth: Depth to 19.10 feet Height of GW Column: 7.23 feet Average Flow Rate: 150 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3.47 Gal.

Water: 11.87 feet Total Volume Purged: 3 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 14:35

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: -
Clarity: Slight turbid
Odor: Slight Petroleum-like

FIELD ANALYSIS DATA

+/-0.1		+/-3%		+/-3%		+/-10%		+/-10mV		DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)				
14:10	6.72	17.3	0.628	0.76	-54.7	5.35	11.90				
14:15	6.69	17.4	0.627	0.76	-60.7	5.11	11.90				
14:20	6.67	17.4	0.626	0.57	-64.3	5.12	11.90				
14:26	6.65	17.5	0.626	0.44	-71.6	4.85	11.90				
14:29	6.65	17.4	0.625	0.41	-72.7	4.2	11.90				
14:33	6.64	17.3	0.622	0.41	-76.1	4.05	11.90				

NOTES

Notes: Sampling depth in screen: 11 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/26/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-109

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes
TOC Other No X

Screened Interval (feet) Well Diameter: 2"

10 bgs) to 20

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 16:30 Stop Time: 17:10

Depth: Depth to 19.30 feet Height of GW Column: 7.78 feet Average Flow Rate: 200 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3.73 Gal.

Water: 11.52 feet Total Volume Purged: 4 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 17:10

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: Clear
Clarity: Clear
: Odor: Slight coal-tar like

FIELD ANALYSIS DATA

+/-0.1		+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
17:00	6.47	14.00	0.333	0.13	-139	2.1	11.52
17:05	6.47	14.10	0.334	0.12	-142	2.5	11.52
17:10	6.47	14.10	0.332	0.12	-144	2.8	11.52

NOTES

Notes: Sampling depth in screen: 14.5 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/26/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID: MW-314S

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) 5 bgs) to 25 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 8:55 Stop Time: 9:55

Depth: Depth to 24.40 feet Height of GW Column: 15.22 feet Average Flow Rate: 500 ml/min

Product: Depth to - feet Three Times the Standing Volume: 7.31 Gal.

Water: 9.18 feet Total Volume Purged: 8 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 9:45

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: -
 Clarity: Slight
 : Odor: Slight Petroleum-like

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
9:27	6.79	13.6	2.506	0.43	-87.1	8.05	9.61
9:32	6.82	13.6	2.531	0.34	-83	7.51	9.61
9:35	6.80	13.6	2.534	0.30	-87.4	7.53	9.61
9:38	6.84	13.7	2.561	0.30	-87.1	8.07	9.61
9:41	6.81	13.7	2.579	0.32	-91.2	7.75	9.61

NOTES

Notes: Slight sheen in purge water.
 Sampling depth in screen: 20 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/26/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID MW-314D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feet) 33 bgs) to 43 Well Diameter: 2"

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 10:54 Stop Time: 12:30

Depth: Depth to 43.20 feet Height of GW Column: 33.85 feet Average Flow Rate: 475 ml/min

Product: Depth to - feet Three Times the Standing Volume: 16.25 Gal.

Water: 9.35 feet Total Volume Purged: 6 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 12:23

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: Tan
 Clarity: Slight turbid
 : Odor: Slight Petroleum-like

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1153	7.60	12.5	8.593	0.34	-91.6	18	12.14
1157	7.51	12.7	8.555	0.40	-87.2	17.5	12.10
1201	7.52	12.7	8.526	0.38	-89.8	18.2	12.10
1205	7.48	12.8	8.547	0.32	-98.9	18	12.00
1210	7.44	13.8	8.579	0.25	-91.8	18	11.30
1214	7.39	13.8	9.400	0.24	-92.1	9.72	11.02
1217	7.39	13.8	9.462	0.23	-92.7	9.5	10.85
1220	7.39	13.8	9.494	0.25	-92.8	9.37	10.80

NOTES

Notes: Very slight sheen on purge water.
 Sampling depth in screen: 38 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
 Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
 Date: 7/26/2011
 Sampler: SDN

WELL INFORMATION

Monitoring Well ID: MW-337

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
 TOC Other No

Screened Interval (feetbgs): Well Diameter: 2"
5 to 15

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 14:30 Stop Time: 16:20

Depth: Depth to 19.90 feet Height of GW Column: 8.05 feet Average Flow Rate: 500 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3.86 Gal.

Water: 11.85 feet Total Volume Purged: 20 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 16:10

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: -
 Clarity: -
 : Odor: Slight Petroleum-like

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
14:47	6.76	15.2	0.725	0.28	-41.6	4.90	11.85
14:54	6.77	15.2	0.720	0.19	-47.6	-	-
15:06	6.97	15.2	0.709	0.15	-56.6	-	-
15:50	7.21	15.2	0.684	0.12	-64.8	-	-
15:59	7	15.1	0.684	0.11	-69.6	-	11.80
16:02	6.95	15.2	0.686	0.12	-69.8	-	-
16:05	6.92	15.20	0.686	0.11	-70.1	-	-

NOTES

Notes: Slight sheen in purge water.
 Sampling depth in screen: 13.5 feet bgs
 All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

Notes:	This well went dry multiple times. Use Bailer to get sample. All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/28/2011
Sampler: SDN

WELL INFORMATION

Monitoring Well ID MW-316D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"
22 bgs) to 27

WELL PURGING INFORMATION

Equipment: Well Bailer Start Time: 9:30 Stop Time: 10:30

Depth: Depth to 31.50 feet Height of GW Column: 9.87 feet Average Flow Rate: - ml/min

Product: Depth to - feet Three Times the Standing Volume: 4.74 Gal.

Water: 21.63 feet Total Volume Purged: 4.75 Gal.

SAMPLING INFORMATION

Equipment: Bailer Time: 10:50

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: -
Clarity: Turbid
: Odor: -

FIELD ANALYSIS DATA

+/-0.1		+/-3%		+/-3%	+/-10%	+/-10mV	DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1040	7.47	15.1	0.604	3.97	82.8	15.5	22.8

NOTES

Notes: 0.5 gal. purged with pump.
4.25 gal. purged with bailer.
Peristaltic could not pump.
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/26/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-107

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

16 bgs) to 26

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 12:30 Stop Time: 13:55

Depth: Depth to 27.75 feet Height of GW Column: 7.84 feet Average Flow Rate: 150 ml/min

Product: Depth to - feet Three Times the Standing Volume: 3.76 Gal.

Water: 19.91 feet Total Volume Purged: 3 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 13:55

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
Clarity: Clear
: Odor: None

FIELD ANALYSIS DATA

+/-0.1		+/-3%		+/-3%	+/-10%	+/-10mV	DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1341	3.25	16.50	0.774	2.1	527	2.2	19.93
1346	3.24	16.40	0.773	2.19	526	2.5	19.93
1351	3.25	16.50	0.776	2.25	526	2.3	19.93

NOTES

Notes: Pump struggling, may be too much head to pull up.
Sampling depth in screen: 21 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 9/26/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID: MW-318S

Measuring Point: PVC X Well Construction: PVC X x Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

10 bgs): to 25

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 13:35 Stop Time: 14:45

Depth: Depth to 26.94 feet Height of GW Column: 9.58 feet Average Flow Rate: 150 ml/min

Product: Depth to - feet Three Times the Standing Volume: 4.60 Gal.

Water: 17.36 feet Total Volume Purged: 2 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 14:35

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Sample Observations: Color: Clear
Clarity: Clear
Odor: Coal-tar-like odor

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1424	3.15	15.50	1.001	0.40	319	3.5	17.25
1429	3.14	15.50	1.005	0.39	319	3.1	17.25
1434	3.15	15.40	1.001	0.46	318	2.8	17.25

NOTES

Notes: Sampling depth in screen: 18 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/26/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-318D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

30 bgs): to 40

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 14:55 Stop Time: 16:15

Depth: Depth to 43.65 feet Height of GW Column: 25.80 feet Average Flow Rate: 150 ml/min

Product: Depth to - feet Three Times the Standing Volume: 12.38 Gal.

Water: 17.75 feet Total Volume Purged: 3 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 16:15

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: Clear
Clarity: Clear
: Odor: None

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV		DD<0.3ft
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1554	5.99	15.2	0.424	1.20	160	4.7	15.98
1604	5.98	15.3	0.423	0.87	148	3.8	15.98
1609	5.98	15.3	0.423	0.80	143	3.5	15.96
1614	5.95	15.4	0.428	0.77	138	3.2	15.99

NOTES

Notes: Sampling depth in screen: 35 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/26/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-334S

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2

14 bgs): to 24

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 12:00 Stop Time: 13:15

Depth: Depth to 28.75 feet Height of GW Column: 9.23 feet Average Flow Rate: 100 ml/min

Product: Depth to - feet Three Times the Standing Volume: 4.43 Gal.

Water: 19.52 feet Total Volume Purged: 1.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 13:15

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N		Glass	1
PAHs	N		Glass	1

Sample Observations: Color: Clear
Clarity: Clear
: Odor: Faint coal-tar like

FIELD ANALYSIS DATA

+/-0.1		+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
1301	2.46	18.00	2.477	3.48	474	3.1	19.54
1306	2.51	18.00	2.477	3.61	475	3.0	19.54
1311	2.46	18.00	2.487	3.58	475	3.3	19.54

NOTES

Notes: Pump is at full throttle. Difficulty pumping head.
Sampling depth in screen: 21 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

File Number: 05.00043654.00 T33
Project: Former MGP Facility, Tidewater Street, Pawtucket, RI
Date: 7/26/2011
Sampler: MJB

WELL INFORMATION

Monitoring Well ID MW-334D

Measuring Point: PVC X Well Construction: PVC X Well Locked: Yes X
TOC Other No

Screened Interval (feet) Well Diameter: 2"

28 bgs) to 38

WELL PURGING INFORMATION

Equipment: Well Peristaltic Pump Start Time: 14:15 Stop Time: 15:45

Depth: Depth to 43.13 feet Height of GW Column: 22.02 feet Average Flow Rate: 150 ml/min

Product: Depth to - feet Three Times the Standing Volume: 10.60 Gal.

Water: 21.11 feet Total Volume Purged: 2.5 Gal.

SAMPLING INFORMATION

Equipment: Peristaltic Pump Time: 15:45

Analytical Parameters	Field Filtered	Preservative	Container	Number of Samples
VOCs	N	HCL	VOA	3
Total Cyanide	N	NaOH	Plastic	1
Dissolved Cyanide	Y	NaOH	Plastic	1
TPH	N	-	Glass	1
PAHs	N	-	Glass	1

Smpl Observations: Color: Clear
Clarity: Clear
: Odor: None

FIELD ANALYSIS DATA

	+/-0.1	+/-3%	+/-3%	+/-10%	+/-10mV	DD<0.3ft	
Time	pH	Temperature (°C)	Specific Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to Water (feet)
15:04	2.69	17.00	1.814	2.18	448	4.2	19.21
15:33	2.73	17.10	1.715	2.82	447	4.3	18.95
15:39	2.72	17.10	1.710	2.72	447	4.0	18.90
15:43	2.72	17.10	1.700	2.72	447	4.8	18.85

NOTES

Notes: Sampling depth in screen: 33 feet bgs
All other depths noted (Depth to Water, Depth to Product and Well depth) are measured from the top of PVC within the Casing.

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-7
Sample Date: 7/11/2012
Sampler's Name: EMB

Measurement Date/Time: 7/11/12/14:30

Standing Water in Well (feet):	5.49
Well Diameter (in.)	2"
Sample Depth (feet BGS):	19.5
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☐ Yes ☒ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

Stop time: 15:25

[illegible]

SAMPLE TIME: 15:25

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: Clear Odor: None Clarity: Clear

Tubing Volume: 0.14 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Blind duplicate "BD071112" Collected

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
<u>Weather:</u>	Sunny 80's	

Well ID:	MW-310S
Sample Date:	7/10/2012
Sampler's Name:	EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7/10/2012

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	16.9					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	6.98					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	5	to	15			

Standing Water in Well (feet):	9.92
Well Diameter (in.)	2"
Sample Depth (feet BGS):	10
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	P-3

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #2	No.	Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 13:17

Stop time: 14:30

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:20

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: None

Total Purge Volume: 4 Gal

Tubing Volume: 0.1 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Orange flakes in purge water at beginning of pumping.

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
<u>Weather:</u>	Sunny 80's	

Well ID: MW-310D

Sample Date: 7/10/2013

Sampler's Name: EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7/10/2012/ 8:05

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	36.3					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	9					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	22 to 32					

Standing Water in Well (feet):	27.3
Well Diameter (in.)	2"
Sample Depth (feet BGS):	27
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	P-2

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 13:20

Stop time: 15:00

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:50

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: None

Total Purge Volume: 5 Gak Tubing Volume: 0.22 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Grayish color at start, then cleared.

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-201
Sample Date: 7/10/2012
Sampler's Name: EMB

Measurement Date/Time: 7/10/2012

Standing Water in Well (feet):	4.79
Well Diameter (in.)	2"
Sample Depth (feet BGS):	8
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #2	No.	Lamotte #1

Start time: 10:52

Stop time: 12:15

[illegible]

SAMPLE TIME: 12:06

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: Grayish Odor: Organic Clarity: Slightly Murky

Tubing Volume: 0.08 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID:	MW-208
Sample Date:	7/10/2012
Sampler's Name:	EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7/10/2012

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	21.8					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	16.12					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	10	to	20			

Standing Water in Well (feet):	5.68
Well Diameter (in.)	2"
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	P-2

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #2	No.	Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 11:05

Stop time: 12:45

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:36

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume: 5 Gal

Tubing Volume: 0.11 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-312S
Sample Date: 7/11/2012
Sampler's Name: EMB

Measurement Date/Time: 7/11/2012

Standing Water in Well (feet):	8.95
Well Diameter (in.)	2"
Sample Depth (feet BGS):	12.5
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

Start time: 8:25

Stop time: 10:00

[illegible]

SAMPLE TIME: 9:45

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: Clear Odor: Slight Product Clarity: Clear

Tubing Volume: 0.11 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Replaced tubing prior to sample process.

Trace amount of LNAPL in purge water, cleared to slight sheen.

NM= not measured

Dept to water not measured due to LNAPL presence during low flow sampling.

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID:	MW-312D
Sample Date:	7/11/2012
Sampler's Name:	EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7/11/2012

Point of Measurement	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			32			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			8.8			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):		23	to	28		

Standing Water in Well (feet):	23.2
Well Diameter (in.)	2"
Sample Depth (feet BGS):	25.5
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition:	Protective Casing-	☐ Poor	☒ Good	Lock-	☒ Yes	☐ No	Expansion Cap-	☒ Yes	☐ No	Well ID-	☒ Yes	☐ No	Concrete Collar-	☒ Yes	☐ No	Well-	☐ Poor	☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	P-3

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #2	No.	Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 13:07

Stop time: 14:15

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:15

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: Clear Odor: Slight Petroleum-like Clarity: Clear

Total Purge Volume: 4.5 Gal

Tubing Volume: 0.17 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI
Weather: Sunny 80's

Well ID: MW-326S
Sample Date: 7/11/2012
Sampler's Name: EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7/11/2012 -8:00

Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐
Total Well Depth (feet): 26.7
Depth to LNAPL (feet): trace
Depth to Water (feet): 12.98
Depth to DNAPL (feet): -
Well Screened Interval (feet BGS): 5 to 25

Standing Water in Well (feet): 13.72
Well Diameter (in.): 2"
Sample Depth (feet BGS): 15
Standpipe: TPVC to Ground Surface (feet) -
Roadbox: TPVC to Ground Surface (feet) -

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-2

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 8:02

Stop time: 9:25

		1	2	3	4	5	6	7	8
Time: (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvols) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (ms/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (°C) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
8:50	12.81	-61	6.67	.605	9.7	13.4	4	400	
8:55	12.80	-100	6.09	.599	0.82	13.4	3	400	
9:00	12.70	-104	6.71	.600	0.65	13.4	3	400	
9:05	12.77	-108	6.73	.598	0.49	13.4	3	400	
9:10	12.75	-109	6.74	.596	0.41	13.5	3	400	
9:15	12.73	-108	6.70	.595	0.37	13.5	3	400	
9:17	12.72	-107	6.69	.595	0.37	13.5	3	400	
9:20	12.72	-108	6.69	.594	0.36	13.5	3	400	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:20

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HC1	None
TPH	8100M	2	Amber Glass	1000	H ₂ So4	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: Clear Odor: Slight Petroleum Clarity: Clear

Total Purge Volume: 4 Gal

Tubing Volume: 0.09 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Slight sheen on purge water.

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-326D
Sample Date: 7/11/2012
Sampler's Name: EMB

Measurement Date/Time: 7/11/2012 -8:30

Standing Water in Well (feet):	33.12
Well Diameter (in.)	2"
Sample Depth (feet BGS):	38
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

Start time: 8:35

Stop time: 9:45

[illegible]

SAMPLE TIME: 9:45

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: Clear Odor: None Clarity: Clear

Tubing Volume: 0.25 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

NR=Not Recorded.

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-333S
Sample Date: 7/11/2012
Sampler's Name: EMB

Measurement Date/Time: 7/11/2012 -10:55

Standing Water in Well (feet):	6.42
Well Diameter (in.)	2"
Sample Depth (feet BGS):	11
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

Start time: 11:20

Stop time: 12:30

[illegible]

SAMPLE TIME: 12:20

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: Clear Odor: None Clarity: Clear

Tubing Volume: 0.08 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-333D
Sample Date: 7/11/2012
Sampler's Name: EMB

Measurement Date/Time: 7/11/2012 -10:40

Standing Water in Well (feet):	33.22
Well Diameter (in.)	2"
Sample Depth (feet BGS):	35
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

Start time: 10:45

Stop time: 12:00

[illegible]

SAMPLE TIME: 12:00

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: Grayish Odor: None Clarity: Murky

Tubing Volume: 0

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID: MW-339S
Sample Date: 7/12/2012
Sampler's Name: EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7-12-12/9:10

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			12.4			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			7.08			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			3 to 10			

Standing Water in Well (feet):	5.32
Well Diameter (in.)	2"
Sample Depth (feet BGS):	7
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	P-2

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 9:18

Stop time: 10:30

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 10:20

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: Clear Odor: Slight Product Clarity: Clear

Total Purge Volume: 6 Gal

Tubing Volume: 0.07 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID: MW-339E
Sample Date: 7/12/2012
Sampler's Name: EMB

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7-12-12/9:05

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	21.05					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	6.9					
Depth to DNAPL (feet):	Trace (-)					
Well Screened Interval (feet BGS):	12		17			

Standing Water in Well (feet):	14.15
Well Diameter (in.)	2"
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-3

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 10:22

Stop time: 11:30

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:30

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: Clear Odor: Slight Product-like Clarity: Clear

5 Gal **Tubing Volume:** 0.12 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

New tubing installed prior to sampling

Slight sheen

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID: MAE MW-
Sample Date: 7/12/2012
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7/10/2012

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			13.3			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			10.75			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			unknown			

Standing Water in Well (feet):	3.02
Well Diameter (in.)	2"
Sample Depth (feet BGS):	12
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☒ Poor ☐ Good **Lock-** ☐ Yes ☒ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-2

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 8:30

Stop time: 10:10

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:50

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HC1	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: None

Total Purge Volume: 8 Gal

Tubing Volume: 0.08 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Not enough water to go midpoint.

Lots of Bees in standpipe cap.

GROUNDWATER SAMPLING DATA SHEET

Well ID:	MW-6
Sample Date:	7/11/2012
Sampler's Name:	SDN

Measurement Date/Time: 7/10/2012

Standing Water in Well (feet):	7.33
Well Diameter (in.)	2"
Sample Depth (feet BGS):	11
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

Start time: 10:40

Stop time: 11:50

[illegible]

SAMPLE TIME: 11:35

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: None Odor: None Clarity: none

Tubing Volume: 0.09 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Lowered flow to lower DO

GROUNDWATER SAMPLING DATA SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI
Weather: Sunny 80's

Well ID: MW-109
Sample Date: 7/11/2012
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7-10-12/8:06

Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐
Total Well Depth (feet): 19.3
Depth to LNAPL (feet): -
Depth to Water (feet): 12.5
Depth to DNAPL (feet): -
Well Screened Interval (feet BGS): 10 to 20

Standing Water in Well (feet): 6.8
Well Diameter (in.): 2"
Sample Depth (feet BGS): 15
Standpipe: TPVC to Ground Surface (feet) -
Roadbox: TPVC to Ground Surface (feet) -

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #3

INSTRUMENT MEASUREMENTS:

Start time: 14:15

Stop time: 15:45

		1	2	3	4	5	6	7	8
Time: (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvols) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (°C) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
14:57	11.95	-32.8	6.11	709	0.38	15.7	7.54	350	
14:40	11.95	-38.7	6.12	610	0.26	15.6	8.1	350	
14:48	11.95	-52.9	6.21	429	0.31	15.5	11.2	350	
14:51	11.95	-55.2	6.2	455	0.41	15.8	11.9	350	
14:55	11.95	-59	6.23	410	0.41	15.5	12.1	350	
14:59	11.95	-61.6	6.24	367	0.41	15.5	12	350	
15:02	11.95	-63.2	6.24	353	0.41	15.6	13.2	350	
15:05	11.95	-64.9	6.24	347	0.37	15.5	13.1	350	
15:08	11.95	-66.8	6.23	339	0.32	15.6	13.5	350	
15:11	11.95	-68.3	6.24	336	0.27	15.6	14.2	350	
15:14	11.95	-70	6.24	334	0.28	15.5	14.1	350	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 15:20

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HC1	None
TPH	8100M	2	Amber Glass	1000	H ₂ So ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Odor: Very Slight
Color: None Coal tar-like Clarity: None

Total Purge Volume: 5 Gal

Tubing Volume: 0.11 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Slight sheen on purge water

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-314S
Sample Date: 7/12/2012
Sampler's Name: SDN

Measurement Date/Time: 7/10/2012

Standing Water in Well (feet):	13.95
Well Diameter (in.)	2"
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #2	No.	Lamotte #1

Start time: 8:15

Stop time: 9:15

[illegible]

SAMPLE TIME: 9:03

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Odor: Very Slight
Fuel Oil-like Clarity: None

Tubing Volume: 0.14 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Brace sheen on purge water

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID: MW-314D
Sample Date: 7/12/2012
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7-10-12/8:10

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			43.4			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			10.3			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			33	to	43	

Standing Water in Well (feet):	33.04
Well Diameter (in.)	2"
Sample Depth (feet BGS):	38
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #2	No.	Lamotte #1

INSTRUMENT MEASUREMENTS:

Start time: 9:15

Stop time: 10:50

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 10:30

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: none Odor: None Clarity: none

Total Purge Volume: 7 Gal

Tubing Volume: 0.26 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Very slight sheen on purge water

GROUNDWATER SAMPLING DATA SHEET

Well ID:	MW-316S
Sample Date:	7/11/2012
Sampler's Name:	SDN

Measurement Date/Time: 7-10-12/8:37

Standing Water in Well (feet):	0.71
Well Diameter (in.)	2"
Sample Depth (feet BGS):	19
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☒ Bail ☐ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): NA

Meter Type: YSI #3 No. Lamotte #2

Start time: 12:40

Stop time: NA

[illegible]

SAMPLE TIME: 13:00

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HC1	None

Sample observations:

Color: None Odor: None Clarity: Very turbid

Tubing Volume: NA

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Lots of fine sand

Pre-bail: 22.82'=DTW

Immediately collect sample

NR=Not recorded

GROUNDWATER SAMPLING DATA SHEET

Well ID:	MW-316D
Sample Date:	7/11/2012
Sampler's Name:	SDN

Measurement Date/Time: 7-10-12/8:38

Standing Water in Well (feet):	9.56
Well Diameter (in.)	2"
Sample Depth (feet BGS):	25
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

Start time: 12:25

Stop time: 13:45

[illegible]

SAMPLE TIME: 13:30

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HC1	None
TPH	8100M	2	Amber Glass	1000	H ₂ So4	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: None

Tubing Volume: 0.16 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL /FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-337
Sample Date: 7/11/2012
Sampler's Name: SDN

Measurement Date/Time: 7/10/2012

Standing Water in Well (feet):	8.12
Well Diameter (in.)	2"
Sample Depth (feet BGS):	10
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

Start time: 9:45

Stop time: 10:50

[illegible]

SAMPLE TIME: 10:30

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Odor: Slight fuel

Oil-like Clarity: None

Tubing Volume: 0.11 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Flow as low as possible

Very slight sheen on purge water

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-107
Sample Date: 7/11/2012
Sampler's Name: SDN

Measurement Date/Time: 7-10-12/9:26

Standing Water in Well (feet):	8.31
Well Diameter (in.)	2"
Sample Depth (feet BGS):	21
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI #3	No.	Lamotte #2

Stop time: 9:40

[illegible]

SAMPLE TIME: 9:25

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: None

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Flow as low as possible

GROUNDWATER SAMPLING DATA SHEET

Well ID:	MW-318S
Sample Date:	7/10/2012
Sampler's Name:	SDN

Measurement Date/Time: 7-10-12/9:42

Standing Water in Well (feet):	10.47
Well Diameter (in.)	2"
Sample Depth (feet BGS):	18
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

Stop time: 13:05

[illegible]

SAMPLE TIME: 12:40

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: Clear Odor: None Clarity: Clear

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

GROUNDWATER SAMPLING DATA SHEET

Well ID:	MW-318D
Sample Date:	7/10/2012
Sampler's Name:	SDN

Measurement Date/Time: 7/10/2012

Standing Water in Well (feet):	25.2
Well Diameter (in.)	2"
Sample Depth (feet BGS):	35
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

Start time: 14:15

Stop time: 14:55

[illegible]

SAMPLE TIME: 14:50

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: None Clarity: None

Tubing Volume: 0.23 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654.00 Task 36	
Project:	Former Tidewater Facility	
Location:	City: Pawtucket	State: RI
Weather:	Sunny 80's	

Well ID: MW-334S
Sample Date: 7/10/2012
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 7-10-12/9:32

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			28.81			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			19.31			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):	14	to	24			

Standing Water in Well (feet):	9.5
Well Diameter (in.)	2"
Sample Depth (feet BGS):	19
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Submersible No.

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 11:50

Stop time: 13:30

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:15

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HC1	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: None Odor: Slight Coal tar-like Clarity: Slight sheen

Total Purge Volume: 5 Gal

Tubing Volume: 0.17 Gal

2" WELL = 0.163 GAL/FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL/FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Collected BD-71012

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-334D
Sample Date: 7/10/2012
Sampler's Name: SDN

Measurement Date/Time: 7-10-12/9:31

Standing Water in Well (feet):	22.33
Well Diameter (in.)	2"
Sample Depth (feet BGS):	33
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #3 No. Lamotte #2

Start time: 13:50

Stop time: 14:40

[illegible]

SAMPLE TIME: 14:25

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCs	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	H ₂ SO ₄	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Color: None Odor: None Clarity: None

Tubing Volume: 0.22 Gal

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 2
Date: 7/10/2012

LOW FLOW CALIBRATION:

Initial Calibration:

Morning

Specific Conductance:	Instrument and Number: YSI #3	Standard Solution: 1000	Reading: 988
pH (s.u.):	Instrument and Number: YSI #3	Standard Solution: 4/7	Reading: 3.99/7.0
DO (mg/L):	Instrument and Number: YSI #3	Standard Solution: 100	Reading: 100
ORP (mvolts):	Instrument and Number: YSI #3	Standard Solution: 237.5	Reading: 237.5
Turbidity (NTU):	Instrument and Number: Lamotte #2	Standard Solution: 0/10	Reading: 0/10.92

Bump Check:

Night

Specific Conductance:	Instrument and Number: YSI #3	Standard Solution: 1000	Reading: 1080
pH (s.u.):	Instrument and Number: YSI #3	Standard Solution: 4/7	Reading: 4.28/6.85
DO (mg/L):	Instrument and Number: YSI #3	Standard Solution: 100	Reading: 101.4
ORP (mvolts):	Instrument and Number: YSI #3	Standard Solution: 224.5	Reading: 222.8
Turbidity (NTU):	Instrument and Number: Lamotte #2	Standard Solution: 1	Reading: 0.7

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 2 of 2
Date: 7/10/2012

LOW FLOW CALIBRATION:

Initial Calibration:

Morning

Specific Conductance:	Instrument and Number: YSI #2	Standard Solution: 1000	Reading: 992
pH (s.u.):	Instrument and Number: YSI #2	Standard Solution: 4/7	Reading: 3.99/7.02
DO (mg/L):	Instrument and Number: YSI #2	Standard Solution: 100	Reading: 98.6
ORP (mvolts):	Instrument and Number: YSI #2	Standard Solution: 2375	Reading: 237.5
Turbidity (NTU):	Instrument and Number: Lamotte #1	Standard Solution: 0/10	Reading: -0.02/9.71

Bump Check:

Night

Specific Conductance:	Instrument and Number: YSI #2	Standard Solution: 1000	Reading: 1100
pH (s.u.):	Instrument and Number: YSI #2	Standard Solution: 4/7	Reading: 4.01/6.85
DO (mg/L):	Instrument and Number: YSI #2	Standard Solution: 100	Reading: 101.1
ORP (mvolts):	Instrument and Number: YSI #2	Standard Solution: 224.5	Reading: 218.6
Turbidity (NTU):	Instrument and Number: Lamotte #1	Standard Solution: 1	Reading: 0.9

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 2
Date: 7/11/2012

LOW FLOW CALIBRATION:

Initial Calibration:

Morning

Specific Conductance:	Instrument and Number: YSI #3	Standard Solution: 1000	Reading: 1000
pH (s.u.):	Instrument and Number: YSI #3	Standard Solution: 4/7	Reading: 4.01/6.99
DO (mg/L):	Instrument and Number: YSI #3	Standard Solution: 100	Reading: 100.4
ORP (mvolts):	Instrument and Number: YSI #3	Standard Solution: 224.5	Reading: 224.5
Turbidity (NTU):	Instrument and Number: Lamotte @2	Standard Solution: 0/1	Reading: 0/1

Bump Check:

Night

Specific Conductance:	Instrument and Number: YSI #3	Standard Solution: 1000	Reading: 1041
pH (s.u.):	Instrument and Number: YSI #3	Standard Solution: 4/7	Reading: 4.14/6.86
DO (mg/L):	Instrument and Number: YSI #3	Standard Solution: 100	Reading: 102.4
ORP (mvolts):	Instrument and Number: YSI #3	Standard Solution: 224.5	Reading: 225.7
Turbidity (NTU):	Instrument and Number: Lamotte #2	Standard Solution: 0/1	Reading: -0.03/1.15

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 2 of 2
Date: 7/11/2012

LOW FLOW CALIBRATION:

Initial Calibration:

Morning

Specific Conductance:	Instrument and Number: YSI #2	Standard Solution: 1000	Reading: 1010
pH (s.u.):	Instrument and Number: YSI #2	Standard Solution: 4/7	Reading: 4.01/6.99
DO (mg/L):	Instrument and Number: YSI #2	Standard Solution: 100	Reading: 100.1
ORP (mvolts):	Instrument and Number: YSI #2	Standard Solution: 224.5	Reading: 224.5
Turbidity (NTU):	Instrument and Number: Lamotte #1	Standard Solution: 1	Reading: 1

Bump Check:

Night

Specific Conductance:	Instrument and Number: YSI #2	Standard Solution: 1000	Reading: 970
pH (s.u.):	Instrument and Number: YSI #2	Standard Solution: 4/7	Reading: 4.16/6.87
DO (mg/L):	Instrument and Number: YSI #2	Standard Solution: 100	Reading: 96.7
ORP (mvolts):	Instrument and Number: YSI #2	Standard Solution: 224.5	Reading: 29.2
Turbidity (NTU):	Instrument and Number: Lamotte #1	Standard Solution: 0/1	Reading: -0.60/0.76

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 2
Date: 7/12/2012

LOW FLOW CALIBRATION:

Initial Calibration:

Morning

Specific Conductance:	Instrument and Number: YSI #3	Standard Solution: 1000	Reading: 1000
pH (s.u.):	Instrument and Number: YSI #3	Standard Solution: 4/7	Reading: 3.99/6.99
DO (mg/L):	Instrument and Number: YSI #3	Standard Solution: 100	Reading: 101.1
ORP (mvolts):	Instrument and Number: YSI #3	Standard Solution: 224.5	Reading: 224.6
Turbidity (NTU):	Instrument and Number: Lamotte @2	Standard Solution: 0/1	Reading: -0.10/1.20

Bump Check:

Night

Specific Conductance:	Instrument and Number: YSI #3	Standard Solution: 1000	Reading: 1030
pH (s.u.):	Instrument and Number: YSI #3	Standard Solution: 4/7	Reading: 4.10/6.97
DO (mg/L):	Instrument and Number: YSI #3	Standard Solution: 100	Reading: 101.1
ORP (mvolts):	Instrument and Number: YSI #3	Standard Solution: 224.5	Reading: 217
Turbidity (NTU):	Instrument and Number: Lamotte #2	Standard Solution: 0/1	Reading: 0/1.25

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 2 of 2
Date: 7/12/2012

LOW FLOW CALIBRATION:

Initial Calibration:

Morning

Specific Conductance:	Instrument and Number: YSI #2	Standard Solution: 1000	Reading: 1000
pH (s.u.):	Instrument and Number: YSI #2	Standard Solution: 4/7	Reading: 4/7
DO (mg/L):	Instrument and Number: YSI #2	Standard Solution: 100	Reading: 100.1
ORP (mvolts):	Instrument and Number: YSI #2	Standard Solution: 224.5	Reading: 224.5
Turbidity (NTU):	Instrument and Number: Lamotte #1	Standard Solution: 0/1	Reading: -.03/0.99

Bump Check:

Night

Specific Conductance:	Instrument and Number: YSI #2	Standard Solution: 1000	Reading: 1020
pH (s.u.):	Instrument and Number: YSI #2	Standard Solution: 4/7	Reading: 4.11/6.91
DO (mg/L):	Instrument and Number: YSI #2	Standard Solution: 100	Reading: 106.5
ORP (mvolts):	Instrument and Number: YSI #2	Standard Solution: 224.5	Reading: 218
Turbidity (NTU):	Instrument and Number: Lamotte #1	Standard Solution: 0/1	Reading: -0.1/0.97

Revision Date: 1/27/12

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GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-7
Sample Date: 8/6/2013
Sampler's Name: Matt Bergen

Measurement Date/Time: 8/6/13-8:47

Standing Water in Well (feet):	8.37
Well Diameter (in.)	2
Sample Depth (feet BGS):	25
Standpipe: TPVC to Ground Surface (feet)	2.6
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI/Lamotte	No.	1

Stop time: 9:50

[illegible]

SAMPLE TIME: 9:50

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Color: Clear Odor: None Clarity: Clear

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-310S
Sample Date: 8/6/2013
Sampler's Name: Matt Bergen

Measurement Date/Time: 8/6/13-8:16

Standing Water in Well (feet):	10.32
Well Diameter (in.)	2
Sample Depth (feet BGS):	10
Standpipe: TPVC to Ground Surface (feet)	2.05
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI/Lamotte	No.	1

Stop time: 12:15

[illegible]

SAMPLE TIME: 12:15

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Slight Coal tar-like Clarity: Clear

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Iron particles in purge water.

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-310D
Sample Date: 8/6/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-8:19

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			36.3			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			6.02			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			22	to	32	

Standing Water in Well (feet):	30.28
Well Diameter (in.)	2
Sample Depth (feet BGS):	27
Standpipe: TPVC to Ground Surface (feet)	2.10
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	4

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI/Lamotte	No.	1

INSTRUMENT MEASUREMENTS:

Start time: 11:35

Stop time: 12:37

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:37

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	1	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Field Filtered

Sample observations:

Color: Clear Odor: Slight Coal tar-like Clarity: Clear

Total Purge Volume: 4 gallons

Tubing Volume: 0.22 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-201
Sample Date: 8/7/2013
Sampler's Name: Matt Bergen

Measurement Date/Time: 8/6/13-9:01

Standing Water in Well (feet):	4.74
Well Diameter (in.)	2
Sample Depth (feet BGS):	10
Standpipe: TPVC to Ground Surface (feet)	2.9
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI/Lamotte	No.	1

Start time: 14:00

Stop time: 14:40

[illegible]

SAMPLE TIME: 14:40

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Color: Clear Odor: Coal tar-like Clarity: Clear

Tubing Volume: 0.09 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Not enough water to sample at the midpoint of the well screen.

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-208
Sample Date: 8/8/2013
Sampler's Name: Matt Bergen

Measurement Date/Time: 8/6/13-8:54

Standing Water in Well (feet):	7.07
Well Diameter (in.)	2
Sample Depth (feet BGS):	14
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

Start time: 9:05

Stop time: 10:24

[illegible]

SAMPLE TIME: 10:24

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Color: Clear Odor: Coal tar-like Clarity: Clear

Tubing Volume: 0.13 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Suny 80's		

Well ID: MW-312S
Sample Date: 8/6/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:59

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	<u>23.5</u>					
Depth to LNAPL (feet):	<u>8.62</u>					
Depth to Water (feet):	<u>8.55</u>					
Depth to DNAPL (feet):	<u>-</u>					
Well Screened Interval (feet BGS):	5	to	20			

Standing Water in Well (feet):	13.95
Well Diameter (in.)	2
Sample Depth (feet BGS):	12
Standpipe: TPVC to Ground Surface (feet)	2.4
Roadbox: TPVC to Ground Surface (feet)	

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	3

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

INSTRUMENT MEASUREMENTS:

Start time: 13:30

Stop time: 14:31

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:31

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Coal tar-like Clarity: Sheen on purge water

Total Purge Volume: 3 gallons

Tubing Volume: 0.14 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL /FT - 0.0096 LITERS/FT

Notes:

Replaced tubing

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-312D
Sample Date: 8/6/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-10:05

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			32.9			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			8.19			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			23	to	28	

Standing Water in Well (feet):	24.71
Well Diameter (in.)	2
Sample Depth (feet BGS):	25
Standpipe: TPVC to Ground Surface (feet)	2.3
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	4

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

INSTRUMENT MEASUREMENTS:

Start time: 13:05

Stop time: 13:51

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:51

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	1	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Coal tar-like Clarity: Clear

Total Purge Volume: 4 gallons

Tubing Volume: 0.2 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

Well ID: MW-326S
Sample Date: 8/7/2013
Sampler's Name: Matt Bergen

Measurement Date/Time: 8/6/13-9:31

Standing Water in Well (feet):	16.51
Well Diameter (in.)	2
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	2.7
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

Start time: 10:50

Stop time: 11:46

[illegible]

SAMPLE TIME: 11:46

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Color: Clear Odor: Fuel oil-like Clarity: Sheen on purge water

Tubing Volume: 0.16 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Replaced tubing

GROUNDWATER SAMPLING DATA SHEET

Well ID:	MW-326D
Sample Date:	8/7/2013
Sampler's Name:	Matt Bergen

Measurement Date/Time: 8/6/13-9:29

Standing Water in Well (feet):	35.87
Well Diameter (in.)	2
Sample Depth (feet BGS):	33
Standpipe: TPVC to Ground Surface (feet)	1.9
Roadbox: TPVC to Ground Surface (feet)	NM

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

Start time: 10:20

Stop time: 11:22

[illegible]

SAMPLE TIME: 11:22

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Color: Clear Odor: Slight Coal tar-like Clarity: Clear

Tubing Volume: 0.27 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Revision Date: 1/27/12
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GROUNDWATER SAMPLING DATA SHEET

File No. 43654
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI
Weather: Sunny 80's

Well ID: MW-333S
Sample Date: 8/7/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:11

Point of Measurement: PVC Riser ☒ Steel Casing ☐ Ground ☐
Total Well Depth (feet): 17.9
Depth to LNAPL (feet): -
Depth to Water (feet): 9.22
Depth to DNAPL (feet): -
Well Screened Interval (feet BGS): 6 to 16

Standing Water in Well (feet): 8.57
Well Diameter (in.): 2
Sample Depth (feet BGS): 11
Standpipe: TPVC to Ground Surface (feet): 3
Roadbox: TPVC to Ground Surface (feet): -

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. 3

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI, Lamotte No. 1

INSTRUMENT MEASUREMENTS:

Start time: 8:30

Stop time: 9:39

		1	2	3	4	5	6	7	8
Time: (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvols) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (µS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (°C) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
8:54	9.23	195	6.47	6766	5.18	22.7	6	400	
9:01	9.23	189	6.48	7037	5.17	22.7	6	400	
9:07	9.25	186	6.49	7310	5.24	22.7	5	400	
9:10	9.26	186	6.50	7698	5.17	22.7	6	400	
9:15	9.29	167	6.50	8030	5.06	22.7	5	400	
9:18	9.31	187	6.50	8203	5.05	22.7	4	400	
9:21	9.31	188	6.50	8359	5.14	22.7	3	400	
9:24	9.33	188	6.50	8537	5.22	22.7	4	400	
9:27	9.33	188	6.50	8740	5.1	22.7	4	400	
9:30	9.36	188	6.50	8870	5.17	22.7	3	400	
9:33	9.38	188	6.50	9073	5.29	22.7	4	400	
9:36	9.40	188	6.50	9126	5.18	22.7	4	400	
9:39	9.40	188	6.50	9290	5.1	22.7	4	400	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:39

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 5 gallons

Tubing Volume: 0.10 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-333D
Sample Date: 8/7/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:08

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			44.96			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			9.45			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			30	to	40	

Standing Water in Well (feet):	35.51
Well Diameter (in.)	2
Sample Depth (feet BGS):	35
Standpipe: TPVC to Ground Surface (feet)	3.2
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	4

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

INSTRUMENT MEASUREMENTS:

Start time: 9:00

Stop time: 9:52

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:52

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Coal tar-like Clarity: Clear

Total Purge Volume: 3.5 gallons

Tubing Volume: 0.27 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-339S
Sample Date: 8/7/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-10:13

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			12.45			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			6.00			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			3	to	10	

Standing Water in Well (feet):	6.45
Well Diameter (in.)	2
Sample Depth (feet BGS):	7
Standpipe: TPVC to Ground Surface (feet)	2.75
Roadbox: TPVC to Ground Surface (feet)	

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	4

Flow-Thru Cell Vol (mL): 200

Meter Type:	YSI, Lamotte	No.	1

INSTRUMENT MEASUREMENTS:

Start time: 12:25

Stop time: 13:10

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:10

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Coal tar-like Clarity: Clear

Total Purge Volume: 3.5 gallons

Tubing Volume: 0.07 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-339D
Sample Date: 8/7/2013
Sampler's Name: Matt Bergen

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-10:16

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	21.28					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	5.68					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	12	to	17			

Standing Water in Well (feet):	15.54
Well Diameter (in.)	5
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	3.1
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type:	Peristaltic	No.	3

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI, Lamotte No. 1

INSTRUMENT MEASUREMENTS:

Start time: 12:50

Stop time: 13:35

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:35

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Coal tar-like Clarity: Clear

Total Purge Volume: 4 gallons

Tubing Volume: 0.13 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Replaced tubing

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MAE MW-2
Sample Date: 8/6/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-7:54

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	13.75					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	9.12					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	Unknown					

Standing Water in Well (feet):	4.63
Well Diameter (in.)	2
Sample Depth (feet BGS):	11
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 11:30

Stop time: 12:10

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:10

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 3.5 gallons

Tubing Volume: 0.09 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Bees in standpipe cap

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-6
Sample Date: 8/7/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-8:37

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			19.05			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			11.75			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			5.5	to	15.5	

Standing Water in Well (feet):	7.3
Well Diameter (in.)	2
Sample Depth (feet BGS):	10
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 15:30

Stop time: 16:00

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 16:00

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 2.5 gallons

Tubing Volume: 0.11 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Replaced tubing in well

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-109
Sample Date: 8/6/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:53

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			19			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			11.41			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			10	to	20	

Standing Water in Well (feet):	7.59
Well Diameter (in.)	2
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☐ Yes ☒ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 13:45

Stop time: 14:20

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:20

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

very, very slight

Color: Clear Odor: Coal tar-like Clarity: Very slight sheen on purge water

Total Purge Volume: 2.5 gallons

Tubing Volume: 0.11 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-314S

Sample Date: 8/6/2013

Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-7:51

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	24.2					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	9.12					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	5 to 25					

Standing Water in Well (feet):	15.08
Well Diameter (in.)	2
Sample Depth (feet BGS):	15
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 12:30

Stop time: 13:15

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:15

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Slight fuel-oil like Clarity: trace sheen on purge water

Total Purge Volume: 5 gallons

Tubing Volume 0.15 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-314D

Sample Date: 8/6/2013

Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-7:52

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	43.4					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	8.15					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	33 to 43					

Standing Water in Well (feet):	35.25
Well Diameter (in.)	2
Sample Depth (feet BGS):	38
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-5

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 11:40

Stop time: 12:45

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:45

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 4 gallons **Tubing Volume:** 0.26 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Collected BD #1	

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-316S

Sample Date: 8/7/2013

Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:59

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	22.25					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	21.43					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	10	to	20			

Standing Water in Well (feet):	0.85
Well Diameter (in.)	2
Sample Depth (feet BGS):	22
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☒ Bail ☐ Pump / ☐ Low Flow

Pump Type: Bailer No.

Flow-Thru Cell Vol (mL): NA

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: NA

Stop time: NA

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:40

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None

Sample observations:

Color: Clear Odor: None Clarity: Very turbid

Total Purge Volume: 0.5 gallon Tubing Volume: NA

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

NR-Not Recorded

NA-Not applicable

Bailed to collect sample due to lack of water in well. 0.85 feet of water in well so the sample was collected from the bottom of the well.

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-316D
Sample Date: 8/7/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-10:00

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			31.2			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			21.5			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			22 to 27			

Standing Water in Well (feet):	9.7
Well Diameter (in.)	2
Sample Depth (feet BGS):	24.5
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Submersible No. _____

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 13:30

Stop time: 14:15

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:15

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 3.5 gallons **Tubing Volume:** 0.18 gallon

Notes:

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-337
Sample Date: 8/7/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-8:45

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	19.9					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	11.65					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	5 to 15					

Standing Water in Well (feet):	8.25
Well Diameter (in.)	2
Sample Depth (feet BGS):	10
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-5

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 15:00

Stop time: 15:35

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 15:35

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Fuel Oil-Like Clarity: Very slight sheen on purge water

Total Purge Volume: 4 gallons

Tubing Volume: 0.12 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-107

Sample Date: 8/7/2013

Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:00

Point of Measurement:	PVC Riser	☒ Steel Casing	☐ Ground
Total Well Depth (feet):	27.8		
Depth to LNAPL (feet):	-		
Depth to Water (feet):	19.75		
Depth to DNAPL (feet):	-		
Well Screened Interval (feet BGS):	16	to	26

Standing Water in Well (feet):	8.05
Well Diameter (in.)	2
Sample Depth (feet BGS):	21
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Submersible No.

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 8:30

Stop time: 11:40

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:40

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 4 gallons

Tubing Volume: 0.16 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-318S

Sample Date: 8/7/2013

Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:04

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	26.9					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	16.82					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	10 to 25					

Standing Water in Well (feet):	10.08
Well Diameter (in.)	2
Sample Depth (feet BGS):	18
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-5

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 9:30

Stop time: 10:40

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 10:40

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 4 gallons

Tubing Volume: 0.16 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

Collected BD#2	

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-318D
Sample Date: 8/7/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:05

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):			43.6			
Depth to LNAPL (feet):			-			
Depth to Water (feet):			15.71			
Depth to DNAPL (feet):			-			
Well Screened Interval (feet BGS):			30	to	40	

Standing Water in Well (feet):	27.89
Well Diameter (in.)	2
Sample Depth (feet BGS):	35
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Peristaltic No. P-6

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 11:00

Stop time: 12:10

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:10

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 3.5 gallons

Tubing Volume: 0.23 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
Weather:	Sunny 80's		

Well ID: MW-334S
Sample Date: 8/7/2013
Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:20

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	28.9					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	19.32					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	14	to	24			

Standing Water in Well (feet):	9.58
Well Diameter (in.)	2
Sample Depth (feet BGS):	19
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: Protective Casing- ☐ Poor ☒ Good Lock- ☒ Yes ☐ No Expansion Cap- ☒ Yes ☐ No Well ID- ☒ Yes ☐ No Concrete Collar- ☒ Yes ☐ No Well- ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Submersible No.

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 10:00

Stop time: 11:30

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:30

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: Slight Coal tar-like Clarity: Very slight sheen

Total Purge Volume: 4 gallons

Tubing Volume: 0.17 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

GROUNDWATER SAMPLING DATA SHEET

File No.	43654		
Project:	Former Tidewater Facility		
Location:	City: Pawtucket	State:	RI
<u>Weather:</u>	Sunny 80's		

Well ID: MW-334D

Sample Date: 8/7/2013

Sampler's Name: SDN

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 8/6/13-9:22

Point of Measurement:	PVC Riser	☒	Steel Casing	☐	Ground	☐
Total Well Depth (feet):	43.15					
Depth to LNAPL (feet):	-					
Depth to Water (feet):	18.58					
Depth to DNAPL (feet):	-					
Well Screened Interval (feet BGS):	28	to	38			

Standing Water in Well (feet):	24.57
Well Diameter (in.)	2
Sample Depth (feet BGS):	33
Standpipe: TPVC to Ground Surface (feet)	-
Roadbox: TPVC to Ground Surface (feet)	-

Well Condition: **Protective Casing-** ☐ Poor ☒ Good **Lock-** ☒ Yes ☐ No **Expansion Cap-** ☒ Yes ☐ No **Well ID-** ☒ Yes ☐ No **Concrete Collar-** ☒ Yes ☐ No **Well-** ☐ Poor ☒ Good

EQUIPMENT

Sample Method: ☐ Bail ☒ Pump / ☒ Low Flow

Pump Type: Submersible No.

Flow-Thru Cell Vol (mL): 200

Meter Type: YSI #2 No. Lamotte #2

INSTRUMENT MEASUREMENTS:

Start time: 12:00

Stop time: 12:50

[illegible]

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:50

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOCS	8260B	3	VOA	40	HCl	None
TPH	8100M	2	Amber Glass	1000	HCl	None
PAHs	8270C	2	Amber Glass	1000	None	None
Total Cyanide	9010	1	Plastic	250	NaOH	None
Dissolved Cyanide	9010	1	Plastic	250	NaOH	Filtered

Sample observations:

Color: Clear Odor: None Clarity: Clear

Total Purge Volume: 3 gallons **Tubing Volume:** 0.26 gallon

2" WELL = 0.163 GAL /FT = 0.617 LITERS/FT
1" WELL = 0.013 GAL /FT = 0.0492 LITERS/FT
3/8" TUBING - 0.0057 GAL/FT - 0.0217 LITERS/FT
1/4" TUBING - 0.0025 GAL/FT - 0.0096 LITERS/FT

Notes:

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 2
Date: 8/6/2013

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number:	YSI #1	Standard Solution:	1000	Reading:	1000
pH (s.u.):	Instrument and Number:	YSI #1	Standard Solution:	4/7	Reading:	4.01/7.01
DO (mg/L):	Instrument and Number:	YSI #1	Standard Solution:	100	Reading:	100
ORP (mvolts):	Instrument and Number:	YSI #1	Standard Solution:	231	Reading:	231
Turbidity (NTU):	Instrument and Number:	Lamotte #1	Standard Solution:	0/1	Reading:	0/1

Bump Check:

Specific Conductance:	Instrument and Number:	YSI #1	Standard Solution:	1000	Reading:	1037
pH (s.u.):	Instrument and Number:	YSI #1	Standard Solution:	4/7	Reading:	4.13/6.94
DO (mg/L):	Instrument and Number:	YSI #1	Standard Solution:	100	Reading:	101.9
ORP (mvolts):	Instrument and Number:	YSI #1	Standard Solution:	231	Reading:	232
Turbidity (NTU):	Instrument and Number:	Lamotte #1	Standard Solution:	0/1	Reading:	-0.10/1.18

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 2 of 2
Date: 8/6/2013

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number:	YSI #2	Standard Solution:	1000	Reading:	1000
pH (s.u.):	Instrument and Number:	YSI #2	Standard Solution:	4/7	Reading:	4.02/7.01
DO (mg/L):	Instrument and Number:	YSI #2	Standard Solution:	100	Reading:	100
ORP (mvolts):	Instrument and Number:	YSI #2	Standard Solution:	231	Reading:	231
Turbidity (NTU):	Instrument and Number:	Lamotte #2	Standard Solution:	0/1	Reading:	0/1

Bump Check:

Specific Conductance:	Instrument and Number:	YSI #2	Standard Solution:	1000	Reading:	1100
pH (s.u.):	Instrument and Number:	YSI #2	Standard Solution:	4/7	Reading:	4.06/7.17
DO (mg/L):	Instrument and Number:	YSI #2	Standard Solution:	100	Reading:	100
ORP (mvolts):	Instrument and Number:	YSI #2	Standard Solution:	231	Reading:	239.6
Turbidity (NTU):	Instrument and Number:	Lamotte #2	Standard Solution:	0/1	Reading:	-0.04/1.12

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 2
Date: 8/7/2013

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number:	YSI #1	Standard Solution:	1000	Reading:	1000
pH (s.u.):	Instrument and Number:	YSI #1	Standard Solution:	4/7	Reading:	4/7.01
DO (mg/L):	Instrument and Number:	YSI #1	Standard Solution:	100	Reading:	99.3
ORP (mvolts):	Instrument and Number:	YSI #1	Standard Solution:	231	Reading:	231.2
Turbidity (NTU):	Instrument and Number:	Lamotte #1	Standard Solution:	0/1	Reading:	0/1.09

Bump Check:

Specific Conductance:	Instrument and Number:	YSI #1	Standard Solution:	1000	Reading:	950
pH (s.u.):	Instrument and Number:	YSI #1	Standard Solution:	4/7	Reading:	4.11/6.96
DO (mg/L):	Instrument and Number:	YSI #1	Standard Solution:	100	Reading:	108
ORP (mvolts):	Instrument and Number:	YSI #1	Standard Solution:	231	Reading:	229
Turbidity (NTU):	Instrument and Number:	Lamotte #1	Standard Solution:	0/1	Reading:	-0.02/1.01

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 2 of 2
Date: 8/7/2013

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number:	YSI #2	Standard Solution:	1000	Reading:	1001
pH (s.u.):	Instrument and Number:	YSI #2	Standard Solution:	4/7	Reading:	3.99/7.01
DO (mg/L):	Instrument and Number:	YSI #2	Standard Solution:	100	Reading:	101.1
ORP (mvolts):	Instrument and Number:	YSI #2	Standard Solution:	231	Reading:	230.5
Turbidity (NTU):	Instrument and Number:	Lamotte #2	Standard Solution:	0/1	Reading:	0.01/0.99

Bump Check:

Specific Conductance:	Instrument and Number:	YSI #2	Standard Solution:	1000	Reading:	971
pH (s.u.):	Instrument and Number:	YSI #2	Standard Solution:	4/7	Reading:	4.12/6.97
DO (mg/L):	Instrument and Number:	YSI #2	Standard Solution:	100	Reading:	111
ORP (mvolts):	Instrument and Number:	YSI #2	Standard Solution:	231	Reading:	232
Turbidity (NTU):	Instrument and Number:	Lamotte #2	Standard Solution:	0/1	Reading:	-0.10/0.91

LOW FLOW CALIBRATION SHEET

File No. 43654.00 Task 36
Project: Former Tidewater Facility
Location: City: Pawtucket State: RI

Page: 1 of 1
Date: 8/8/2013

LOW FLOW CALIBRATION:

Initial Calibration:

Specific Conductance:	Instrument and Number:	YSI #1	Standard Solution:	1000	Reading:	991
pH (s.u.):	Instrument and Number:	YSI #1	Standard Solution:	4/7	Reading:	4.01/7
DO (mg/L):	Instrument and Number:	YSI #1	Standard Solution:	100	Reading:	100.5
ORP (mvolts):	Instrument and Number:	YSI #1	Standard Solution:	231	Reading:	230.8
Turbidity (NTU):	Instrument and Number:	Lamotte #1	Standard Solution:	0/1	Reading:	0/1.00

Bump Check:

Specific Conductance:	Instrument and Number:	YSI #1	Standard Solution:	1000	Reading:	1021
pH (s.u.):	Instrument and Number:	YSI #1	Standard Solution:	4/7	Reading:	4.17/7.00
DO (mg/L):	Instrument and Number:	YSI #1	Standard Solution:	100	Reading:	91.1
ORP (mvolts):	Instrument and Number:	YSI #1	Standard Solution:	231	Reading:	232.1
Turbidity (NTU):	Instrument and Number:	Lamotte #1	Standard Solution:	0/1	Reading:	0.10/0.93

APPENDIX C

INVESTIGATION DERIVED WASTE DISPOSAL MANIFESTS

Truck # 5139

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RIP000035216	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 006047421 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		
Generator's Phone: (781) 907-3647 ATTN: Susan Brochu					
6. Transporter 1 Company Name Clean Harbors Environmental Services 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 of Braintree Inc 1 Hill Avenue Braintree, MA 02184			U.S. EPA ID Number MAD053452637		
Facility's Phone: (781) 380-7100					
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity
			No.	Type	12. Unit Wt./Vol.
		1. NON DOT REGULATED MATERIAL (PURGEWATER)	003	DM	165
		2. NON RCRA HAZARDOUS WASTE SOLIDS, (NA), EMPTY DRUMS, LAST CONTAINED OIL	001	DM	20
		3.			
		4.			
13. Waste Codes					
					MA01 R015
					MA99
14. Special Handling Instructions and Additional Information 1. T26701RTR 3XSS 2. CH367518 1XSS					
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 PAUL D. HOERN Narragansett Electric Co.					Month Day Year 10/22/13
16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials				
	Transporter 1 Printed/Typed Name Mike McLaughlin		Signature <i>Mike McLaughlin</i>		Month Day Year 8/27/13
	Transporter 2 Printed/Typed Name		Signature		Month Day Year
DESIGNATED FACILITY	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. H141	2. H141	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 Huyen Hoang		Signature <i>Huyen Hoang</i>		Month Day Year 8/27/13

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RI000034791		2. Page 1 of 1		3. Emergency Response Phone (800) 483-3718		4. Manifest Tracking Number 005279330 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					
Generator's Phone: (781) 907-3647						ATTN: Susan Brochu					
6. Transporter 1 Company Name Clean Harbors Environmental Services 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 of Braintree Inc 1 Hill Avenue Braintree, MA 02184						U.S. EPA ID Number MAD053452637					
Facility's Phone: (781) 380-7100											
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))				10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes	
						No.	Type				
	x	1. HA3082, HAZARDOUS WASTE, LIQUID, N.O.S. (BENZENE), PG III				1	DM	5	G	D018	
		2. NON DOT REGULATED MATERIAL, (OILY DEBRIS)				1	DM	60	P	MA01 R015	
		3.									
	4.										
14. Special Handling Instructions and Additional Information 1. CH244579 ER08171 2. P40179RIR (1xSSDM) (1xSSDM)											
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/Officer's Printed/Typed Name DAVID PETTY											
Signature <i>David Petty</i>											
Month Day Year 11/26/12											
INT'L	16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____										
	Transporter signature (for exports only): _____										
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials										
	Transporter 1 Printed/Typed Name Michael Ritucci										
Signature <i>Michael Ritucci</i>											
Month Day Year 11/26/12											
Transporter 2 Printed/Typed Name											
Signature											
Month Day Year											
DESIGNATED FACILITY	18. Discrepancy NOT A HAZARDOUS WASTE IN RI. THE WASTE DESCRIBED ON LINE 9.b.1 IS MGP EXEMPT										
	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. H141			2. H141			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 Michael Ritucci											
Signature <i>Michael Ritucci</i>											
Month Day Year 11/26/12											

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RIP000032293	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 005279076 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 Services 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 of Braintree Inc 1 Hill Avenue Braintree, MA 02184			U.S. EPA ID Number MAD053452637			
Facility's Phone: (781) 380-7100						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.
	1. NON DOT REGULATED MATERIAL (OILY DEBRIS)		01 DM 60 P			
	2. NON DOT REGULATED MATERIAL (PURGEWATER)		03 DM 130 G			
	3.					
	4.					
13. Waste Codes MA01 R015						
14. Special Handling Instructions and Additional Information 1 R40179RIP 1XSS 2 T26781RIP 3XSS						
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/Officer's Printed/Typed Name AGENT FOR WASTE Signature FRANCISCO BRITO Month Day Year 7/23/12						
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 FRANCISCO BRITO			Signature Francisco Brito		Month Day Year 7/23/12	
Transporter 2 Printed/Typed Name Mike McLaughlin			Signature Mike McLaughlin		Month Day Year 7/25/12	
18. Discrepancy						
18a. Discrepancy Indication Space ☐ Quantity ☒ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection						
18b. Alternate Facility (or Generator) Manifest Reference Number: 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. H141		2. H141		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 Hunter Hoang			Signature Hunter Hoang		Month Day Year 7/25/12	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RI P000034312	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 005278913 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 Services 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 of Braintree Inc 1 Hill Avenue Braintree, MA 02184				U.S. EPA ID Number MAD053452637			
Facility's Phone: (781) 380-7100							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type				
GENERATOR X	1. HA3082. HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	01	DM	5	G	R015	D018
	2. NON DOT REGULATED MATERIAL, (ONLY DEBRIS)	01	DM	50	P	MA01	R015
	3.						
	4.						
14. Special Handling Instructions and Additional Information 1. CH075269H ERG#171 IX55 2. R40179RIR IX55							
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/Officer's Printed/Typed Name Mike McLaughlin				Signature 		Month Day Year 5 7 12	
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 Mike McLaughlin				Signature 		Month Day Year 5 7 12	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy NOT A HAZARDOUS WASTE IN RI. THE WASTE DESCRIBED ON INC 9.6.1 IS MGP EXEMPT.							
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. H141		2. H141		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 Nguyen Hoang				Signature 		Month Day Year 5 10 12	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RI000034932	2. Page 1 of 1 of 2	3. Emergency Response Phone (800) 443-3718	4. Manifest Tracking Number 004003707 FLE	
5. Generator's Name and Mailing Address Harrigansett 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 Services Inc						
U.S. EPA ID Number MAD039322250						
7. Transporter 2 Company Name Clean Harbors Environmental Services Inc						
U.S. EPA ID Number MAD039322250						
8. Designated Facility Name and Site Address Clean Harbors of Braintree Inc 1 Hill Avenue Braintree, MA 02184						
U.S. EPA ID Number MAD053452637						
Facility's Phone: (781) 380-7160						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity
				No.	Type	12. Unit Wt./Vol.
	1	NON DOT REGULATED MATERIAL (DILT DEBRIS)		05	DM	300 P
	2					
	3					
13. Waste Codes MA01 R015						
14. Special Handling Instructions and Additional Information 1 R40179RIR 5x55						
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/Officer's Printed/Typed Name Mike M'Laughlin						
Signature [Signature]						
Month Day Year 2 7 13						
TRANSPORTER	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 Mike M'Laughlin					
	Signature [Signature]					
	Month Day Year 2 7 13					
Transporter 2 Printed/Typed Name Victor Delgado						
Signature [Signature]						
Month Day Year 2 7 13						
DESIGNATED FACILITY	18. Discrepancy					
	18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection					
	Manifest Reference Number: _____ U.S. EPA ID Number _____					
	18b. Alternate Facility (or Generator) 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. H141		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 Huyen Hoang						
Signature [Signature]						
Month Day Year 2 8 13						

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number <i>RIP00034132</i>	2. Page 1 of 1	3. Emergency Response Phone <i>1-800-424-2718</i>	4. Manifest Tracking Number 004003707 FLE												
5. Generator's Name and Mailing Address <i>Narragansett Electric Company 40 Sylvan Road Waltham, MA 02481</i>						Generator's Site Address (if different than mailing address) <i>200 Taft Street Pawtucket, RI 02862</i>											
6. Transporter 1 Company Name <i>Clean Harbors Environmental Services Inc</i>						U.S. EPA ID Number <i>MA0039322250</i>											
7. Transporter 2 Company Name <i>Clean Harbors Environmental Services Inc</i>						U.S. EPA ID Number <i>MA0039322250</i>											
8. Designated Facility Name and Site Address <i>Granite State of Materials Inc 100 Avenue Granite, MA 02184</i>						U.S. EPA ID Number <i>MA003452627</i>											
Facility's Phone: <i>(781) 380-7100</i>																	
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) <i>NON-FLAMMABLE LIQUID, CORROSIVE</i>		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes									
				No.	Type												
14. Special Handling Instructions and Additional Information <i>1. HAZARDOUS WASTE</i>																	
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/Officer's Printed/Typed Name <i>Mike McLaughlin</i>										Signature <i>[Signature]</i>		Month <i>1</i>		Day <i>7</i>		Year <i>13</i>	
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 <i>Mike McLaughlin</i>										Signature <i>[Signature]</i>		Month <i>2</i>		Day <i>7</i>		Year <i>13</i>	
Transporter 2 Printed/Typed Name <i>Mike DeGado</i>										Signature <i>[Signature]</i>		Month <i>2</i>		Day <i>7</i>		Year <i>13</i>	
18. Discrepancy																	
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection																	
18b. Alternate Facility (or Generator)										Manifest Reference Number:				U.S. EPA ID Number:			
Facility's Phone:																	
18c. Signature of Alternate Facility (or Generator)										Signature <i>[Signature]</i>		Month <i>2</i>		Day <i>8</i>		Year <i>13</i>	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)																	
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 <i>Hansen</i>										Signature <i>[Signature]</i>		Month <i>2</i>		Day <i>8</i>		Year <i>13</i>	

DESIGNATED FACILITY TO GENERATOR

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RIP000033182	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 004001339 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 Services 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 of Braintree Inc 1 Hill Avenue Braintree, MA 02184				U.S. EPA ID Number MAD053452637			
Facility's Phone: (781) 380-7100							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
X	1. HA3077. HAZARDOUS WASTE, SOLID, N.O.S., (BENZENE), 9, PG III	02 DM		600	P	R015	D018
X	2. HA3082. HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	01 DM		40	G	R015	D018
	3. NON DOT REGULATED MATERIAL, (OILY DEBRIS)	01 DM		80	P	MA01	R015
	4.						
14. Special Handling Instructions and Additional Information 1. US7265H 2X55 ERG#171 2. CH075269H 1X55 ERG#171 3. R40179RIR 1X55							
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/Offero's Printed/Typed Name AGENT FOR THE GENERATOR FRANCISCO BATO Signature Francisco Bato Month 8 Day 26 Year 11							
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 FRANCISCO BATO				Signature Francisco Bato		Month 8 Day 26 Year 11	
Transporter 2 Printed/Typed Name John Dugan				Signature John Dugan		Month 8 Day 26 Year 11	
18. Discrepancy NOT A HAZARDOUS WASTE IN RI THE WASTE DESCRIBED ONLINE 9.1 AND 9.2 ARE MGP EXEMPT.							
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. H141		2. H141		3. H141		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 Dugan				Signature John Dugan		Month 08 Day 26 Year 11	

15

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number RIP000033366	2. Page 1 of 1	3. Emergency Response Phone (800) 453-3718	4. Manifest Tracking Number 003099866 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			
Generator's Phone: (781) 907-3647 ATTN: Susan Brochu						
6. Transporter 1 Company Name Clean Harbors Environmental Services Inc			U.S. EPA ID Number MA0039322250			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address Clean Harbors of Braintree Inc 1 Hill Avenue Braintree, MA 02184			U.S. EPA ID Number MA053452637			
Facility's Phone: (781) 380-7100						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
1. X	HA3082 HAZARDOUS WASTE LIQUID N.O.S. (BENZENE) 9. PG III	01	DM	15	G	R015 D018
2.	NON DOT REGULATED MATERIAL (OILY DEBRIS)	01	DM	50	P	MA01 R015
3.	NON DOT REGULATED MATERIAL (PURGEWATER)	01	DM	60	P	MA01 R015
4.						
14. Special Handling Instructions and Additional Information 1. CH07524SH IXS S EKG#171 2. R401796IR IXS S 3. T26781RIR IXS S						
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 AGENT FOR HARRY FRANCISCO Berto		Signature [Signature]		Month Day Year 12/13/12		
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 Francisco Berto		Signature [Signature]		Month Day Year 12/13/12		
Transporter 2 Printed/Typed Name		Signature		Month Day Year		
18. Discrepancy NOT A HAZARDOUS WASTE IN RI. THE WASTE DESCRIBED ON LINE 9.b.1 IS MGP EXEMPT.						
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. H141	2. H141	3. H141	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 Huyen Hoang		Signature [Signature]		Month Day Year 12/13/12		

APPENDIX D

LABORATORY DATA REPORTS

Appendix D Supplemental QA/QC Information for 2011 and 2012

During the 2011 sampling round, twenty-six (26) groundwater samples, two (2) blind duplicate samples and three (3) trip blanks were submitted to GZA's Environmental Chemistry Lab (ECL) in Hopkinton, MA 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 blanks were below the laboratory reporting limit for all 67 targeted compounds. Two duplicate sample sets (Set #1 – MW-339S and BD#1 and Set #2 – MW-312D and BD#2) were also submitted for VOCs, PAH, TPH, total cyanide and dissolved cyanide analysis to evaluate sample reproducibility. The relative percent difference (RPD) was calculated for each compound. Elevated RPDs (more than 40% difference) were noted for PAHs in one sample set (MW-312D and BD#2). Given the nature of the observed Site impacts, the variability in the PAHs results in these samples does not significantly affect data usability.

During the 2012 sampling round, twenty-six (26) groundwater samples, two (2) blind duplicate samples and three (3) trip blanks were submitted to ESS Laboratory in Cranston, RI 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 blanks were below the laboratory reporting limit for all 74 targeted compounds. Two duplicate sample sets (Set #1 – MW-7 and BD071112 and Set #2 – MW-334S and BD-71012) were also submitted for VOCs, PAH, TPH, total cyanide and dissolved cyanide analysis to evaluate sample reproducibility. The RPD was calculated for each compound and was within acceptable ranges (less than 40% difference).

Copies of the original laboratory data, laboratory QA/QC, methods, and chain-of-custody forms for 2011 and 2012 are provided for reference in Appendix D.

CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Date Received: 7/27/11
Date Reported: 8/2/11
P.O. #: 8-35210
Work Order #: 1107-14456

DESCRIPTION: GZA FILE #03.0043654.00 FORMER TIDEWATER FACILITY, PAWT. RI

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

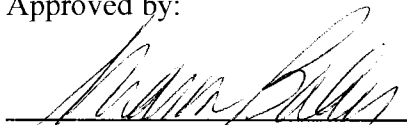
Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.
The Certificate of Analysis shall not be reproduced except in full, without written approval of R. I. Analytical.
Results relate only to samples submitted to the laboratory for analysis.
Test results are not blank corrected.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Sharon Baker
MIS / Data Reporting Manager

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/27/11

Work Order #: 1107-14456

GZA FILE #03.0043654.00 FORMER TIDEWATER FACILITY, PAWT. RI

Sample # 001

SAMPLE DESCRIPTION: MW-107

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/26/2011 @ 13:55

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.04	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 002

SAMPLE DESCRIPTION: MW-109

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/26/2011 @ 17:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.18	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 003

SAMPLE DESCRIPTION: MW-318S

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/26/2011 @ 14:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.01	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 004

SAMPLE DESCRIPTION: MW-318D

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/26/2011 @ 16:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	<0.01	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 005

SAMPLE DESCRIPTION: MW-334S

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/26/2011 @ 13:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.02	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/27/11

Work Order #: 1107-14456

GZA FILE #03.0043654.00 FORMER TIDEWATER FACILITY, PAWT. RI

Sample # 006

SAMPLE DESCRIPTION: MW-334D**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/26/2011 @ 13:45

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.02	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 007

SAMPLE DESCRIPTION: MW-314S**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/26/2011 @ 09:45

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.10	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 008

SAMPLE DESCRIPTION: MW-314D**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/26/2011 @ 12:23

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.32	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	0.05	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 009

SAMPLE DESCRIPTION: MW-337**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/26/2011 @ 16:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.19	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

Sample # 010

SAMPLE DESCRIPTION: TB-1/MW-6**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/26/2011 @ 14:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.21	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	0.04	0.01	mg/l	SM 4500CN C E	8/2/11	EC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/27/11

Work Order #: 1107-14456

GZA FILE #03.0043654.00 FORMER TIDEWATER FACILITY, PAWT. RI

Sample # 011

SAMPLE DESCRIPTION: MOE/MW-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/26/2011 @ 11:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.06	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/2/11	EC

QA/QC Report

Client: GZA GeoEnvironmental Labs

WO #: 1107-14456

Date: 8/2/2011

-Method Blanks Results-

Parameter	Units	Results	Date Analyzed
Total Cyanide	mg/l	<0.01	7/29/2011
Dissolved Free Cyanide	mg/l	<0.01	8/02/2011

-LCS/LCS Duplicate Data Results-

Parameter	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
Total Cyanide	0.10	0.105	105	0.102	102	3	7/29/2011
Dissolved Free Cyanide	0.10	0.101	101	0.097	97	4	8/02/2011

Case Narrative

Date: 8/2/2011

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Project: GZA FILE #03.0043654.00 FORMERTIDEWATER FACILITY, PAWT. RI

RIAL WO#: 1107-14456

R.I. Analytical Laboratories received Eleven Groundwater samples from the GZA GeoEnvironmental Labs on July 27, 2011. The samples were transported and delivered to the laboratory in a cooler on ice (at 5.4 degrees C). The samples were received in good condition. Upon arrival the samples were logged into our LIMS system and assigned a work order number of 1107-14456.



Sharon Baker
Data Reporting / MIS Manager



GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: **MA092** NH: **2028**
CT: **PH0579** RI: **LAO00236**
NELAC - NYS DOH: **11063**

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project No.: **05.0043654.00**
Work Order No.: **1107-00118**
Date Received: **07/27/2011**
Date Reported: **08/03/2011**

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
07/26/2011	Aqueous	1107-00118 001	MW-107
07/26/2011	Aqueous	1107-00118 002	MW-109
07/26/2011	Aqueous	1107-00118 003	MW-318S
07/26/2011	Aqueous	1107-00118 004	MW-318D
07/26/2011	Aqueous	1107-00118 005	MW-334S
07/26/2011	Aqueous	1107-00118 006	MW-334D
07/26/2011	Aqueous	1107-00118 007	MW-314S
07/26/2011	Aqueous	1107-00118 008	MW-314D
07/26/2011	Aqueous	1107-00118 009	MW-337
07/26/2011	Aqueous	1107-00118 010	TB-1/MW-6
07/26/2011	Aqueous	1107-00118 011	M&E/MW-2
07/26/2011	Aqueous	1107-00118 012	Trip Blank



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 07/27/11 via x_GZA courier, EC, FEDEX, or hand delivered. The temperature of the x_temperature blank/ cooler air, was 5.7 degrees C. The temperature requirement for most analyses is above freezing to 6 degrees C. The samples were received intact for all requested analyses.

The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

2. Subcontracted Analyses

Analyses for Total and Dissolved Cyanide were subcontracted to Rhode Island Analytical, Warwick RI (RIAL); Certification MA: MA-RI015, NH: 253700 A&B, CT: PH-0508, ME: RI015, RI: RI-033, NY:11726,

The data is included in GZA's report for ease of electronic data transfer and is indicated by "XXX" in the tech column. The data report from the subcontractor is attached.

3. EPA Method 8260 - VOCs

The elevated reporting limits for samples MW-109 (1107-00118-002) and MW-318S (1107-00118-003) are due to initial dilution of the sample in order to get target compounds within the calibration range of the instrument. The dilution was based upon screening data for the sample.

Attach QC 8260 7/28/2011 "S" - Aqueous

4. EPA Method 8270 - SVOCs (PAHs)

Per the Project Manager, a subset of the analyte list for Method 8270 (Semivolatile Organic Compounds by GC/MS) has been provided.

The surrogate recovery for sample MW-334D (1107-00118-006) exceeded the acceptance criteria of 70-130%. The specific outlier includes: nitrobenzene-D5 (21.7%). Method 8270D permits one surrogate to be outside acceptance criteria.

Attach QC 8270 7/29/2011 "I" - Aqueous

Attach QC 8270 8/01/2011 "I" - Aqueous

5. Total Petroleum Hydrocarbons (TPH)

Attach QC TPH 07/28/11 - Aqueous



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
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Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Data Authorized By: _____

GZA GeoEnvironmental, Inc. has NELAC validation for the following methods:

Wastewater: Methods 624,625,245.1,150.2,120.1, 200.7 (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti).

Aqueous: Methods 8260B, 8270D, 8081B, 8082A, 7470, 150.2, 120.1, 1311, 6010C (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti), 300.0 (Cl, F, SO₄, NO₃, NO₂, Ophos), MA DEP EPH/VPH.

Soil: Methods 8260B, 8270D, 8081B, 8082A, 7471B, 9045, 1311, 6010C (PP13, RCRA8, and Fe, Mg, Mn, Al, V, Co, Mo, Sn, Ca), MA DEP VPH/EPH.

Abbreviations:

% R = % Recovery

DF = Dilution Factor

DFS = Dilution Factor Solids

CF = Calculation Factor

DO = Diluted Out

Method Key:

Method 8260: The current version of the method is 8260B.

Method 8270: The current version of the method is 8270D.

Method 6010: The current version of the method is 6010C.

Method 8081: The current version of the method is 8081B.

Method 8082: The current version of the method is 8082A.

Method 7471: The current version of the method is 7471B.

The current Metals preparation methods are: 3010A (aqueous) and 3051 (solid).

Please note that the laboratory signed copy of the chain of custody record is an integral part of the data report.

The laboratory report shall not be reproduced except in full without the written consent of the laboratory.

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-107**

Sample No.: **001**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-107**

Sample No.: **001**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	105	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	113	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-107**

Sample No.: **001**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/29/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	42.3	30-130	% R	CMG	07/29/2011
***2-Fluorobiphenyl	EPA 8270	44.8	30-130	% R	CMG	07/29/2011
***P-Terphenyl-D14	EPA 8270	32.3	30-130	% R	CMG	07/29/2011
Extraction	EPA 3510C	1		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		<200	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		46.4	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.04	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM-4500CN-C E	<0.01	0.01	mg/L	XXX	08/02/2011
RI Excel Deliverables						
GB Groundwater Objective	Excel Deliverable					



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-109**

Sample No.: **002**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Vinyl chloride	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<25	25	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Carbon disulfide	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Methyl tert-butyl ether	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
2-Butanone (MEK)	EPA 8260	<25	25	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<25	25	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Carbon tetrachloride	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Benzene	EPA 8260	30	2.5	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
4-Methyl-2-pentanone (MIBK)	EPA 8260	<25	25	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Toluene	EPA 8260	2.5	2.5	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-109**

Sample No.: **002**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
2-Hexanone	EPA 8260	<25	25	ug/L	MQS	07/28/2011
1,3-Dichloropropane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	57	2.5	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	19	5.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	26	2.5	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	26	2.5	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
n-Propylbenzene	EPA 8260	14	2.5	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	9.7	2.5	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	210	2.5	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	2.5	2.5	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	6.9	2.5	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	7.5	2.5	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
1,2-Dibromo-3-chloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	300	5.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<2.5	2.5	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	100	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-109**

Sample No.: **002**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***Toluene-D8	EPA 8260	108	70-130	% R	MQS	07/28/2011
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	2.5		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/29/2011
Naphthalene	EPA 8270	96	2.0	ug/L	CMG	07/29/2011
2-Methylnaphthalene	EPA 8270	21	2.0	ug/L	CMG	07/29/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthene	EPA 8270	2.3	2.0	ug/L	CMG	07/29/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	36.0	30-130	% R	CMG	07/29/2011
***2-Fluorobiphenyl	EPA 8270	38.2	30-130	% R	CMG	07/29/2011
***P-Terphenyl-D14	EPA 8270	47.2	30-130	% R	CMG	07/29/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		660	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		41.9	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.18	0.01	mg/L	XXX	07/29/2011
Dissolved Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/02/2011



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Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-318S**

Sample No.: **003**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<100	100	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<50	50	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<10	10	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<100	100	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<100	100	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Benzene	EPA 8260	89	10	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<100	100	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Toluene	EPA 8260	72	10	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<20	20	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<100	100	ug/L	MQS	07/28/2011



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Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-318S**

Sample No.: **003**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	10	10	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	82	20	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	39	10	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<20	20	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	17	10	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	40	10	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<20	20	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	1100	20	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	119	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/28/2011



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Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-318S**

Sample No.: **003**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	105	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	10		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	380	10	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	44	10	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	14	10	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	12	10	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<10	10	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	42.6	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	46.2	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	32.6	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		2900	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		48.2	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.01	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-318D**

Sample No.: **004**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

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530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-318D**

Sample No.: **004**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	112	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	109	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-318D**

Sample No.: **004**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/29/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	57.2	30-130	% R	CMG	07/29/2011
***2-Fluorobiphenyl	EPA 8270	58.4	30-130	% R	CMG	07/29/2011
***P-Terphenyl-D14	EPA 8270	31.4	30-130	% R	CMG	07/29/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		<200	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		42.0	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	<0.01	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-334S**

Sample No.: **005**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	1.0	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	1.1	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-334S**

Sample No.: **005**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	14	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	109	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-334S**

Sample No.: **005**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	101	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/29/2011
Naphthalene	EPA 8270	7.5	2.0	ug/L	CMG	07/29/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/29/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	42.6	30-130	% R	CMG	07/29/2011
***2-Fluorobiphenyl	EPA 8270	58.4	30-130	% R	CMG	07/29/2011
***P-Terphenyl-D14	EPA 8270	52.7	30-130	% R	CMG	07/29/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		220	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		45.2	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.02	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-334D**

Sample No.: **006**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	1.1	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	1.3	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	1.4	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-334D**

Sample No.: **006**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	9.7	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	107	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-334D**

Sample No.: **006**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/30/2011
Naphthalene	EPA 8270	3.6	2.0	ug/L	CMG	07/30/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	21.7	* 30-130	% R	CMG	07/30/2011
***2-Fluorobiphenyl	EPA 8270	42.5	30-130	% R	CMG	07/30/2011
***P-Terphenyl-D14	EPA 8270	45.4	30-130	% R	CMG	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		<200	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		40.5	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.02	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

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Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-314S**

Sample No.: **007**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-314S**

Sample No.: **007**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	1.6	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	114	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	110	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-314S**

Sample No.: **007**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	98.0	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/30/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	38.0	30-130	% R	CMG	07/30/2011
***2-Fluorobiphenyl	EPA 8270	35.8	30-130	% R	CMG	07/30/2011
***P-Terphenyl-D14	EPA 8270	46.7	30-130	% R	CMG	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		1400	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		55.1	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.10	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-314D**

Sample No.: **008**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	1.0	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-314D**

Sample No.: **008**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	107	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	110	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-314D**

Sample No.: **008**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/30/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthene	EPA 8270	2.7	2.0	ug/L	CMG	07/30/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	45.7	30-130	% R	CMG	07/30/2011
***2-Fluorobiphenyl	EPA 8270	44.1	30-130	% R	CMG	07/30/2011
***P-Terphenyl-D14	EPA 8270	50.4	30-130	% R	CMG	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		330	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		59.6	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.32	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	0.05	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-337**

Sample No.: **009**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-337**

Sample No.: **009**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	114	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **MW-337**

Sample No.: **009**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	103	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	55.0	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	53.8	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	41.7	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		460	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		49.3	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.19	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **TB-1/MW-6**

Sample No.: **010**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/28/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Acetone	EPA 8260	30	10	ug/L	MQS	07/28/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/28/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Benzene	EPA 8260	34	1.0	ug/L	MQS	07/28/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Toluene	EPA 8260	2.5	1.0	ug/L	MQS	07/28/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

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Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **TB-1/MW-6**

Sample No.: **010**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Ethylbenzene	EPA 8260	36	1.0	ug/L	MQS	07/28/2011
m&p-Xylene	EPA 8260	5.5	2.0	ug/L	MQS	07/28/2011
o-Xylene	EPA 8260	42	1.0	ug/L	MQS	07/28/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
Isopropylbenzene	EPA 8260	4.9	1.0	ug/L	MQS	07/28/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
N-Propylbenzene	EPA 8260	4.3	1.0	ug/L	MQS	07/28/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2,4-Trimethylbenzene	EPA 8260	3.2	1.0	ug/L	MQS	07/28/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
n-Butylbenzene	EPA 8260	1.2	1.0	ug/L	MQS	07/28/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/28/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Naphthalene	EPA 8260	11	2.0	ug/L	MQS	07/28/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/28/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	102	70-130	% R	MQS	07/28/2011
***Toluene-D8	EPA 8260	110	70-130	% R	MQS	07/28/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **TB-1/MW-6**

Sample No.: **010**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	106	70-130	% R	MQS	07/28/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	3.8	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	38	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	8.2	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	8.1	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	3.1	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	48.8	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	50.6	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	43.7	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		1800	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		45.1	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.21	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	0.04	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

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Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **M&E/MW-2**

Sample No.: **011**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **M&E/MW-2**

Sample No.: **011**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	116	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**
Project No.: **05.0043654.00**

Date Received: **07/27/2011**
Date Reported: **08/03/2011**
Work Order No.: **1107-00118**

Sample ID: **M&E/MW-2**

Sample No.: **011**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	106	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011
PAHS BY GCMS	EPA 8270				CMG	07/30/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	07/30/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	39.9	30-130	% R	CMG	07/30/2011
***2-Fluorobiphenyl	EPA 8270	39.0	30-130	% R	CMG	07/30/2011
***P-Terphenyl-D14	EPA 8270	43.4	30-130	% R	CMG	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	07/30/2011
Hydrocarbon Content		<200	200	ug/L	RJD	07/30/2011
Surrogate:						
***p-Terphenyl		56.4	40-130	% R	RJD	07/30/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/28/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.06	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/02/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
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Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **Trip Blank**

Sample No.: **012**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

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Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **Trip Blank**

Sample No.: **012**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	108	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/29/2011



GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

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ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/27/2011**

Date Reported: **08/03/2011**

Work Order No.: **1107-00118**

Sample ID: **Trip Blank**

Sample No.: **012**

Sample Date: **07/26/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	101	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/28/2011

Method Blank

Date Analyzed:	7/28/2011	
Volatile Organics	Conc. ug/L	Acceptance Limit
dichlorodifluoromethane	< 1.0	< 1.0
chloromethane	< 1.0	< 1.0
vinyl chloride	< 0.5	< 0.5
bromomethane	< 1.0	< 1.0
chloroethane	< 0.5	< 0.5
trichlorofluoromethane	< 1.0	< 1.0
diethyl ether	< 2.5	< 2.5
acetone	< 10	< 10
1,1-dichloroethene	< 0.5	< 0.5
carbon disulfide	< 5.0	< 5.0
dichloromethane	< 1.0	< 1.0
methyl-tert-butyl-ether	< 0.5	< 0.5
trans-1,2-dichloroethene	< 0.5	< 0.5
1,1-dichloroethane	< 0.5	< 0.5
2-butanone	< 10	< 10
2,2-dichloropropane	< 0.5	< 0.5
cis-1,2-dichloroethene	< 0.5	< 0.5
chloroform	< 0.5	< 0.5
bromochloromethane	< 0.5	< 0.5
tetrahydrofuran	< 5.0	< 5.0
1,1,1-trichloroethane	< 0.5	< 0.5
1,1-dichloropropene	< 0.5	< 0.5
carbon tetrachloride	< 0.5	< 0.5
1,2-dichloroethane	< 0.5	< 0.5
benzene	< 0.5	< 0.5
trichloroethene	< 0.5	< 0.5
1,2-dichloropropane	< 0.5	< 0.5
bromodichloromethane	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
4-methyl-2-pentanone	< 10	< 10
cis-1,3-dichloropropene	< 0.5	< 0.5
toluene	< 0.5	< 0.5
trans-1,3-dichloropropene	< 1.0	< 1.0
1,1,2-trichloroethane	< 0.5	< 0.5
2-hexanone	< 10	< 10
1,3-dichloropropane	< 0.5	< 0.5
tetrachloroethene	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
ethylbenzene	< 0.5	< 0.5
1,1,2,2-tetrachloroethane	< 0.5	< 0.5
m&p-xylene	< 1.0	< 1.0
o-xylene	< 0.5	< 0.5
styrene	< 0.5	< 0.5
bromoforn	< 1.0	< 1.0
isopropylbenzene	< 0.5	< 0.5
1,2,3-trichloropropane	< 0.5	< 0.5
bromobenzene	< 0.5	< 0.5
n-propylbenzene	< 0.5	< 0.5
2-chlorotoluene	< 0.5	< 0.5
1,3,5-trimethylbenzene	< 0.5	< 0.5
4-chlorotoluene	< 0.5	< 0.5
tert-butyl-benzene	< 0.5	< 0.5
1,2,4-trimethylbenzene	< 0.5	< 0.5
sec-butyl-benzene	< 0.5	< 0.5
p-isopropyltoluene	< 0.5	< 0.5
1,3-dichlorobenzene	< 0.5	< 0.5
1,4-dichlorobenzene	< 0.5	< 0.5
n-butylbenzene	< 0.5	< 0.5
1,2-dichlorobenzene	< 0.5	< 0.5
1,2-dibromo-3-chloropropane	< 2.5	< 2.5
1,2,4-trichlorobenzene	< 0.5	< 0.5
hexachlorobutadiene	< 0.5	< 0.5
naphthalene	< 1.0	< 1.0

Laboratory Control Sample

Date Analyzed:	7/28/2011	
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits
dichlorodifluoromethane	105	70-130
chloromethane	117	70-130
vinyl chloride	97.3	80-120
bromomethane	98.2	70-130
chloroethane	99.0	70-130
trichlorofluoromethane	87.5	70-130
diethyl ether	95.6	70-130
acetone	87.0	70-130
1,1-dichloroethene	95.9	80-120
carbon disulfide	101	70-130
dichloromethane	101	70-130
methyl-tert-butyl-ether	99.0	70-130
trans-1,2-dichloroethene	103	70-130
1,1-dichloroethane	101	70-130
2-butanone	97.3	70-130
2,2-dichloropropane	103	70-130
cis-1,2-dichloroethene	104	70-130
chloroform	94.2	80-120
bromochloromethane	102	70-130
tetrahydrofuran	120	70-130
1,1,1-trichloroethane	91.0	70-130
1,1-dichloropropene	102	70-130
carbon tetrachloride	95.0	70-130
1,2-dichloroethane	90.9	70-130
benzene	103	70-130
trichloroethene	105	70-130
1,2-dichloropropane	111	80-120
bromodichloromethane	95.1	70-130
1,1,1,2-tetrachloroethane	99.1	70-130
4-methyl-2-pentanone	101	70-130
cis-1,3-dichloropropene	107	70-130
toluene	106	80-120
trans-1,3-dichloropropene	102	70-130
1,1,2-trichloroethane	95.1	70-130
2-hexanone	96.6	70-130
1,3-dichloropropane	93.9	70-130
tetrachloroethene	94.0	70-130
1,1,1,2-tetrachloroethane	95.6	70-130
1,1,1,2-tetrachloroethane	97.2	70-130
ethylbenzene	98.1	70-130
1,1,1,2-tetrachloroethane	94.6	70-130
ethylbenzene	97.6	80-120
1,1,2,2-tetrachloroethane	96.3	70-130
m&p-xylene	95.2	70-130
o-xylene	96.6	70-130
styrene	101	70-130
bromoforn	99.3	70-130
isopropylbenzene	101	70-130
1,2,3-trichloropropane	90.5	70-130
bromobenzene	98.8	70-130
n-propylbenzene	100.0	70-130
2-chlorotoluene	97.3	70-130
1,3,5-trimethylbenzene	98.6	70-130
4-chlorotoluene	96.8	70-130
tert-butyl-benzene	96.2	70-130
1,2,4-trimethylbenzene	99.4	70-130
sec-butyl-benzene	101	70-130
p-isopropyltoluene	98.3	70-130
1,3-dichlorobenzene	99.8	70-130
1,4-dichlorobenzene	99.8	70-130
n-butylbenzene	100.0	70-130
1,2-dichlorobenzene	97.6	70-130
1,2-dibromo-3-chloropropane	94.7	70-130
1,2,4-trichlorobenzene	100	70-130
hexachlorobutadiene	95.2	70-130
naphthalene	94.8	70-130

Laboratory Control Sample Duplicate

Date Analyzed:	7/28/2011	
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits
dichlorodifluoromethane	105	70-130
chloromethane	113	70-130
vinyl chloride	97.0	70-130
bromomethane	95.0	70-130
chloroethane	97.5	70-130
trichlorofluoromethane	86.5	70-130
diethyl ether	95.1	70-130
acetone	83.8	70-130
1,1-dichloroethene	91.9	70-130
carbon disulfide	93.4	70-130
dichloromethane	99.0	70-130
methyl-tert-butyl-ether	98.5	70-130
trans-1,2-dichloroethene	99.0	70-130
1,1-dichloroethane	100	70-130
2-butanone	103	70-130
2,2-dichloropropane	99.6	70-130
cis-1,2-dichloroethene	103	70-130
chloroform	95.3	70-130
bromochloromethane	103	70-130
tetrahydrofuran	112	70-130
1,1,1-trichloroethane	90.5	70-130
1,1-dichloropropene	98.7	70-130
carbon tetrachloride	94.0	70-130
1,2-dichloroethane	89.7	70-130
benzene	104	70-130
trichloroethene	103	70-130
1,2-dichloropropane	107	70-130
bromodichloromethane	95.5	70-130
1,1,1,2-tetrachloroethane	104	70-130
4-methyl-2-pentanone	107	70-130
cis-1,3-dichloropropene	109	70-130
toluene	106	70-130
trans-1,3-dichloropropene	101	70-130
1,1,2-trichloroethane	101	70-130
2-hexanone	104	70-130
1,3-dichloropropane	99.6	70-130
tetrachloroethene	95.4	70-130
1,1,1,2-tetrachloroethane	100	70-130
1,1,1,2-tetrachloroethane	101	70-130
ethylbenzene	98.7	70-130
1,1,1,2-tetrachloroethane	101	70-130
ethylbenzene	103	70-130
1,1,2,2-tetrachloroethane	94.6	70-130
m&p-xylene	100	70-130
o-xylene	100	70-130
styrene	104	70-130
bromoforn	103	70-130
isopropylbenzene	102	70-130
1,2,3-trichloropropane	100	70-130
bromobenzene	102	70-130
n-propylbenzene	102	70-130
2-chlorotoluene	99.0	70-130
1,3,5-trimethylbenzene	101	70-130
4-chlorotoluene	97.8	70-130
tert-butyl-benzene	100	70-130
1,2,4-trimethylbenzene	101	70-130
sec-butyl-benzene	102	70-130
p-isopropyltoluene	102	70-130
1,3-dichlorobenzene	100	70-130
1,4-dichlorobenzene	104	70-130
n-butylbenzene	101	70-130
1,2-dichlorobenzene	103	70-130
1,2-dibromo-3-chloropropane	105	70-130
1,2,4-trichlorobenzene	106	70-130
hexachlorobutadiene	96.7	70-130
naphthalene	109	70-130

Surrogates:	Recovery (%)	Acceptance Limits	Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Surrogates:	Recovery (%)	Acceptance Limits	Verdict	RPD	Acceptance Limits	Verdict
DIBROMOFLUOROMETHANE	106	70-130	DIBROMOFLUOROMETHANE	107	70-130	ok	DIBROMOFLUOROMETHANE	106	70-130	ok	1.18	<25	ok
1,2-DICHLOROETHANE-D4	99.6	70-130	1,2-DICHLOROETHANE-D4	113	70-130	ok	1,2-DICHLOROETHANE-D4	109	70-130	ok	4.15	<25	ok
1,2-DICHLOROETHANE-D4	111	70-130	1,2-DICHLOROETHANE-D4	111	70-130	ok	1,2-DICHLOROETHANE-D4	109	70-130	ok	1.62	<25	ok
4-BROMOFLUOROBENZENE	102	70-130	4-BROMOFLUOROBENZENE	102	70-130	ok	4-BROMOFLUOROBENZENE	103	70-130	ok	1.69	<25	ok
1,2-DICHLOROETHANE-D4	102	70-130	1,2-DICHLOROETHANE-D4	111	70-130	ok	1,2-DICHLOROETHANE-D4	114	70-130	ok	2.47	<25	ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	07/29/11	
Date Analyzed:	07/29/11	
File Name:	M9063	
Semi-Volatile Organics	Result	(ug/L)
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	61.8	30-130
2-FLUOROBIPHENYL	64.6	30-130
p-TERPHENYL-D14	73.2	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	07/29/11
Date Analyzed:	07/29/11
File Name:	M9064
Spike Concentration = 20ug/L	% Recovery
naphthalene	66.6
2-methylnaphthalene	65.2
acenaphthylene	71.8
acenaphthene	70.6
fluorene	76.5
phenanthrene	75.8
anthracene	77.1
fluoranthene	77.9
pyrene	79.9
benz [a] anthracene	79.4
chrysene	75.3
benzo [b] fluoranthene	76.8
benzo [k] fluoranthene	69.8
benzo [a] pyrene	73.9
indeno [1,2,3-cd] pyrene	74.2
dibenz [a,h] anthracene	74.3
benzo [ghi] perylene	73.2

Laboratory Control Sample Duplicate

Date Extracted:		07/29/11			
Date Analyzed:		07/29/11			
File Name:		M9065			
% Recovery	Acceptance Limits	Verdict	% Diff	Limits	Verdict
56.2	40-140	ok	17	<20	ok
54.2	40-140	ok	18	<20	ok
59.7	40-140	ok	18	<20	ok
58.8	30-130	ok	18	<20	ok
62.9	40-140	ok	19	<20	ok
64.0	40-140	ok	17	<20	ok
64.3	40-140	ok	18	<20	ok
66.4	40-140	ok	16	<20	ok
68.5	40-140	ok	15	<20	ok
65.9	40-140	ok	19	<20	ok
66.2	40-140	ok	13	<20	ok
63.8	40-140	ok	18	<20	ok
62.0	40-140	ok	12	<20	ok
63.9	40-140	ok	15	<20	ok
64.2	40-140	ok	15	<20	ok
62.7	40-141	ok	17	<20	ok
63.4	40-142	ok	14	<20	ok

CAM criteria allows 15% of analytes to exceed criteria.

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits	Verdict
NITROBENZENE-D5	70.9	30-130	ok	59.5	30-130	ok	17	<20	ok
2-FLUOROBIPHENYL	72.2	30-130	ok	60.0	30-130	ok	18	<20	ok
p-TERPHENYL-D14	78.0	30-130	ok	67.3	30-130	ok	15	<20	ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	08/01/11	
Date Analyzed:	08/02/11	
File Name:	M9095	
Semi-Volatile Organics	Result	(ug/L)
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	52.3	30-130
2-FLUOROBIPHENYL	61.2	30-130
p-TERPHENYL-D14	71.1	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	08/01/11		
Date Analyzed:	08/02/11		
File Name:	M9096		
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits	Verdict
naphthalene	56.4	40-140	ok
2-methylnaphthalene	56.3	40-140	ok
acenaphthylene	60.6	40-140	ok
acenaphthene	62.3	40-140	ok
fluorene	66.8	40-140	ok
phenanthrene	66.7	40-140	ok
anthracene	68.8	40-140	ok
fluoranthene	68.3	40-140	ok
pyrene	70.0	40-140	ok
benz [a] anthracene	64.3	40-140	ok
chrysene	70.3	40-140	ok
benzo [b] fluoranthene	73.9	40-140	ok
benzo [k] fluoranthene	61.7	40-140	ok
benzo [a] pyrene	70.1	40-140	ok
indeno [1,2,3-cd] pyrene	70.1	40-140	ok
dibenz [a,h] anthracene	70.4	40-140	ok
benzo [ghi] perylene	68.1	40-140	ok

Laboratory Control Sample Duplicate

Date Extracted:	08/01/11				
Date Analyzed:	08/02/11				
File Name:	M9097				
% Recovery	Acceptance Limits	Verdict	% Diff	Limits	Verdict
61.8	40-140	ok	9.1	<20	ok
58.8	40-140	ok	4.5	<20	ok
61.8	40-140	ok	2.0	<20	ok
60.2	30-130	ok	3.4	<20	ok
66.2	40-140	ok	0.84	<20	ok
70.1	40-140	ok	4.9	<20	ok
69.5	40-140	ok	0.95	<20	ok
71.4	40-140	ok	4.4	<20	ok
73.5	40-140	ok	4.8	<20	ok
69.5	40-140	ok	7.7	<20	ok
72.2	40-140	ok	2.6	<20	ok
73.6	40-140	ok	0.31	<20	ok
68.6	40-140	ok	11	<20	ok
72.7	40-140	ok	3.7	<20	ok
73.0	40-140	ok	4.0	<20	ok
72.9	40-141	ok	3.5	<20	ok
70.7	40-142	ok	3.8	<20	ok

CAM criteria allows 15% of analytes to exceed criteria.

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits	Verdict
NITROBENZENE-D5	60.5	30-130	ok	60.6	30-130	ok	0.25	<20	ok
2-FLUOROBIPHENYL	62.1	30-130	ok	62.5	30-130	ok	0.59	<20	ok
p-TERPHENYL-D14	67.0	30-130	ok	72.1	30-130	ok	7.3	<20	ok

GZA GEOENVIRONMENTAL, INC.
 ENVIRONMENTAL CHEMISTRY LABORATORY
 106 SOUTH STREET, HOPKINTON, MA 01748 (508)435-9244
 MASSACHUSETTS LABORATORY I.D. NO. MA092

TPH
TOTAL PETROLEUM HYDROCARBONS IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 07/28/11 Aqueous

METHOD BLANK	AQUEOUS	SOLID	
	ug/L-PPB	mg/kg - PPM	
TPH	<200	<10	
Surrogate:	Recovery (%)	Limits-Aqueous	Limits-Solid
***p-Terphenyl	53.9	40-130	40-130

LABORATORY CONTROL SAMPLE /	LCS	LCSD			
DUPLICATE LCS	Recovery (%)	Recovery (%)	Limits	RPD	Limits
TPH	68.9	68.7	40-150	0.29	<30
Surrogate:					
***p-Terphenyl	70.9	70.5			

*Matrix Spike / Duplicate Spike performed as per method and reported if assigned on the Chain of Custody.

W.O. # 107-2018
(for lab use only)

[illegible]

CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Date Received: 7/28/11
Date Reported: 8/3/11
P.O. #: 8-35217
Work Order #: 1107-14582

DESCRIPTION: GZA FILE# 03.0043654.00 FOMER TIDEWATER FACILITY

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

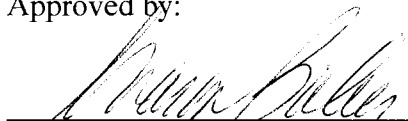
Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.
The Certificate of Analysis shall not be reproduced except in full, without written approval of R. I. Analytical.
Results relate only to samples submitted to the laboratory for analysis.
Test results are not blank corrected.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Sharon Baker
MIS / Data Reporting Manager

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/28/11

Work Order #: 1107-14582

GZA FILE# 03.0043654.00 FOMER TIDEWATER FACILITY

Sample # 001

SAMPLE DESCRIPTION: MW-333D**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/27/2011 @ 13:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	1.1	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.02	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 002

SAMPLE DESCRIPTION: MW-310S**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/27/2011 @ 10:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.06	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 003

SAMPLE DESCRIPTION: MW-310D**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/27/2011 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.12	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	0.15*	0.01	mg/l	SM 4500CN C E	8/3/11	EC

*TCN and FCNDISS analysis was performed a second time to confirm the deviation between the two results.

Two separate samples were provided for each of the two analyses.

Sample # 004

SAMPLE DESCRIPTION: MW-333S**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 7/27/2011 @ 13:10

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.15	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/28/11

Work Order #: 1107-14582

GZA FILE# 03.0043654.00 FOMER TIDEWATER FACILITY

Sample # 005

SAMPLE DESCRIPTION: MW-326S

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 16:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.49	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 006

SAMPLE DESCRIPTION: MW-326D

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 16:20

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.67	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 007

SAMPLE DESCRIPTION: MW-208

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 11:45

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.03	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 008

SAMPLE DESCRIPTION: MW-339D

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 12:18

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.13	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/28/11

Work Order #: 1107-14582

GZA FILE# 03.0043654.00 FOMER TIDEWATER FACILITY

Sample # 009

SAMPLE DESCRIPTION: MW-339S

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 10:50

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.44	0.01	mg/l	SM-4500CN-C E	7/29/11	EC
Dissolved Free Cyanide	0.08	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 010

SAMPLE DESCRIPTION: MW-201

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 12:40

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	4.0	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.13	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 011

SAMPLE DESCRIPTION: MW-312S

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 16:00

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.33	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.04	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 012

SAMPLE DESCRIPTION: MW-312D

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 15:55

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.74	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.02	0.01	mg/l	SM 4500CN C E	8/3/11	EC

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/28/11

Work Order #: 1107-14582

GZA FILE# 03.0043654.00 FOMER TIDEWATER FACILITY

Sample # 013

SAMPLE DESCRIPTION: BD-1

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 12:18

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.41	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.05	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 014

SAMPLE DESCRIPTION: BD-2

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 7/27/2011 @ 15:55

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.68	0.01	mg/l	SM-4500CN-C E	8/2/11	EC
Dissolved Free Cyanide	0.02	0.01	mg/l	SM 4500CN C E	8/3/11	EC

QA/QC Report

Client: GZA GeoEnvironmental Labs

WO #: 1107-14582

Date: 8/3/2011

-Method Blanks Results-

Parameter	Units	Results	Date Analyzed
Total Cyanide	mg/l	<0.01	7/29/2011
Total Cyanide	mg/l	<0.01	8/2/2011
Free Dissolved Cyanide	mg/l	<0.01	8/3/2011

-LCS/LCS Duplicate Data Results-

Parameter	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
Total Cyanide	0.10	0.099	99	0.104	104	5	7/29/2011
Total Cyanide	0.10	0.120	120	0.111	111	8	8/2/2011
Free Dissolved Cyanide	0.10	0.096	96	0.090	90	6	8/3/2011

Case Narrative

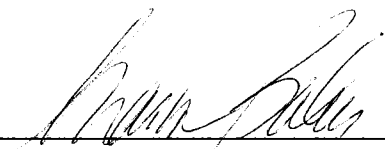
Date: 8/3/2011

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Project: GZA FILE# 03.0043654.00 FOMERTIDEWATER FACILITY

RIAL WO#: 1107-14582

R.I. Analytical Laboratories received Fourteen Groundwater samples from the GZA GeoEnvironmental Labs on July 28, 2011. The samples were transported and delivered to the laboratory in a cooler on ice (at 5.2 degrees C). The samples were received in good condition. Upon arrival the samples were logged into our LIMS system and assigned a work order number of 1107-14582



Sharon Baker
Data Reporting / MIS Manager

CHAIN-OF-CUSTODY RECORD

W.O. # 1107-00128
(for lab use only)

Sample ID	Date/Time Sampled	Matrix A=Air S=Soil GW=Ground W. SW=Surface W. WW=Waste W. DW=Drinking W. P=Product Other (specify)
MW-333D	7/27/11 @ 1330	GW
MW-310S	7/27/11 @ 1030	GW
MW-310D	7/27/11 @ 1050	GW
MW-333S	7/27/11 @ 1310	GW
MW-326S	7/27/11 @ 1630	GW
MW-326D	7/27/11 @ 1620	GW
MW-208	7/27/11 @ 1145	GW
MW-339D	7/27/11 @ 1218	GW
MW-339S	7/27/11 @ 1050	GW
MW-201	7/27/11 @ 1240	GW
MW-312S	7/27/11 @ 1600	GW
MW-312D	7/27/11 @ 1555	GW
BD-1	7/27/11 @ 1218	GW
BD-2	7/27/11 @ 1555	GW

PRESERVATIVE (CL-HCl, M-Methanol, N-HNO₃, S-H₂SO₄, Na-NaOH, O-Other) *

CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other) *

RELINQUISHED BY: [Signature] DATE/TIME: 7/28/11 RECEIVED BY: [Signature]

RELINQUISHED BY: [Signature] DATE/TIME: 7/28/11 RECEIVED BY: [Signature]

RELINQUISHED BY: [Signature] DATE/TIME: 7/28/11 RECEIVED BY: [Signature]

Project Manager: Michelle Miranda

GZA GEOENVIRONMENTAL, INC.

106 South Street
Hopkinton, MA 01748
508-435-9244
FAX 508-435-9912

CHAIN OF CUSTODY RECORD



GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: **MA092** NH: **2028**
CT: **PH0579** RI: **LAO00236**
NELAC - NYS DOH: **11063**

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project No.: **05.0043654.00**
Work Order No.: **1107-00128**
Date Received: **07/28/2011**
Date Reported: **08/09/2011**

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
07/27/2011	Aqueous	1107-00128 001	MW-333D
07/27/2011	Aqueous	1107-00128 002	MW-310S
07/27/2011	Aqueous	1107-00128 003	MW-310D
07/27/2011	Aqueous	1107-00128 004	MW-333S
07/27/2011	Aqueous	1107-00128 005	MW-326S
07/27/2011	Aqueous	1107-00128 006	MW-326D
07/27/2011	Aqueous	1107-00128 007	MW-208
07/27/2011	Aqueous	1107-00128 008	MW-339D
07/27/2011	Aqueous	1107-00128 009	MW-339S
07/27/2011	Aqueous	1107-00128 010	MW-201
07/27/2011	Aqueous	1107-00128 011	MW-312S
07/27/2011	Aqueous	1107-00128 012	MW-312D
07/27/2011	Aqueous	1107-00128 013	BD#1
07/27/2011	Aqueous	1107-00128 014	BD#2
07/27/2011	Aqueous	1107-00128 015	Trip Blank 72811
07/27/2011	Aqueous	1107-00128 016	MW-201 RE
07/27/2011	Aqueous	1107-00128 017	MW-312S RE
07/27/2011	Aqueous	1107-00128 018	BD#2 RE



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 07/28/11 via x_GZA courier, EC, FEDEX, or hand delivered. The temperature of the x_temperature blank/ cooler air, was 5.9 & 3.8 degrees C. The temperature requirement for most analyses is above freezing to 6 degrees C. The samples were received intact for all requested analyses.

The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

2. Subcontracted Analyses

Analyses for Total and Dissolved Cyanide were subcontracted to Rhode Island Analytical, Warwick RI (RIAL); Certification MA: MA-RI015, NH: 253700 A&B, CT: PH-0508, ME: RI015, RI: RI-033, NY:11726,

The data is included in GZA's report for ease of electronic data transfer and is indicated by "XXX" in the tech column. The data report from the subcontractor is attached.

* Dissolved Cyanide - sample MW-310D: TCN and FCNDISS analysis was performed a second time to confirm the deviation between the two results. Two separate samples were provided for each of the two analyses.

3. EPA Method 8260 - VOCs

The elevated reporting limits for samples MW-333D (1107-00128-001), MW-310D (1107-00128-003), MW-326S (1107-00128-005), MW-339D (1107-00128-008), MW-339S (1107-00128-009), MW-312S (1107-00128-011), MW-312D (1107-00128-012), BD#1 (1107-00128-013), and BD#2 (1107-00128-014) are due to initial dilution of the sample in order to get target compounds within the calibration range of the instrument. The dilution was based upon screening data for the sample.

Attach QC 8260 7/29/2011 "S" - Aqueous

4. EPA Method 8270 - SVOCs (PAHs)

Per the Project Manager, a subset of the analyte list for Method 8270 (Semivolatile Organic Compounds by GC/MS) has been provided.

Data qualifier:

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

The percent recoveries for the surrogates in the diluted runs are as follows:

BD#1: Nitrobenzene-D5 - 34.7%, 2-Fluorobiphenyl - 37.4%, P-Terphenyl -D14 - 38.5%.
MW-310D: Nitrobenzene-D5 - 44.6%, 2-Fluorobiphenyl - 47.6%, P-Terphenyl -D14 - 46.9%.
MW-310D: Nitrobenzene-D5 - 48.4%, 2-Fluorobiphenyl - 50.1%, P-Terphenyl -D14 - 51.0%.
MW-312D: Nitrobenzene-D5 - 43.8%, 2-Fluorobiphenyl - 45.1%, P-Terphenyl -D14 - 43.6%.
BD#2 RE: Nitrobenzene-D5 - 64.4%, 2-Fluorobiphenyl - 75.8%, P-Terphenyl -D14 - 80.1%.



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
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Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

The surrogate recovery for sample MW-326S (1107-00128-005) exceeded the acceptance criteria of 30-130%. Specific outlier includes: 2-fluorobiphenyl (28.9%). Methods 8270D permits one surrogate outside acceptance criteria.

The surrogate recovery for samples MW-326D (1107-00128-006) and MW-208 (1107-00128-007) exceeded the acceptance criteria of 30-130%. Specific outlier includes: p-terphenyl (28.6% and 28.8% respectively). Methods 8270D permits one surrogate outside acceptance criteria.

The percent recoveries for all surrogates in samples MW-201 (1107-00128-010), and MW-312S (1107-00128-011) were recovered outside the 30-130% QC acceptance limits. The samples were re-extracted as samples MW-201 RE (1107-00128-016) and MW-312S RE (1107-00128-017) one day outside of holding time and re-analyzed and all surrogate recoveries were within the 30-130% QC acceptance limits. Both sets of results are reported.

The percent recoveries for the surrogates Nitrobenzene-D5 and 2-Fluorobiphenyl in sample BD#2 (1107-00128-014) were recovered outside the 30-130% QC acceptance limits. The sample was re-extracted as sample BD#2 RE (1107-00128-018) one (1) day outside of holding time and re-analyzed and all surrogate recoveries were within the 30-130% QC acceptance limits. Both sets of results are reported.

Attach QC 8270 7/29/2011 "I" - Aqueous
Attach QC 8270 8/01/2011 "I" - Aqueous
Attach QC 8270 8/03/2011 "I" - Aqueous
Attach QC 8270 8/4/2011 "I" - Aqueous

5. Total Petroleum Hydrocarbons

Attach QC TPH 08/01/11 - Aqueous
Attach QC TPH 08/03/11 - Aqueous



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Data Authorized By: _____

GZA GeoEnvironmental, Inc. has NELAC validation for the following methods:

Wastewater: Methods 624,625,245.1,150.2,120.1, 200.7 (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti).

Aqueous: Methods 8260B, 8270D, 8081B, 8082A, 7470, 150.2, 120.1, 1311, 6010C (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti), 300.0 (Cl, F, SO₄, NO₃, NO₂, Ophos), MA DEP EPH/VPH.

Soil: Methods 8260B, 8270D, 8081B, 8082A, 7471B, 9045, 1311, 6010C (PP13, RCRA8, and Fe, Mg, Mn, Al, V, Co, Mo, Sn, Ca), MA DEP VPH/EPH.

Abbreviations:

% R = % Recovery

DF = Dilution Factor

DFS = Dilution Factor Solids

CF = Calculation Factor

DO = Diluted Out

Method Key:

Method 8260: The current version of the method is 8260B.

Method 8270: The current version of the method is 8270D.

Method 6010: The current version of the method is 6010C.

Method 8081: The current version of the method is 8081B.

Method 8082: The current version of the method is 8082A.

Method 7471: The current version of the method is 7471B.

The current Metals preparation methods are: 3010A (aqueous) and 3051 (solid).

Please note that the laboratory signed copy of the chain of custody record is an integral part of the data report.

The laboratory report shall not be reproduced except in full without the written consent of the laboratory.

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-333D**

Sample No.: **001**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<250	250	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<25	25	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<250	250	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<250	250	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Benzene	EPA 8260	1600	25	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<250	250	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<250	250	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-333D**

Sample No.: **001**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	980	25	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	93	50	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	340	25	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	80	25	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	35	25	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	430	25	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	3000	50	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	102	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	116	70-130	% R	MQS	07/29/2011



ANALYTICAL REPORT

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Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-333D**

Sample No.: **001**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	98.8	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	25		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/03/2011
Naphthalene	EPA 8270	980	20	ug/L	CMG	08/03/2011
2-Methylnaphthalene	EPA 8270	46	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	39	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	14	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	13	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	2.7	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	37.5	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	38.1	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	41.3	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/02/2011
Hydrocarbon Content		2000	200	ug/L	RJD	08/02/2011
Surrogate:						
***p-Terphenyl		46.8	40-130	% R	RJD	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	1.1	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM-4500CN-C E	0.02	0.01	mg/L	XXX	08/03/2011
RI Excel Deliverables						
GB Groundwater Objective	Excel Deliverable					



ANALYTICAL REPORT

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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-310S**

Sample No.: **002**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon disulfide	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl tert-butyl ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone (MEK)	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-pentanone (MIBK)	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-310S**

Sample No.: **002**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	109	70-130	% R	MQS	07/29/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-310S**

Sample No.: **002**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***Toluene-D8	EPA 8260	113	70-130	% R	MQS	07/29/2011
***4-Bromofluorobenzene	EPA 8260	101	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	36.5	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	36.5	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	33.5	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	07/29/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/02/2011
Hydrocarbon Content		<200	200	ug/L	RJD	08/02/2011
Surrogate:						
***p-Terphenyl		47.4	40-130	% R	RJD	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.06	0.01	mg/L	XXX	07/29/2011
Dissolved Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/03/2011



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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-310D**

Sample No.: **003**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Benzene	EPA 8260	650	50	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Toluene	EPA 8260	190	50	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-310D**

Sample No.: **003**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	920	50	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	670	100	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	660	50	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	92	50	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	170	50	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	640	50	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	6800	100	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	102	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-310D**

Sample No.: **003**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	98.9	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	50		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/05/2011
Naphthalene	EPA 8270	2500 D	40	ug/L	CMG	08/05/2011
2-Methylnaphthalene	EPA 8270	200 D	10	ug/L	CMG	08/05/2011
Acenaphthylene	EPA 8270	23	2.0	ug/L	CMG	08/03/2011
Acenaphthene	EPA 8270	54	2.0	ug/L	CMG	08/03/2011
Fluorene	EPA 8270	18	2.0	ug/L	CMG	08/03/2011
Phenanthrene	EPA 8270	12	2.0	ug/L	CMG	08/03/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/03/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	43.3	30-130	% R	CMG	08/03/2011
***2-Fluorobiphenyl	EPA 8270	42.5	30-130	% R	CMG	08/03/2011
***P-Terphenyl-D14	EPA 8270	43.4	30-130	% R	CMG	08/03/2011
Extraction	EPA 3510C	1.0		DF	JCH	08/03/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/02/2011
Hydrocarbon Content		8700	200	ug/L	RJD	08/02/2011
Surrogate:						
***p-Terphenyl		43.3	40-130	% R	RJD	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.12	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	0.15*	0.01	mg/l	XXX	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-333S**

Sample No.: **004**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	39	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	2.6	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



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Date Received: **07/28/2011**

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Work Order No.: **1107-00128**

Sample ID: **MW-333S**

Sample No.: **004**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	130	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	4.8	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	24	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	5.0	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	1.5	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	9.7	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	42	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	97.2	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	111	70-130	% R	MQS	07/29/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-333S**

Sample No.: **004**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	98.2	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	13	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	36.0	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	33.6	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	30.0	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/02/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/02/2011
Hydrocarbon Content		320	200	ug/L	RJD	08/02/2011
Surrogate:						
***p-Terphenyl		44.0	40-130	% R	RJD	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.15	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.01	0.01	mg/l	XXX	08/03/2011



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Date Received: **07/28/2011**

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Work Order No.: **1107-00128**

Sample ID: **MW-326S**

Sample No.: **005**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	470	5.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<50	50	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	6.0	5.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<50	50	ug/L	MQS	07/29/2011



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Date Received: **07/28/2011**

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Sample No.: **005**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	300	5.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	21	10	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	160	5.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	51	5.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	18	5.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	22	5.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	140	5.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	130	10	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	103	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	114	70-130	% R	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-326S**

Sample No.: **005**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	99.1	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	5.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	26	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	17	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	25	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	4.3	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	31.5	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	28.9	* 30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	31.5	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/02/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/02/2011
Hydrocarbon Content		2300	200	ug/L	RJD	08/02/2011
Surrogate:						
***p-Terphenyl		52.5	40-130	% R	RJD	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/01/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.49	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-326D**

Sample No.: **006**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	57	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-326D**

Sample No.: **006**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	17	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	2.9	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	3.8	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	1.4	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	2.7	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	52	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	103	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	111	70-130	% R	MQS	07/29/2011



ANALYTICAL REPORT

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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-326D**

Sample No.: **006**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	99.2	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	20	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	2.2	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	42.6	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	39.4	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	28.6	* 30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/02/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/03/2011
Hydrocarbon Content		270	200	ug/L	RJD	08/03/2011
Surrogate:						
***p-Terphenyl		42.5	40-130	% R	RJD	08/03/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.67	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.01	0.01	mg/l	XXX	08/03/2011



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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-208**

Sample No.: **007**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-208**

Sample No.: **007**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	3.7	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	2.0	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	3.7	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	2.1	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	6.8	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	7.6	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	2.1	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	107	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	113	70-130	% R	MQS	07/29/2011



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Date Received: **07/28/2011**

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Work Order No.: **1107-00128**

Sample ID: **MW-208**

Sample No.: **007**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	94.8	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/02/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	44.6	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	43.1	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	28.8	* 30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/02/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/03/2011
Hydrocarbon Content		310	200	ug/L	RJD	08/03/2011
Surrogate:						
***p-Terphenyl		42.2	40-130	% R	RJD	08/03/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.03	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-339D**

Sample No.: **008**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<250	250	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<25	25	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<250	250	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<250	250	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Benzene	EPA 8260	36	25	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<250	250	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Toluene	EPA 8260	41	25	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<250	250	ug/L	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-339D**

Sample No.: **008**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	240	25	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	470	50	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	380	25	ug/L	MQS	07/29/2011
Styrene	EPA 8260	44	25	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	46	25	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	34	25	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	110	25	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	410	25	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	2700	50	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<25	25	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	96.0	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-339D**

Sample No.: **008**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	25		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/03/2011
Naphthalene	EPA 8270	1100	40	ug/L	CMG	08/03/2011
2-Methylnaphthalene	EPA 8270	230	10	ug/L	CMG	08/03/2011
Acenaphthylene	EPA 8270	69	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	52	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	24	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	23	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	2.9	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	50.2	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	49.4	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	41.1	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/02/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/03/2011
Hydrocarbon Content		5400	200	ug/L	RJD	08/03/2011
Surrogate:						
***p-Terphenyl		49.2	40-130	% R	RJD	08/03/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.13	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.01	0.01	mg/l	XXX	08/03/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-339S**

Sample No.: **009**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<50	50	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<50	50	ug/L	MQS	07/29/2011



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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-339S**

Sample No.: **009**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	6.8	5.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	20	5.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	760	10	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<5.0	5.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	105	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	110	70-130	% R	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-339S**

Sample No.: **009**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	98.6	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	5.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/03/2011
Naphthalene	EPA 8270	350	10	ug/L	CMG	08/03/2011
2-Methylnaphthalene	EPA 8270	75	2.0	ug/L	CMG	08/02/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluorene	EPA 8270	2.9	2.0	ug/L	CMG	08/02/2011
Phenanthrene	EPA 8270	5.0	2.0	ug/L	CMG	08/02/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/02/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	55.6	30-130	% R	CMG	08/02/2011
***2-Fluorobiphenyl	EPA 8270	51.8	30-130	% R	CMG	08/02/2011
***P-Terphenyl-D14	EPA 8270	44.2	30-130	% R	CMG	08/02/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/02/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/03/2011
Hydrocarbon Content		1100	200	ug/L	RJD	08/03/2011
Surrogate:						
***p-Terphenyl		56.3	40-130	% R	RJD	08/03/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.44	0.01	mg/L	XXX	07/29/2011
Dissolved Free Cyanide	SM 4500CN C E	0.08	0.01	mg/l	XXX	08/03/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-201**

Sample No.: **010**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	50	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

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530 Broadway
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Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-201**

Sample No.: **010**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	35	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	5.3	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	17	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	15	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	4.7	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	2.1	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	5.6	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	10	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	106	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	112	70-130	% R	MQS	07/29/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-201**

Sample No.: **010**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	96.3	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/04/2011
Naphthalene	EPA 8270	3.6	2.0	ug/L	CMG	08/04/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	2.2	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	4.4	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	3.8	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	17.2	* 30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	15.9	* 30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	17.6	* 30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	JCH	08/03/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		600	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		49.4	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	4.0	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.13	0.01	mg/l	XXX	08/03/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-312S**

Sample No.: **011**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Benzene	EPA 8260	130	50	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011



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Sample ID: **MW-312S**

Sample No.: **011**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	1100	50	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	240	50	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	53	50	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	63	50	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	260	50	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	4300	100	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	104	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	110	70-130	% R	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **MW-312S**

Sample No.: **011**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	100	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	50		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/04/2011
Naphthalene	EPA 8270	3000	20	ug/L	CMG	08/04/2011
2-Methylnaphthalene	EPA 8270	1000	20	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	160	20	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	1400	20	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	850	20	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	1800	20	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	570	20	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	610	20	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	860	20	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	300	20	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	260	20	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	160	20	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	53	20	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	190	20	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	68	20	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	26	20	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	86	20	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	27.0	* 30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	24.1	* 30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	25.7	* 30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	JCH	08/03/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		48000	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		71.7	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.33	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.04	0.01	mg/l	XXX	08/03/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-312D**

Sample No.: **012**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Benzene	EPA 8260	2800	50	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-312D**

Sample No.: **012**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	1500	50	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	410	50	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	85	50	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	420	50	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	5300	100	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	107	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	113	70-130	% R	MQS	07/29/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-312D**

Sample No.: **012**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	100	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	50		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/05/2011
Naphthalene	EPA 8270	900 D	20	ug/L	CMG	08/05/2011
2-Methylnaphthalene	EPA 8270	91	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	51	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	19	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	18	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	3.5	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	2.4	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	3.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	36.6	30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	35.8	30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	35.8	30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	JCH	08/03/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		6500	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		53.4	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.74	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.02	0.01	mg/l	XXX	08/03/2011



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Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **BD#1**

Sample No.: **013**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<10	10	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<100	100	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<100	100	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<20	20	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<100	100	ug/L	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **BD#1**

Sample No.: **013**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<20	20	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<20	20	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	18	10	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<20	20	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	760	20	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<10	10	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	108	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	115	70-130	% R	MQS	07/29/2011



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Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **BD#1**

Sample No.: **013**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	100	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	10		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/05/2011
Naphthalene	EPA 8270	220	D 10	ug/L	CMG	08/05/2011
2-Methylnaphthalene	EPA 8270	53	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	4.1	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	39.8	30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	36.2	30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	36.4	30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	JCH	08/03/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		1000	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		58.1	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.41	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.05	0.01	mg/l	XXX	08/03/2011



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Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **BD#2**

Sample No.: **014**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<500	500	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Benzene	EPA 8260	2700	50	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<500	500	ug/L	MQS	07/29/2011



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Work Order No.: **1107-00128**

Sample ID: **BD#2**

Sample No.: **014**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	1600	50	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<100	100	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	420	50	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<100	100	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	87	50	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	430	50	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<100	100	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	5200	100	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<50	50	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	98.8	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	109	70-130	% R	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **BD#2**

Sample No.: **014**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	102	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	50		CF	MQS	07/29/2011
PAHS BY GCMS	EPA 8270				CMG	08/04/2011
Naphthalene	EPA 8270	460	2.0	ug/L	CMG	08/04/2011
2-Methylnaphthalene	EPA 8270	80	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	45	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	12	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	14	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	2.6	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	30.7	30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	29.8	* 30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	26.6	* 30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	JCH	08/03/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		8100	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		54.8	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/03/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.68	0.01	mg/L	XXX	08/02/2011
Dissolved Free Cyanide	SM 4500CN C E	0.02	0.01	mg/l	XXX	08/03/2011



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Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **Trip Blank 72811**

Sample No.: **015**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				MQS	07/29/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Acetone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Butanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	MQS	07/29/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Hexanone	EPA 8260	<10	10	ug/L	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **Trip Blank 72811**

Sample No.: **015**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	MQS	07/29/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	MQS	07/29/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	104	70-130	% R	MQS	07/29/2011
***Toluene-D8	EPA 8260	111	70-130	% R	MQS	07/29/2011



GZA GeoEnvironmental, Inc.
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Hopkinton, MA 01748
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ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **Trip Blank 72811**

Sample No.: **015**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	101	70-130	% R	MQS	07/29/2011
Preparation	EPA 5030B	1.0		CF	MQS	07/29/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-201 RE**

Sample No.: **016**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
PAHS BY GCMS	EPA 8270				CMG	08/04/2011
Naphthalene	EPA 8270	4.2	2.0	ug/L	CMG	08/04/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	5.3	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	11	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	8.6	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	40.8	30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	39.7	30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	41.9	30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/28/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00128**

Sample ID: **MW-312S RE**

Sample No.: **017**

Sample Date: **07/27/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
PAHS BY GCMS	EPA 8270				CMG	08/05/2011
Naphthalene	EPA 8270	10000	200	ug/L	CMG	08/05/2011
2-Methylnaphthalene	EPA 8270	3100	200	ug/L	CMG	08/05/2011
Acenaphthylene	EPA 8270	400	200	ug/L	CMG	08/05/2011
Acenaphthene	EPA 8270	3900	200	ug/L	CMG	08/05/2011
Fluorene	EPA 8270	2000	200	ug/L	CMG	08/05/2011
Phenanthrene	EPA 8270	5600	200	ug/L	CMG	08/05/2011
Anthracene	EPA 8270	1700	200	ug/L	CMG	08/05/2011
Fluoranthene	EPA 8270	1800	200	ug/L	CMG	08/05/2011
Pyrene	EPA 8270	2500	200	ug/L	CMG	08/05/2011
Benzo [a] Anthracene	EPA 8270	800	200	ug/L	CMG	08/05/2011
Chrysene	EPA 8270	640	200	ug/L	CMG	08/05/2011
Benzo [b] Fluoranthene	EPA 8270	410	200	ug/L	CMG	08/05/2011
Benzo [k] Fluoranthene	EPA 8270	<200	200	ug/L	CMG	08/05/2011
Benzo [a] Pyrene	EPA 8270	450	200	ug/L	CMG	08/05/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<200	200	ug/L	CMG	08/05/2011
Dibenzo [a,h] Anthracene	EPA 8270	<200	200	ug/L	CMG	08/05/2011
Benzo [g,h,i] Perylene	EPA 8270	<200	200	ug/L	CMG	08/05/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	31.9	30-130	% R	CMG	08/05/2011
***2-Fluorobiphenyl	EPA 8270	78.3	30-130	% R	CMG	08/05/2011
***P-Terphenyl-D14	EPA 8270	76.2	30-130	% R	CMG	08/05/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**
Project No.: **05.0043654.00**

Date Received: **07/28/2011**
Date Reported: **08/09/2011**
Work Order No.: **1107-00128**

Sample ID: **BD#2 RE**
Sample Date: **07/27/2011**

Sample No.: **018**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
PAHS BY GCMS	EPA 8270				CMG	08/06/2011
Naphthalene	EPA 8270	3000	D 100	ug/L	CMG	08/06/2011
2-Methylnaphthalene	EPA 8270	190	20	ug/L	CMG	08/06/2011
Acenaphthylene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Acenaphthene	EPA 8270	88	20	ug/L	CMG	08/06/2011
Fluorene	EPA 8270	27	20	ug/L	CMG	08/06/2011
Phenanthrene	EPA 8270	29	20	ug/L	CMG	08/06/2011
Anthracene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Fluoranthene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Pyrene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Benzo [a] Anthracene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Chrysene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Benzo [b] Fluoranthene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Benzo [k] Fluoranthene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Benzo [a] Pyrene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Dibenzo [a,h] Anthracene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Benzo [g,h,i] Perylene	EPA 8270	<20	20	ug/L	CMG	08/06/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	57.6	30-130	% R	CMG	08/06/2011
***2-Fluorobiphenyl	EPA 8270	61.1	30-130	% R	CMG	08/06/2011
***P-Terphenyl-D14	EPA 8270	68.0	30-130	% R	CMG	08/06/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011

Method Blank

Date Analyzed:	7/29/2011	
Volatile Organics	Conc. ug/L	Acceptance Limit
dichlorodifluoromethane	< 1.0	< 1.0
chloromethane	< 1.0	< 1.0
vinyl chloride	< 0.5	< 0.5
bromomethane	< 1.0	< 1.0
chloroethane	< 0.5	< 0.5
trichlorofluoromethane	< 1.0	< 1.0
diethyl ether	< 2.5	< 2.5
acetone	< 10	< 10
1,1-dichloroethene	< 0.5	< 0.5
carbon disulfide	< 5.0	< 5.0
dichloromethane	< 1.0	< 1.0
methyl-tert-butyl-ether	< 0.5	< 0.5
trans-1,2-dichloroethene	< 0.5	< 0.5
1,1-dichloroethane	< 0.5	< 0.5
2-butanone	< 10	< 10
2,2-dichloropropane	< 0.5	< 0.5
cis-1,2-dichloroethene	< 0.5	< 0.5
chloroform	< 0.5	< 0.5
bromochloromethane	< 0.5	< 0.5
tetrahydrofuran	< 5.0	< 5.0
1,1,1-trichloroethane	< 0.5	< 0.5
1,1-dichloropropene	< 0.5	< 0.5
carbon tetrachloride	< 0.5	< 0.5
1,2-dichloroethane	< 0.5	< 0.5
benzene	< 0.5	< 0.5
trichloroethene	< 0.5	< 0.5
1,2-dichloropropane	< 0.5	< 0.5
bromodichloromethane	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
4-methyl-2-pentanone	< 10	< 10
cis-1,3-dichloropropene	< 0.5	< 0.5
toluene	< 0.5	< 0.5
trans-1,3-dichloropropene	< 1.0	< 1.0
1,1,2-trichloroethane	< 0.5	< 0.5
2-hexanone	< 10	< 10
1,3-dichloropropane	< 0.5	< 0.5
tetrachloroethene	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
1,2-dibromochloromethane	< 0.5	< 0.5
1,2-dibromochloromethane (EDB)	< 1.0	< 1.0
chlorobenzene	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
ethylbenzene	< 0.5	< 0.5
1,1,2,2-tetrachloroethane	< 0.5	< 0.5
m&p-xylene	< 1.0	< 1.0
o-xylene	< 0.5	< 0.5
styrene	< 0.5	< 0.5
bromoforn	< 1.0	< 1.0
isopropylbenzene	< 0.5	< 0.5
1,2,3-trichloropropane	< 0.5	< 0.5
bromobenzene	< 0.5	< 0.5
n-propylbenzene	< 0.5	< 0.5
2-chlorotoluene	< 0.5	< 0.5
1,3,5-trimethylbenzene	< 0.5	< 0.5
4-chlorotoluene	< 0.5	< 0.5
tert-butyl-benzene	< 0.5	< 0.5
1,2,4-trimethylbenzene	< 0.5	< 0.5
sec-butyl-benzene	< 0.5	< 0.5
p-isopropyltoluene	< 0.5	< 0.5
1,3-dichlorobenzene	< 0.5	< 0.5
1,4-dichlorobenzene	< 0.5	< 0.5
n-butylbenzene	< 0.5	< 0.5
1,2-dichlorobenzene	< 0.5	< 0.5
1,2-dibromo-3-chloropropane	< 2.5	< 2.5
1,2,4-trichlorobenzene	< 0.5	< 0.5
hexachlorobutadiene	< 0.5	< 0.5
naphthalene	< 1.0	< 1.0

Laboratory Control Sample

Date Analyzed:	7/29/2011	
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits
dichlorodifluoromethane	101	70-130
chloromethane	115	70-130
vinyl chloride	97.8	80-120
bromomethane	96.6	70-130
chloroethane	98.7	70-130
trichlorofluoromethane	87.2	70-130
diethyl ether	92.8	70-130
acetone	85.3	70-130
1,1-dichloroethene	93.8	80-120
carbon disulfide	91.9	70-130
dichloromethane	96.1	70-130
methyl-tert-butyl-ether	92.5	70-130
trans-1,2-dichloroethene	97.5	70-130
1,1-dichloroethane	97.2	70-130
2-butanone	96.4	70-130
2,2-dichloropropane	99.1	70-130
cis-1,2-dichloroethene	100	70-130
chloroform	93.5	80-120
bromochloromethane	98.9	70-130
tetrahydrofuran	110	70-130
1,1,1-trichloroethane	88.5	70-130
1,1-dichloropropene	96.1	70-130
carbon tetrachloride	91.0	70-130
1,2-dichloroethane	92.1	70-130
benzene	101	70-130
trichloroethene	99.0	70-130
1,2-dichloropropane	108	80-120
bromodichloromethane	94.3	70-130
1,1,1,2-tetrachloroethane	98.6	70-130
4-methyl-2-pentanone	102	70-130
cis-1,3-dichloropropene	104	70-130
toluene	103	80-120
trans-1,3-dichloropropene	98.9	70-130
1,1,2-trichloroethane	95.0	70-130
2-hexanone	97.5	70-130
1,3-dichloropropane	95.0	70-130
tetrachloroethene	90.1	70-130
1,1,1,2-tetrachloroethane	94.5	70-130
1,2-dibromochloromethane	95.2	70-130
1,2-dibromochloromethane (EDB)	96.1	70-130
chlorobenzene	92.1	70-130
1,1,1,2-tetrachloroethane	95.9	80-120
ethylbenzene	96.9	70-130
1,1,2,2-tetrachloroethane	91.1	70-130
m&p-xylene	99.7	70-130
o-xylene	103	70-130
styrene	100	70-130
bromoforn	103	70-130
isopropylbenzene	96.7	70-130
1,2,3-trichloropropane	100	70-130
bromobenzene	103	70-130
n-propylbenzene	96.6	70-130
2-chlorotoluene	99.4	70-130
1,3,5-trimethylbenzene	97.3	70-130
4-chlorotoluene	99.9	70-130
tert-butyl-benzene	99.1	70-130
1,2,4-trimethylbenzene	104	70-130
sec-butyl-benzene	100	70-130
p-isopropyltoluene	101	70-130
1,3-dichlorobenzene	101	70-130
1,4-dichlorobenzene	103	70-130
n-butylbenzene	99.4	70-130
1,2-dichlorobenzene	101	70-130
1,2-dibromo-3-chloropropane	105	70-130
1,2,4-trichlorobenzene	95.4	70-130
hexachlorobutadiene	103	70-130
naphthalene		

Laboratory Control Sample Duplicate

Date Analyzed:	7/29/2011	
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits
dichlorodifluoromethane	103	70-130
chloromethane	119	70-130
vinyl chloride	98.9	70-130
bromomethane	99.0	70-130
chloroethane	97.6	70-130
trichlorofluoromethane	89.8	70-130
diethyl ether	97.4	70-130
acetone	87.4	70-130
1,1-dichloroethene	96.4	70-130
carbon disulfide	96.7	70-130
dichloromethane	98.8	70-130
methyl-tert-butyl-ether	97.5	70-130
trans-1,2-dichloroethene	102	70-130
1,1-dichloroethane	99.8	70-130
2-butanone	103	70-130
2,2-dichloropropane	99.8	70-130
cis-1,2-dichloroethene	104	70-130
chloroform	95.2	70-130
bromochloromethane	104	70-130
tetrahydrofuran	116	70-130
1,1,1-trichloroethane	94.5	70-130
1,1-dichloropropene	102	70-130
carbon tetrachloride	95.5	70-130
1,2-dichloroethane	93.1	70-130
benzene	106	70-130
trichloroethene	103	70-130
1,2-dichloropropane	110	70-130
bromodichloromethane	97.2	70-130
1,1,1,2-tetrachloroethane	102	70-130
4-methyl-2-pentanone	107	70-130
cis-1,3-dichloropropene	108	70-130
toluene	106	70-130
trans-1,3-dichloropropene	102	70-130
1,1,2-trichloroethane	94.3	70-130
2-hexanone	100	70-130
1,3-dichloropropane	94.1	70-130
tetrachloroethene	90.3	70-130
1,1,1,2-tetrachloroethane	96.6	70-130
1,2-dibromochloromethane	98.3	70-130
1,2-dibromochloromethane (EDB)	96.9	70-130
chlorobenzene	91.5	70-130
1,1,1,2-tetrachloroethane	98.6	70-130
ethylbenzene	96.9	70-130
1,1,2,2-tetrachloroethane	91.8	70-130
m&p-xylene	99.2	70-130
o-xylene	102	70-130
styrene	99.6	70-130
bromoforn	102	70-130
isopropylbenzene	97.3	70-130
1,2,3-trichloropropane	100	70-130
bromobenzene	99.7	70-130
n-propylbenzene	101	70-130
2-chlorotoluene	99.9	70-130
1,3,5-trimethylbenzene	100	70-130
4-chlorotoluene	98.1	70-130
tert-butyl-benzene	98.8	70-130
1,2,4-trimethylbenzene	99.1	70-130
sec-butyl-benzene	103	70-130
p-isopropyltoluene	100	70-130
1,3-dichlorobenzene	99.1	70-130
1,4-dichlorobenzene	102	70-130
n-butylbenzene	102	70-130
1,2-dichlorobenzene	104	70-130
1,2-dibromo-3-chloropropane	105	70-130
1,2,4-trichlorobenzene	96.4	70-130
hexachlorobutadiene	104	70-130
naphthalene		

Surrogates:	Recovery (%)	Acceptance Limits	Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Surrogates:	Recovery (%)	Acceptance Limits	Verdict	RPD	Acceptance Limits	Verdict
DIBROMOFLUOROMETHANE	108	70-130	DIBROMOFLUOROMETHANE	105	70-130	ok	DIBROMOFLUOROMETHANE	108	70-130	ok	3.15	<25	ok
1,2-DICHLOROETHANE-D4	112	70-130	1,2-DICHLOROETHANE-D4	106	70-130	ok	1,2-DICHLOROETHANE-D4	107	70-130	ok	0.51	<25	ok
1,2-DICHLOROETHANE-D4	112	70-130	1,2-DICHLOROETHANE-D4	106	70-130	ok	1,2-DICHLOROETHANE-D4	112	70-130	ok	5.66	<25	ok
4-BROMOFLUOROBENZENE	98.0	70-130	4-BROMOFLUOROBENZENE	103	70-130	ok	4-BROMOFLUOROBENZENE	100	70-130	ok	2.94	<25	ok
1,2-DICHLOROETHANE-D4	105	70-130	1,2-DICHLOROETHANE-D4	111	70-130	ok	1,2-DICHLOROETHANE-D4	111	70-130	ok	0.34	<25	ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	08/03/11	
Date Analyzed:	08/03/11	
File Name:	M9124	
Semi-Volatile Organics	Result	(ug/L)
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	60.5	30-130
2-FLUOROBIPHENYL	58.7	30-130
p-TERPHENYL-D14	68.8	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	08/03/11
Date Analyzed:	08/03/11
File Name:	M9125
Spike Concentration = 20ug/L	
	% Recovery
naphthalene	67.3
2-methylnaphthalene	67.0
acenaphthylene	71.8
acenaphthene	70.7
fluorene	73.6
phenanthrene	75.2
anthracene	75.4
fluoranthene	78.5
pyrene	81.4
benz [a] anthracene	73.8
chrysene	76.7
benzo [b] fluoranthene	77.1
benzo [k] fluoranthene	76.8
benzo [a] pyrene	79.6
indeno [1,2,3-cd] pyrene	75.5
dibenz [a,h] anthracene	77.3
benzo [ghi] perylene	73.9

Laboratory Control Sample Duplicate

Date Extracted:	08/03/11
Date Analyzed:	08/03/11
File Name:	M9126
	% Recovery
naphthalene	64.6
2-methylnaphthalene	56.5
acenaphthylene	63.3
acenaphthene	63.6
fluorene	68.7
phenanthrene	70.6
anthracene	68.9
fluoranthene	71.5
pyrene	73.4
benz [a] anthracene	67.7
chrysene	73.9
benzo [b] fluoranthene	78.2
benzo [k] fluoranthene	65.1
benzo [a] pyrene	72.9
indeno [1,2,3-cd] pyrene	68.9
dibenz [a,h] anthracene	70.6
benzo [ghi] perylene	68.3

CAM criteria allows 15% of analytes to exceed criteria.

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits	Verdict
NITROBENZENE-D5	64.6	30-130	ok	59.9	30-130	ok	7.7	<20	ok
2-FLUOROBIPHENYL	67.2	30-130	ok	61.2	30-130	ok	9.4	<20	ok
p-TERPHENYL-D14	71.6	30-130	ok	68.8	30-130	ok	4.1	<20	ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	08/01/11	
Date Analyzed:	08/02/11	
File Name:	M9095	
Semi-Volatile Organics	Result	(ug/L)
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	52.3	30-130
2-FLUOROBIPHENYL	61.2	30-130
p-TERPHENYL-D14	71.1	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	08/01/11		
Date Analyzed:	08/02/11		
File Name:	M9096		
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits	Verdict
naphthalene	56.4	40-140	ok
2-methylnaphthalene	56.3	40-140	ok
acenaphthylene	60.6	40-140	ok
acenaphthene	62.3	40-140	ok
fluorene	66.8	40-140	ok
phenanthrene	66.7	40-140	ok
anthracene	68.8	40-140	ok
fluoranthene	68.3	40-140	ok
pyrene	70.0	40-140	ok
benz [a] anthracene	64.3	40-140	ok
chrysene	70.3	40-140	ok
benzo [b] fluoranthene	73.9	40-140	ok
benzo [k] fluoranthene	61.7	40-140	ok
benzo [a] pyrene	70.1	40-140	ok
indeno [1,2,3-cd] pyrene	70.1	40-140	ok
dibenz [a,h] anthracene	70.4	40-140	ok
benzo [ghi] perylene	68.1	40-140	ok

Laboratory Control Sample Duplicate

Date Extracted:	08/01/11				
Date Analyzed:	08/02/11				
File Name:	M9097				
% Recovery	Acceptance Limits	Verdict	% Diff	Limits	Verdict
61.8	40-140	ok	9.1	<20	ok
58.8	40-140	ok	4.5	<20	ok
61.8	40-140	ok	2.0	<20	ok
60.2	30-130	ok	3.4	<20	ok
66.2	40-140	ok	0.84	<20	ok
70.1	40-140	ok	4.9	<20	ok
69.5	40-140	ok	0.95	<20	ok
71.4	40-140	ok	4.4	<20	ok
73.5	40-140	ok	4.8	<20	ok
69.5	40-140	ok	7.7	<20	ok
72.2	40-140	ok	2.6	<20	ok
73.6	40-140	ok	0.31	<20	ok
68.6	40-140	ok	11	<20	ok
72.7	40-140	ok	3.7	<20	ok
73.0	40-140	ok	4.0	<20	ok
72.9	40-141	ok	3.5	<20	ok
70.7	40-142	ok	3.8	<20	ok

CAM criteria allows 15% of analytes to exceed criteria.

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits	Verdict
NITROBENZENE-D5	60.5	30-130	ok	60.6	30-130	ok	0.25	<20	ok
2-FLUOROBIPHENYL	62.1	30-130	ok	62.5	30-130	ok	0.59	<20	ok
p-TERPHENYL-D14	67.0	30-130	ok	72.1	30-130	ok	7.3	<20	ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	07/29/11	
Date Analyzed:	07/29/11	
File Name:	M9063	
Semi-Volatile Organics	Result	(ug/L)
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	61.8	30-130
2-FLUOROBIPHENYL	64.6	30-130
p-TERPHENYL-D14	73.2	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	07/29/11		
Date Analyzed:	07/29/11		
File Name:	M9064		
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits	Verdict
naphthalene	66.6	40-140	ok
2-methylnaphthalene	65.2	40-140	ok
acenaphthylene	71.8	40-140	ok
acenaphthene	70.6	40-140	ok
fluorene	76.5	40-140	ok
phenanthrene	75.8	40-140	ok
anthracene	77.1	40-140	ok
fluoranthene	77.9	40-140	ok
pyrene	79.9	40-140	ok
benz [a] anthracene	79.4	40-140	ok
chrysene	75.3	40-140	ok
benzo [b] fluoranthene	76.8	40-140	ok
benzo [k] fluoranthene	69.8	40-140	ok
benzo [a] pyrene	73.9	40-140	ok
indeno [1,2,3-cd] pyrene	74.2	40-140	ok
dibenz [a,h] anthracene	74.3	40-140	ok
benzo [ghi] perylene	73.2	40-140	ok

Laboratory Control Sample Duplicate

Date Extracted:	07/29/11				
Date Analyzed:	07/29/11				
File Name:	M9065				
% Recovery	Acceptance Limits	Verdict	% Diff	Limits	
56.2	40-140	ok	17	<20	
54.2	40-140	ok	18	<20	
59.7	40-140	ok	18	<20	
58.8	30-130	ok	18	<20	
62.9	40-140	ok	19	<20	
64.0	40-140	ok	17	<20	
64.3	40-140	ok	18	<20	
66.4	40-140	ok	16	<20	
68.5	40-140	ok	15	<20	
65.9	40-140	ok	19	<20	
66.2	40-140	ok	13	<20	
63.8	40-140	ok	18	<20	
62.0	40-140	ok	12	<20	
63.9	40-140	ok	15	<20	
64.2	40-140	ok	15	<20	
62.7	40-141	ok	17	<20	
63.4	40-142	ok	14	<20	

CAM criteria allows 15% of analytes to exceed criteria.

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits
NITROBENZENE-D5	70.9	30-130	ok	59.5	30-130	ok	17	<20
2-FLUOROBIPHENYL	72.2	30-130	ok	60.0	30-130	ok	18	<20
p-TERPHENYL-D14	78.0	30-130	ok	67.3	30-130	ok	15	<20

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Verdict

ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok
ok

Verdict

ok
ok
ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	08/04/11	
Date Analyzed:	8/4/2011	
File Name:	M9145	
Semi-Volatile Organics	Result	Reporting Limit
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0

Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	70.4	30-130
2-FLUOROBIPHENYL	70.6	30-130
p-TERPHENYL-D14	80.7	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	08/04/11
Date Analyzed:	8/4/2011
File Name:	M9146
Spike Concentration = 20ug/L	
% Recovery	Acceptance Limits
naphthalene	70.3 40-140
2-methylnaphthalene	67.0 40-140
acenaphthylene	71.0 40-140
acenaphthene	70.2 40-140
fluorene	77.0 40-140
phenanthrene	77.7 40-140
anthracene	76.8 40-140
fluoranthene	80.2 40-140
pyrene	83.2 40-140
benz [a] anthracene	78.2 40-140
chrysene	81.9 40-140
benzo [b] fluoranthene	78.7 40-140
benzo [k] fluoranthene	77.3 40-140
benzo [a] pyrene	79.2 40-140
indeno [1,2,3-cd] pyrene	78.0 40-140
dibenz [a,h] anthracene	79.3 40-140
benzo [ghi] perylene	77.7 40-140

Laboratory Control Sample Duplicate

Date Extracted:	08/04/11				
Date Analyzed:	8/4/2011				
File Name:	M9147				
% Recovery	Acceptance Limits	Verdict	Relative	Limits	Verdict
61.7	40-140	ok	13	<20	ok
60.4	40-140	ok	10	<20	ok
63.3	40-140	ok	11	<20	ok
63.8	30-130	ok	9.5	<20	ok
66.6	40-140	ok	15	<20	ok
67.5	40-140	ok	14	<20	ok
69.3	40-140	ok	10	<20	ok
70.5	40-140	ok	13	<20	ok
72.9	40-140	ok	13	<20	ok
71.5	40-140	ok	9.0	<20	ok
71.4	40-140	ok	14	<20	ok
74.3	40-140	ok	5.7	<20	ok
64.4	40-140	ok	18	<20	ok
70.4	40-140	ok	12	<20	ok
70.6	40-140	ok	10.0	<20	ok
69.3	40-141	ok	13	<20	ok
69.7	40-142	ok	11	<20	ok

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits	Verdict
NITROBENZENE-D5	70.8	30-130	ok	65.6	30-130	ok	7.6	<20	ok
2-FLUOROBIPHENYL	70.4	30-130	ok	67.0	30-130	ok	4.9	<20	ok
p-TERPHENYL-D14	80.0	30-130	ok	74.3	30-130	ok	7.3	<20	ok

GZA GEOENVIRONMENTAL, INC.
 ENVIRONMENTAL CHEMISTRY LABORATORY
 106 SOUTH STREET, HOPKINTON, MA 01748 (508)435-9244
 MASSACHUSETTS LABORATORY I.D. NO. MA092

TPH
TOTAL PETROLEUM HYDROCARBONS IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 8/1/11 Aqueous

METHOD BLANK	AQUEOUS	SOLID	
	ug/L-PPB	mg/kg - PPM	
TPH	<200	<10	
Surrogate:	Recovery (%)	Limits-Aqueous	Limits-Solid
***p-Terphenyl	56.8	40-130	40-130

LABORATORY CONTROL SAMPLE /	LCS	LCSD			
DUPLICATE LCS	Recovery (%)	Recovery (%)	Limits	RPD	Limits
TPH	68.9	62.6	40-150	9.58	<30
Surrogate:					
***p-Terphenyl	55.7	53.0			

*Matrix Spike / Duplicate Spike performed as per method and reported if assigned on the Chain of Custody.

GZA GEOENVIRONMENTAL, INC.
 ENVIRONMENTAL CHEMISTRY LABORATORY
 106 SOUTH STREET, HOPKINTON, MA 01748 (508)435-9244
 MASSACHUSETTS LABORATORY I.D. NO. MA092

TPH
TOTAL PETROLEUM HYDROCARBONS IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 8/3/11 Aqueous

METHOD BLANK	AQUEOUS	SOLID	
	ug/L-PPB	mg/kg - PPM	
TPH	<200	<10	
Surrogate:	Recovery (%)	Limits-Aqueous	Limits-Solid
***p-Terphenyl	58.5	40-130	40-130

LABORATORY CONTROL SAMPLE /	LCS	LCSD			
DUPLICATE LCS	Recovery (%)	Recovery (%)	Limits	RPD	Limits
TPH	51.7	56.7	40-150	9.23	<30
Surrogate:					
***p-Terphenyl	60.2	71.3			

*Matrix Spike / Duplicate Spike performed as per method and reported if assigned on the Chain of Custody.

Sample ID	Date/Time Sampled	Matrix A=Air S=Soil GW=Ground W. SW=Surface W. WW=Waste W. DW=Drinking W. P=Product (Specify)	ANALYSIS REQUIRED	Notes
MW-333D	7/27/11 13:30	GW	GC Methane, Ethane, Ethene EPA 8260 EPA 8021- Full List EPA 8021- 8010 List (Chlor.) EPA 8021- 8020 List (BTEX) EPA 524.2 DW VOCs EPA 624 WW VOCs EPA 601 □ 602 WW VOCs EPA 8270 SVOCs EPA 8270 PPH □ A □ BN EPA 625 WW SVOCs EPA 8082-PCBs EPA 8081-Pest TPH-GC (Mod. 8100) - TPH-GC w/FING EPH (MA DEP) VPH (MA DEP) Metals □ PPM-13 □ R-8 MCP 14 Metals (MA) Metals LF-15 (RJ) Metals (List Below) ** TCPLP - Specify Below SPLP - Specify Below EPA 300 □ CI □ NO3 □ SO4 TOTAL CHLORIDE Dissolved CHLORIDE	
MW-310S	10:30	GW		
MW-310D	10:50	GW		
MW-333S	13:10	GW		
MW-326S	16:30	GW		
MW-326D	16:20	GW		
MW-200	11:45	GW		
MW-339D	12:10	GW		
MW-339S	10:50	GW		
MW-201	12:40	GW		
MW-312S	16:00	GW		
MW-312D	15:55	GW		
BD#1	12:10	GW		

RESERVATIVE (CHCl, M-Methanol, N-HNO3, S-H2SO4, Na-NaOH, O-Other)*

CONTAINER TYPE (□ Plastic, □ Glass, V-Vial, T-Teflon, O-Other)*

DATE/TIME RECEIVED BY: 7/27/11 19:17 MADE

DATE/TIME RECEIVED BY: 7/28/11 14:47 MADE

DATE/TIME RECEIVED BY: 7/28/11 14:47 MADE

Project Manager: MEG KILPATRICK

GZA GEOENVIRONMENTAL, INC.

530 Broadway
Providence, RI 02903
(401) 421-4140
FAX (401) 751-8613

TURNAROUND TIME: Standard Rush

Days, Approved by: 7/28

LAB USE: Temp Blank
Cooler Air

GZA FILE NO: 05043654.00

TASK NO: 33

P.O. NO: 33

PROJECT: TIPWATER GW SAMPLING

LOCATION: TIPWATER, PAVYUCLT, RI

COLLECTOR(S): MAT BUREN & SOPHIA NARKIEWICZ

NOTES: (Unless otherwise noted, all samples have been refrigerated to 4 +/- 2°C)
"Specify "Other" preservatives and container types in this space."
Dissolved CHLORIDE SAMPLES WERE FIELD FILTERED.
SEND RESULTS TO MEG KILPATRICK & SOPHIA NARKIEWICZ

7/28/11

33

2

530 Broadway
Providence, RI 02903
(401) 421-4140
FAX (401) 751-8613

1107-00128
(for lab use only)

CHAIN-OF-CUSTODY RECORD

[illegible]

CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Date Received: 7/29/11
Date Reported: 8/4/11
P.O. #: 8-35223
Work Order #: 1107-14700

DESCRIPTION: GZA FILE# 05.0043654.00 FORMER TIDEWATER FACILITY

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

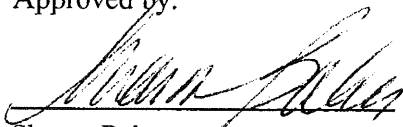
Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.
The Certificate of Analysis shall not be reproduced except in full, without written approval of R. I. Analytical.
Results relate only to samples submitted to the laboratory for analysis.
Test results are not blank corrected.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844

This Certificate represents all data associated with the referenced work order and is paginated for completeness. The complete Certificate includes one attachment; the original Chain of Custody.

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Sharon Baker
MIS / Data Reporting Manager

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

GZA GeoEnvironmental Labs

Date Received: 7/29/11

Work Order #: 1107-14700

GZA FILE# 05.0043654.00 FORMER TIDEWATER FACILITY

Sample # 001

SAMPLE DESCRIPTION: MW-7

SAMPLE TYPE: COMPOSITE

SAMPLE DATE/TIME: 7/28/2011

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.02	0.01	mg/l	SM-4500CN-C E	8/4/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

Sample # 002

SAMPLE DESCRIPTION: MW-316D

SAMPLE TYPE: COMPOSITE

SAMPLE DATE/TIME: 7/28/2011

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Total Cyanide	0.01	0.01	mg/l	SM-4500CN-C E	8/4/11	EC
Dissolved Free Cyanide	<0.01	0.01	mg/l	SM 4500CN C E	8/3/11	EC

QA/QC Report

Client: GZA GeoEnvironmental Labs

WO #: 1107-14700

Date: 8/4/2011

-Method Blanks Results-

Parameter	Units	Results	Date Analyzed
Total Cyanide	mg/l	<0.01	8/4/2011
Dissolved Free Cyanide	mg/l	<0.01	8/2/2011

-LCS/LCS Duplicate Data Results-

Parameter	Spike Conc	LCS Conc	LCS % Rec	LCS Dup Conc	LCS DUP % Rec	% RPD	Date Analyzed
Total Cyanide	0.10	0.104	104	0.101	101	3	8/4/2011
Dissolved Free Cyanide	0.10	0.096	96	0.090	90	6	8/3/2011

Case Narrative

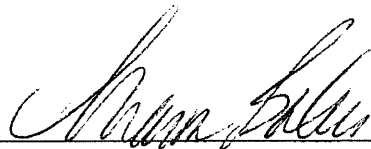
Date: 8/4/2011

GZA GeoEnvironmental Labs
Attn: Ms. Michelle Mirenda
Engineers and Scientists
106 South Street
Hopkinton, MA 01748

Project: GZA FILE# 05.0043654.00 FORMERTIDEWATER FACILITY

RIAL WO#: 1107-14700

R.I. Analytical Laboratories received Two Groundwater samples from the GZA GeoEnvironmental Labs on July 29, 2011. The samples were transported and delivered to the laboratory in a cooler on ice (at 1.0 degree C). The samples were received in good condition. Upon arrival the samples were logged into our LIMS system and assigned a work order number of 1107-14700.



Sharon Baker
Data Reporting / MIS Manager



GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: **MA092** NH: **2028**
CT: **PH0579** RI: **LAO00236**
NELAC - NYS DOH: **11063**

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project No.: **05.0043654.00**
Work Order No.: **1107-00137**
Date Received: **07/29/2011**
Date Reported: **08/09/2011**

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
07/28/2011	Aqueous	1107-00137 001	MW-7
07/28/2011	Aqueous	1107-00137 002	MW-316D
07/28/2011	Aqueous	1107-00137 003	MW-316S
07/28/2011	Aqueous	1107-00137 004	Trip Blank



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 07/29/11 via x GZA courier, EC, FEDEX, or hand delivered. The temperature of the x temperature blank/ cooler air, was 4.7 degrees C. The temperature requirement for most analyses is above freezing to 6 degrees C. The samples were received intact for all requested analyses.

The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

2. Subcontracted Analyses

Analyses for Total and Dissolved Cyanide were subcontracted to Rhode Island Analytical, Warwick RI (RIAL); Certification MA: MA-RI015, NH: 253700 A&B, CT: PH-0508, ME: RI015, RI: RI-033, NY:11726,

The data is included in GZA's report for ease of electronic data transfer and is indicated by "XXX" in the tech column. The data report from the subcontractor is attached.

3. EPA Method 8260 - VOCs

The Laboratory Control Sample (LCS) (8/3/2011 S) had a(n) 8260 List analyte outside of the 70-130% acceptance criteria. Specific outlier includes: chloromethane (131%).

The Laboratory Control Sample Duplicate (LCSD) (8/3/2011 S) had a(n) 8260 List analyte outside of the 70-130% acceptance criteria. Specific outlier includes: chloromethane (144%).

The Method Blank (MB) (8/3/2011 S) had an 8260 List analyte above the reporting limit. The specific outlier includes: acetone (13ug/L). Method 8260 permits common lab contaminants to be present in the MB as long as they are <5 times the reporting limit. Any sample with acetone above the reporting limit has been flagged with a "B" qualifier.

Attach QC 8260 8/3/2011 "S" - Aqueous

4. Total Petroleum Hydrocarbons

Attach QC TPH 08/04/11 - Aqueous

5. EPA Method 8270 - SVOCs (PAHs)

Per the Project Manager, a subset of the analyte list for Method 8270 (Semivolatile Organic Compounds by GC/MS) has been provided.

Attach QC 8270 8/4/2011 "I" - Aqueous



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Data Authorized By: _____

GZA GeoEnvironmental, Inc. has NELAC validation for the following methods:

Wastewater: Methods 624,625,245.1,150.2,120.1, 200.7 (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti).

Aqueous: Methods 8260B, 8270D, 8081B, 8082A, 7470, 150.2, 120.1, 1311, 6010C (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti), 300.0 (Cl, F, SO₄, NO₃, NO₂, Ophos), MA DEP EPH/VPH.

Soil: Methods 8260B, 8270D, 8081B, 8082A, 7471B, 9045, 1311, 6010C (PP13, RCRA8, and Fe, Mg, Mn, Al, V, Co, Mo, Sn, Ca), MA DEP VPH/EPH.

Abbreviations:

% R = % Recovery

DF = Dilution Factor

DFS = Dilution Factor Solids

CF = Calculation Factor

DO = Diluted Out

Method Key:

Method 8260: The current version of the method is 8260B.

Method 8270: The current version of the method is 8270D.

Method 6010: The current version of the method is 6010C.

Method 8081: The current version of the method is 8081B.

Method 8082: The current version of the method is 8082A.

Method 7471: The current version of the method is 7471B.

The current Metals preparation methods are: 3010A (aqueous) and 3051 (solid).

Please note that the laboratory signed copy of the chain of custody record is an integral part of the data report.

The laboratory report shall not be reproduced except in full without the written consent of the laboratory.

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-7**

Sample No.: **001**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				KAC	08/03/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Acetone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Butanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Hexanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-7**

Sample No.: **001**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	99.7	70-130	% R	KAC	08/03/2011
***Toluene-D8	EPA 8260	110	70-130	% R	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-7**

Sample No.: **001**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	91.8	70-130	% R	KAC	08/03/2011
Preparation	EPA 5030B	1.0		CF	KAC	08/03/2011
PAHS BY GCMS	EPA 8270				CMG	08/04/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	68.3	30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	64.0	30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	60.1	30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		<200	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		55.4	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.02	0.01	mg/L	XXX	08/04/2011
Dissolved Free Cyanide	SM-4500CN-C E	<0.01	0.01	mg/L	XXX	08/03/2011
RI Excel Deliverables						
GB Groundwater Objective	Excel Deliverable					



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-316D**

Sample No.: **002**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				KAC	08/03/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Vinyl chloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Acetone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Carbon disulfide	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Methyl tert-butyl ether	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Butanone (MEK)	EPA 8260	<10	10	ug/L	KAC	08/03/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Carbon tetrachloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Methyl-2-pentanone (MIBK)	EPA 8260	<10	10	ug/L	KAC	08/03/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-316D**

Sample No.: **002**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
2-Hexanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
n-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromo-3-chloropropane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	102	70-130	% R	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-316D**

Sample No.: **002**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***Toluene-D8	EPA 8260	109	70-130	% R	KAC	08/03/2011
***4-Bromofluorobenzene	EPA 8260	93.7	70-130	% R	KAC	08/03/2011
Preparation	EPA 5030B	1.0		CF	KAC	08/03/2011
PAHS BY GCMS	EPA 8270				CMG	08/04/2011
Naphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
2-Methylnaphthalene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Acenaphthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluorene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Phenanthrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Chrysene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [b] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [k] Fluoranthene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [a] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Indeno [1,2,3-cd] Pyrene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Dibenzo [a,h] Anthracene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Benzo [g,h,i] Perylene	EPA 8270	<2.0	2.0	ug/L	CMG	08/04/2011
Surrogates:	EPA 8270					
***Nitrobenzene-D5	EPA 8270	67.3	30-130	% R	CMG	08/04/2011
***2-Fluorobiphenyl	EPA 8270	62.9	30-130	% R	CMG	08/04/2011
***P-Terphenyl-D14	EPA 8270	69.2	30-130	% R	CMG	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011
TOTAL PETROLEUM HYDROCARBON	Mod. EPA 8100				RJD	08/04/2011
Hydrocarbon Content		<200	200	ug/L	RJD	08/04/2011
Surrogate:						
***p-Terphenyl		56.5	40-130	% R	RJD	08/04/2011
Extraction	EPA 3510C	1.0		DF	BAF	08/04/2011
SUBCONTRACTED ANALYTES						
Total Cyanide	SM-4500CN-C E	0.01	0.01	mg/L	XXX	08/04/2011
Dissolved Cyanide	SM 4500CN C E	<0.01	0.01	mg/l	XXX	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-316S**

Sample No.: **003**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				KAC	08/03/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Acetone	EPA 8260	12 B	10	ug/L	KAC	08/03/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Butanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Hexanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-316S**

Sample No.: **003**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	100	70-130	% R	KAC	08/03/2011
***Toluene-D8	EPA 8260	112	70-130	% R	KAC	08/03/2011



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Hopkinton, MA 01748
(781) 278-4700

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ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **MW-316S**

Sample No.: **003**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	92.1	70-130	% R	KAC	08/03/2011
Preparation	EPA 5030B	1.0		CF	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

Project No.: **05.0043654.00**

Date Received: **07/29/2011**

Date Reported: **08/09/2011**

Work Order No.: **1107-00137**

Sample ID: **Trip Blank**

Sample No.: **004**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
VOLATILE ORGANICS	EPA 8260				KAC	08/03/2011
Dichlorodifluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Vinyl Chloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromomethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichlorofluoromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Diethylether	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Acetone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dichloromethane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Methyl-Tert-Butyl-Ether	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Butanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
2,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
cis-1,2-Dichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Chloroform	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrahydrofuran	EPA 8260	<10	10	ug/L	KAC	08/03/2011
1,1,1-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Carbon Tetrachloride	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Benzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Trichloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromodichloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromomethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Methyl-2-Pentanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011
cis-1,3-Dichloropropene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Toluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
trans-1,3-Dichloropropene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,1,2-Trichloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Hexanone	EPA 8260	<10	10	ug/L	KAC	08/03/2011



ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

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Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
1,3-Dichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Tetrachloroethene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Dibromochloromethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromoethane (EDB)	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Chlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,1,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
o-Xylene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Styrene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromoform	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
Isopropylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,1,2,2-Tetrachloroethane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,3-Trichloropropane	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Bromobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
N-Propylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
2-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3,5-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
4-Chlorotoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
tert-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2,4-Trimethylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
sec-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
p-Isopropyltoluene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,3-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,4-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
n-Butylbenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
1,2-Dibromo-3-Chloropropane	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,4-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Hexachlorobutadiene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Naphthalene	EPA 8260	<2.0	2.0	ug/L	KAC	08/03/2011
1,2,3-Trichlorobenzene	EPA 8260	<1.0	1.0	ug/L	KAC	08/03/2011
Surrogates:	EPA 8260					
***1,2-Dichloroethane-D4	EPA 8260	109	70-130	% R	KAC	08/03/2011
***Toluene-D8	EPA 8260	112	70-130	% R	KAC	08/03/2011



GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

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ANALYTICAL REPORT

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530 Broadway
Providence, RI 02909

Meg Kilpatrick/S Narkiewicz

Project Name.: **Former Tidewater Facility**

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Sample No.: **004**

Sample Date: **07/28/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date
***4-Bromofluorobenzene	EPA 8260	90.4	70-130	% R	KAC	08/03/2011
Preparation	EPA 5030B	1.0		CF	KAC	08/03/2011

GZA GEOENVIRONMENTAL, INC.
 ENVIRONMENTAL CHEMISTRY LABORATORY
 106 SOUTH STREET, HOPKINTON, MA 01748 (508)435-9244
 MASSACHUSETTS LABORATORY I.D. NO. MA092

TPH
TOTAL PETROLEUM HYDROCARBONS IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: **08/04/11** **Aqueous**

METHOD BLANK	AQUEOUS	SOLID	
	ug/L-PPB	mg/kg - PPM	
TPH	<200	<10	
Surrogate:	Recovery (%)	Limits-Aqueous	Limits-Solid
***p-Terphenyl	57.6	40-130	40-130

LABORATORY CONTROL SAMPLE /	LCS	LCSD			
DUPLICATE LCS	Recovery (%)	Recovery (%)	Limits	RPD	Limits
TPH	70.4	69.7	40-150	1.00	<30
Surrogate:					
***p-Terphenyl	64.7	64.0			

*Matrix Spike / Duplicate Spike performed as per method and reported if assigned on the Chain of Custody.

Method Blank

Date Analyzed:	8/3/2011	
Volatile Organics	Conc. ug/L	Acceptance Limit
dichlorodifluoromethane	< 1.0	< 1.0
chloromethane	< 1.0	< 1.0
vinyl chloride	< 0.5	< 0.5
bromomethane	< 1.0	< 1.0
chloroethane	< 0.5	< 0.5
trichlorofluoromethane	< 1.0	< 1.0
diethyl ether	< 2.5	< 2.5
acetone	23	< 10
1,1-dichloroethene	< 0.5	< 0.5
carbon disulfide	< 5.0	< 5.0
dichloromethane	< 1.0	< 1.0
methyl-tert-butyl-ether	< 0.5	< 0.5
trans-1,2-dichloroethene	< 0.5	< 0.5
1,1-dichloroethane	< 0.5	< 0.5
2-butanone	< 10	< 10
2,2-dichloropropane	< 0.5	< 0.5
cis-1,2-dichloroethene	< 0.5	< 0.5
chloroform	< 0.5	< 0.5
bromochloromethane	< 0.5	< 0.5
tetrahydrofuran	< 5.0	< 5.0
1,1,1-trichloroethane	< 0.5	< 0.5
1,1-dichloropropene	< 0.5	< 0.5
carbon tetrachloride	< 0.5	< 0.5
1,2-dichloroethane	< 0.5	< 0.5
benzene	< 0.5	< 0.5
trichloroethene	< 0.5	< 0.5
1,2-dichloropropane	< 0.5	< 0.5
bromodichloromethane	< 0.5	< 0.5
dibromomethane	< 0.5	< 0.5
4-methyl-2-pentanone	< 10	< 10
cis-1,3-dichloropropene	< 0.5	< 0.5
toluene	< 0.5	< 0.5
trans-1,3-dichloropropene	< 1.0	< 1.0
1,1,2-trichloroethane	< 0.5	< 0.5
2-hexanone	< 10	< 10
1,3-dichloropropane	< 0.5	< 0.5
tetrachloroethene	< 0.5	< 0.5
dibromochloromethane	< 0.5	< 0.5
1,2-dibromoethane (EDB)	< 1.0	< 1.0
chlorobenzene	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5
ethylbenzene	< 0.5	< 0.5
1,1,2,2-tetrachloroethane	< 0.5	< 0.5
m&p-xylene	< 1.0	< 1.0
o-xylene	< 0.5	< 0.5
styrene	< 0.5	< 0.5
bromoforn	< 1.0	< 1.0
isopropylbenzene	< 0.5	< 0.5
1,2,3-trichloropropane	< 0.5	< 0.5
bromobenzene	< 0.5	< 0.5
n-propylbenzene	< 0.5	< 0.5
2-chlorotoluene	< 0.5	< 0.5
1,3,5-trimethylbenzene	< 0.5	< 0.5
4-chlorotoluene	< 0.5	< 0.5
tert-butyl-benzene	< 0.5	< 0.5
1,2,4-trimethylbenzene	< 0.5	< 0.5
sec-butyl-benzene	< 0.5	< 0.5
p-isopropyltoluene	< 0.5	< 0.5
1,3-dichlorobenzene	< 0.5	< 0.5
1,4-dichlorobenzene	< 0.5	< 0.5
n-butylbenzene	< 0.5	< 0.5
1,2-dichlorobenzene	< 0.5	< 0.5
1,2-dibromo-3-chloropropane	< 2.5	< 2.5
1,2,4-trichlorobenzene	< 0.5	< 0.5
hexachlorobutadiene	< 0.5	< 0.5
naphthalene	< 1.0	< 1.0

Laboratory Control Sample

Date Analyzed:	8/3/2011	
Spike Concentration = 20ug/L	% Recovery	Acceptance Limits
dichlorodifluoromethane	125	70-130
chloromethane	131	70-130
vinyl chloride	109	80-120
bromomethane	103	70-130
chloroethane	108	70-130
trichlorofluoromethane	92.1	70-130
diethyl ether	92.9	70-130
acetone	99.9	70-130
1,1-dichloroethene	101	80-120
carbon disulfide	112	70-130
dichloromethane	94.2	70-130
methyl-tert-butyl-ether	88.5	70-130
trans-1,2-dichloroethene	97.1	70-130
1,1-dichloroethane	98.8	70-130
2-butanone	96.3	70-130
2,2-dichloropropane	105	70-130
cis-1,2-dichloroethene	99.7	70-130
chloroform	93.8	80-120
bromochloromethane	93.2	70-130
tetrahydrofuran	98.5	70-130
1,1,1-trichloroethane	91.9	70-130
1,1-dichloropropene	98.4	70-130
carbon tetrachloride	92.4	70-130
1,2-dichloroethane	91.2	70-130
benzene	101	70-130
trichloroethene	94.5	70-130
1,2-dichloropropane	103	80-120
bromodichloromethane	91.0	70-130
dibromomethane	90.7	70-130
4-methyl-2-pentanone	98.2	70-130
cis-1,3-dichloropropene	95.3	70-130
toluene	102	80-120
trans-1,3-dichloropropene	95.4	70-130
1,1,2-trichloroethane	89.1	70-130
2-hexanone	92.3	70-130
1,3-dichloropropane	89.5	70-130
tetrachloroethene	88.5	70-130
dibromochloromethane	87.5	70-130
1,2-dibromoethane (EDB)	88.9	70-130
chlorobenzene	92.7	70-130
1,1,1,2-tetrachloroethane	87.0	70-130
ethylbenzene	95.8	80-120
1,1,2,2-tetrachloroethane	86.3	70-130
m&p-xylene	90.5	70-130
o-xylene	97.1	70-130
styrene	99.3	70-130
bromoforn	91.4	70-130
isopropylbenzene	100	70-130
1,2,3-trichloropropane	92.2	70-130
bromobenzene	92.4	70-130
n-propylbenzene	101	70-130
2-chlorotoluene	98.3	70-130
1,3,5-trimethylbenzene	98.2	70-130
4-chlorotoluene	98.0	70-130
tert-butyl-benzene	98.6	70-130
1,2,4-trimethylbenzene	99.5	70-130
sec-butyl-benzene	102	70-130
p-isopropyltoluene	99.8	70-130
1,3-dichlorobenzene	95.5	70-130
1,4-dichlorobenzene	94.5	70-130
n-butylbenzene	104	70-130
1,2-dichlorobenzene	95.9	70-130
1,2-dibromo-3-chloropropane	89.2	70-130
1,2,4-trichlorobenzene	95.9	70-130
hexachlorobutadiene	93.3	70-130
naphthalene	93.8	70-130

Laboratory Control Sample Duplicate

Date Analyzed:	8/3/2011	
	% Recovery	Acceptance Limits
dichlorodifluoromethane	130	70-130
chloromethane	144	70-130
vinyl chloride	114	70-130
bromomethane	109	70-130
chloroethane	110	70-130
trichlorofluoromethane	97.6	70-130
diethyl ether	96.1	70-130
acetone	103	70-130
1,1-dichloroethene	102	70-130
carbon disulfide	116	70-130
dichloromethane	97.1	70-130
methyl-tert-butyl-ether	94.9	70-130
trans-1,2-dichloroethene	102	70-130
1,1-dichloroethane	104	70-130
2-butanone	97.1	70-130
2,2-dichloropropane	109	70-130
cis-1,2-dichloroethene	106	70-130
chloroform	98.2	70-130
bromochloromethane	98.1	70-130
tetrahydrofuran	106	70-130
1,1,1-trichloroethane	95.4	70-130
1,1-dichloropropene	102	70-130
carbon tetrachloride	97.1	70-130
1,2-dichloroethane	93.7	70-130
benzene	105	70-130
trichloroethene	99.3	70-130
1,2-dichloropropane	109	70-130
bromodichloromethane	93.5	70-130
dibromomethane	93.4	70-130
4-methyl-2-pentanone	100.0	70-130
cis-1,3-dichloropropene	100	70-130
toluene	105	70-130
trans-1,3-dichloropropene	99.2	70-130
1,1,2-trichloroethane	93.0	70-130
2-hexanone	96.1	70-130
1,3-dichloropropane	92.2	70-130
tetrachloroethene	89.8	70-130
dibromochloromethane	91.2	70-130
1,2-dibromoethane (EDB)	94.7	70-130
chlorobenzene	97.3	70-130
1,1,1,2-tetrachloroethane	92.1	70-130
ethylbenzene	98.2	70-130
1,1,2,2-tetrachloroethane	92.8	70-130
m&p-xylene	94.9	70-130
o-xylene	96.6	70-130
styrene	102	70-130
bromoforn	91.3	70-130
isopropylbenzene	101	70-130
1,2,3-trichloropropane	90.5	70-130
bromobenzene	91.3	70-130
n-propylbenzene	101	70-130
2-chlorotoluene	97.5	70-130
1,3,5-trimethylbenzene	99.3	70-130
4-chlorotoluene	97.9	70-130
tert-butyl-benzene	97.0	70-130
1,2,4-trimethylbenzene	97.7	70-130
sec-butyl-benzene	100	70-130
p-isopropyltoluene	97.4	70-130
1,3-dichlorobenzene	93.5	70-130
1,4-dichlorobenzene	95.8	70-130
n-butylbenzene	102	70-130
1,2-dichlorobenzene	96.1	70-130
1,2-dibromo-3-chloropropane	91.1	70-130
1,2,4-trichlorobenzene	96.5	70-130
hexachlorobutadiene	92.0	70-130
naphthalene	94.5	70-130

Surrogates:	Recovery (%)	Acceptance Limits	Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Surrogates:	Recovery (%)	Acceptance Limits	Verdict	RPD	Acceptance Limits	Verdict
DIBROMOFLUOROMETHANE	105	70-130	DIBROMOFLUOROMETHANE	105	70-130	ok	DIBROMOFLUOROMETHANE	107	70-130	ok	1.65	<25	ok
1,2-DICHLOROETHANE-D4	108	70-130	1,2-DICHLOROETHANE-D4	102	70-130	ok	1,2-DICHLOROETHANE-D4	109	70-130	ok	6.91	<25	ok
1,2,4-TRICHLOROETHANE-D4	108	70-130	1,2,4-TRICHLOROETHANE-D4	110	70-130	ok	1,2,4-TRICHLOROETHANE-D4	110	70-130	ok	0.05	<25	ok
4-BROMOFLUOROBENZENE	94.3	70-130	4-BROMOFLUOROBENZENE	102	70-130	ok	4-BROMOFLUOROBENZENE	94.7	70-130	ok	7.36	<25	ok
1,2-DICHLOROETHANE-D4	97.9	70-130	1,2-DICHLOROETHANE-D4	110	70-130	ok	1,2-DICHLOROETHANE-D4	105	70-130	ok	4.40	<25	ok

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Method Blank

Date Extracted:	08/04/11	
Date Analyzed:	8/4/2011	
File Name:	M9145	
Semi-Volatile Organics	Result	Reporting Limit
naphthalene	ND	2.0
2-methylnaphthalene	ND	2.0
acenaphthylene	ND	2.0
acenaphthene	ND	2.0
fluorene	ND	2.0
phenanthrene	ND	2.0
anthracene	ND	2.0
fluoranthene	ND	2.0
pyrene	ND	2.0
benz [a] anthracene	ND	2.0
chrysene	ND	2.0
benzo [b] fluoranthene	ND	2.0
benzo [k] fluoranthene	ND	2.0
benzo [a] pyrene	ND	2.0
indeno [1,2,3-cd] pyrene	ND	2.0
dibenz [a,h] anthracene	ND	2.0
benzo [ghi] perylene	ND	2.0
Surrogates:	Recovery (%)	Acceptance Limits
NITROBENZENE-D5	70.4	30-130
2-FLUOROBIPHENYL	70.6	30-130
p-TERPHENYL-D14	80.7	30-130

EPA Method 8270/625 Aqueous Method Blank (MB) and Laboratory Control Sample (LCS) Data

Laboratory Control Sample

Date Extracted:	08/04/11
Date Analyzed:	8/4/2011
File Name:	M9146
Spike Concentration = 20ug/L	
% Recovery	Acceptance Limits
naphthalene	70.3 40-140
2-methylnaphthalene	67.0 40-140
acenaphthylene	71.0 40-140
acenaphthene	70.2 40-140
fluorene	77.0 40-140
phenanthrene	77.7 40-140
anthracene	76.8 40-140
fluoranthene	80.2 40-140
pyrene	83.2 40-140
benz [a] anthracene	78.2 40-140
chrysene	81.9 40-140
benzo [b] fluoranthene	78.7 40-140
benzo [k] fluoranthene	77.3 40-140
benzo [a] pyrene	79.2 40-140
indeno [1,2,3-cd] pyrene	78.0 40-140
dibenz [a,h] anthracene	79.3 40-140
benzo [ghi] perylene	77.7 40-140

Laboratory Control Sample Duplicate

Date Extracted:	08/04/11				
Date Analyzed:	8/4/2011				
File Name:	M9147				
% Recovery	Acceptance Limits	Verdict	Relative	Limits	Verdict
61.7	40-140	ok	13	<20	ok
60.4	40-140	ok	10	<20	ok
63.3	40-140	ok	11	<20	ok
63.8	30-130	ok	9.5	<20	ok
66.6	40-140	ok	15	<20	ok
67.5	40-140	ok	14	<20	ok
69.3	40-140	ok	10	<20	ok
70.5	40-140	ok	13	<20	ok
72.9	40-140	ok	13	<20	ok
71.5	40-140	ok	9.0	<20	ok
71.4	40-140	ok	14	<20	ok
74.3	40-140	ok	5.7	<20	ok
64.4	40-140	ok	18	<20	ok
70.4	40-140	ok	12	<20	ok
70.6	40-140	ok	10.0	<20	ok
69.3	40-141	ok	13	<20	ok
69.7	40-142	ok	11	<20	ok

Surrogates:	Recovery (%)	Acceptance Limits	Verdict	Recovery (%)	Acceptance Limits	Verdict	Relative % Diff.	Limits	Verdict
NITROBENZENE-D5	70.8	30-130	ok	65.6	30-130	ok	7.6	<20	ok
2-FLUOROBIPHENYL	70.4	30-130	ok	67.0	30-130	ok	4.9	<20	ok
p-TERPHENYL-D14	80.0	30-130	ok	74.3	30-130	ok	7.3	<20	ok

W.O. # 1107-00137
(for lab use only)

[illegible]



CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.00)
ESS Laboratory Work Order Number: 1207099

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 4:31 pm, Jul 18, 2012

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.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

SAMPLE RECEIPT

The following samples were received on July 10, 2012 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	SampleName	Matrix	Analysis
1207099-01	MW-201	Ground Water	8100M, 8260B, 8270C, 9014
1207099-02	MW-208	Ground Water	8100M, 8260B, 8270C, 9014
1207099-03	MW-310S	Ground Water	8100M, 8260B, 8270C, 9014
1207099-04	MW-310D	Ground Water	8100M, 8260B, 8270C, 9014
1207099-05	MW-334S	Ground Water	8100M, 8260B, 8270C, 9014
1207099-06	MW-334D	Ground Water	8100M, 8260B, 8270C, 9014
1207099-07	MW-318D	Ground Water	8100M, 8260B, 8270C, 9014
1207099-08	MW-318S	Ground Water	8100M, 8260B, 8270C, 9014
1207099-09	BD071012	Ground Water	8100M, 8260B, 8270C, 9014
1207099-10	TBLK071012	Aqueous	8260B



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CVG0122-CCV1 [Continuing Calibration recovery is below lower control limit \(C-\).](#)

1,4-Dioxane - Screen (64% @ 70-130%)

8270C Polynuclear Aromatic Hydrocarbons

1207099-04 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)

1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)

1207099-08 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)

1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)

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
Client Sample ID: MW-201
Date Sampled: 07/10/12 12:06
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TAJ
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	1.77 (0.20)		1	07/13/12 4:07	CVG0082	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>107 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 07/10/12 12:06

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,1,1-Trichloroethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/13/12 22:24	CVG0101	CG21501
1,1,2-Trichloroethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,1-Dichloroethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,1-Dichloroethene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,1-Dichloropropene	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2,3-Trichloropropane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2,4-Trimethylbenzene	0.0019 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/13/12 22:24	CVG0101	CG21501
1,2-Dibromoethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2-Dichlorobenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2-Dichloroethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,2-Dichloropropane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,3-Dichlorobenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,3-Dichloropropane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,4-Dichlorobenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
1,4-Dioxane - Screen	ND (0.500)		1	07/13/12 22:24	CVG0101	CG21501
1-Chlorohexane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
2,2-Dichloropropane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
2-Butanone	ND (0.0100)		1	07/13/12 22:24	CVG0101	CG21501
2-Chlorotoluene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
2-Hexanone	ND (0.0100)		1	07/13/12 22:24	CVG0101	CG21501
4-Chlorotoluene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
4-Isopropyltoluene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
4-Methyl-2-Pentanone	ND (0.0250)		1	07/13/12 22:24	CVG0101	CG21501
Acetone	ND (0.0100)		1	07/13/12 22:24	CVG0101	CG21501
Benzene	0.0397 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 07/10/12 12:06

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
Bromochloromethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Bromodichloromethane	ND (0.0006)		1	07/13/12 22:24	CVG0101	CG21501
Bromoform	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Bromomethane	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
Carbon Disulfide	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Carbon Tetrachloride	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Chlorobenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Chloroethane	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
Chloroform	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Chloromethane	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
cis-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
cis-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 22:24	CVG0101	CG21501
Dibromochloromethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Dibromomethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Dichlorodifluoromethane	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
Diethyl Ether	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Di-isopropyl ether	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Ethylbenzene	0.0163 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Hexachlorobutadiene	ND (0.0006)		1	07/13/12 22:24	CVG0101	CG21501
Hexachloroethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Isopropylbenzene	0.0129 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Methyl tert-Butyl Ether	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Methylene Chloride	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
Naphthalene	0.0032 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
n-Butylbenzene	0.0056 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
n-Propylbenzene	0.0124 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
sec-Butylbenzene	0.0018 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Styrene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
tert-Butylbenzene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 07/10/12 12:06

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Tetrachloroethene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Tetrahydrofuran	ND (0.0050)		1	07/13/12 22:24	CVG0101	CG21501
Toluene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
trans-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
trans-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 22:24	CVG0101	CG21501
Trichloroethene	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Trichlorofluoromethane	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Vinyl Acetate	ND (0.0050)		1	07/13/12 22:24	CVG0101	CG21501
Vinyl Chloride	ND (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Xylene O	0.0021 (0.0010)		1	07/13/12 22:24	CVG0101	CG21501
Xylene P,M	ND (0.0020)		1	07/13/12 22:24	CVG0101	CG21501
Xylenes (Total)	ND (0.0030)		1	07/13/12 22:24		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/13/12 22:24		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	95 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	107 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	91 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 07/10/12 12:06

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Acenaphthene	0.006 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Acenaphthylene	0.002 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Anthracene	0.004 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Benzo(a)anthracene	0.0004 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Benzo(a)pyrene	0.0003 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Benzo(b)fluoranthene	0.0003 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Chrysene	0.0004 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Fluoranthene	0.002 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Fluorene	0.012 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Naphthalene	0.002 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Phenanthrene	0.012 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102
Pyrene	0.003 (0.0002)		1	07/12/12 14:46	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	46 %		30-130
Surrogate: 2-Fluorobiphenyl	44 %		30-130
Surrogate: Nitrobenzene-d5	56 %		30-130
Surrogate: p-Terphenyl-d14	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-201
Date Sampled: 07/10/12 12:06
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0067 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0075 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-208
Date Sampled: 07/10/12 12:36
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TAJ
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	1.00 (0.20)		1	07/13/12 4:50	CVG0082	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	99 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-208

Date Sampled: 07/10/12 12:36

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,1,1-Trichloroethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/13/12 22:53	CVG0101	CG21501
1,1,2-Trichloroethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,1-Dichloroethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,1-Dichloroethene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,1-Dichloropropene	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2,3-Trichloropropane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/13/12 22:53	CVG0101	CG21501
1,2-Dibromoethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2-Dichlorobenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2-Dichloroethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,2-Dichloropropane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,3-Dichlorobenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,3-Dichloropropane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,4-Dichlorobenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
1,4-Dioxane - Screen	ND (0.500)		1	07/13/12 22:53	CVG0101	CG21501
1-Chlorohexane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
2,2-Dichloropropane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
2-Butanone	ND (0.0100)		1	07/13/12 22:53	CVG0101	CG21501
2-Chlorotoluene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
2-Hexanone	ND (0.0100)		1	07/13/12 22:53	CVG0101	CG21501
4-Chlorotoluene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
4-Isopropyltoluene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
4-Methyl-2-Pentanone	ND (0.0250)		1	07/13/12 22:53	CVG0101	CG21501
Acetone	ND (0.0100)		1	07/13/12 22:53	CVG0101	CG21501
Benzene	0.0017 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-208

Date Sampled: 07/10/12 12:36

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
Bromochloromethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Bromodichloromethane	ND (0.0006)		1	07/13/12 22:53	CVG0101	CG21501
Bromoform	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Bromomethane	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
Carbon Disulfide	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Carbon Tetrachloride	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Chlorobenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Chloroethane	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
Chloroform	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Chloromethane	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
cis-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
cis-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 22:53	CVG0101	CG21501
Dibromochloromethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Dibromomethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Dichlorodifluoromethane	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
Diethyl Ether	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Di-isopropyl ether	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Ethylbenzene	0.0050 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Hexachlorobutadiene	ND (0.0006)		1	07/13/12 22:53	CVG0101	CG21501
Hexachloroethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Isopropylbenzene	0.0037 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Methyl tert-Butyl Ether	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Methylene Chloride	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
Naphthalene	0.0028 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
n-Butylbenzene	0.0154 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
n-Propylbenzene	0.0019 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
sec-Butylbenzene	0.0077 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Styrene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
tert-Butylbenzene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-208

Date Sampled: 07/10/12 12:36

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Tetrachloroethene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Tetrahydrofuran	ND (0.0050)		1	07/13/12 22:53	CVG0101	CG21501
Toluene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
trans-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
trans-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 22:53	CVG0101	CG21501
Trichloroethene	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Trichlorofluoromethane	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Vinyl Acetate	ND (0.0050)		1	07/13/12 22:53	CVG0101	CG21501
Vinyl Chloride	ND (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Xylene O	0.0039 (0.0010)		1	07/13/12 22:53	CVG0101	CG21501
Xylene P,M	ND (0.0020)		1	07/13/12 22:53	CVG0101	CG21501
Xylenes (Total)	0.0039 (0.0030)		1	07/13/12 22:53		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/13/12 22:53		[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>105 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</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: 07/10/12 12:36

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Acenaphthene	0.003 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Acenaphthylene	0.002 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Anthracene	0.0005 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Chrysene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Fluoranthene	0.0003 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Fluorene	0.002 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Naphthalene	0.002 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Phenanthrene	0.002 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102
Pyrene	0.0005 (0.0002)		1	07/12/12 15:32	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	48 %		30-130
Surrogate: 2-Fluorobiphenyl	52 %		30-130
Surrogate: Nitrobenzene-d5	53 %		30-130
Surrogate: p-Terphenyl-d14	73 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-208
Date Sampled: 07/10/12 12:36
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-02
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0299 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310S
Date Sampled: 07/10/12 14:20
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (0.20)		1	07/13/12 21:51	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>100 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 07/10/12 14:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,1,1-Trichloroethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/13/12 23:22	CVG0101	CG21501
1,1,2-Trichloroethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,1-Dichloroethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,1-Dichloroethene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,1-Dichloropropene	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2,3-Trichloropropane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/13/12 23:22	CVG0101	CG21501
1,2-Dibromoethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2-Dichlorobenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2-Dichloroethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,2-Dichloropropane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,3-Dichlorobenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,3-Dichloropropane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,4-Dichlorobenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
1,4-Dioxane - Screen	ND (0.500)		1	07/13/12 23:22	CVG0101	CG21501
1-Chlorohexane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
2,2-Dichloropropane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
2-Butanone	ND (0.0100)		1	07/13/12 23:22	CVG0101	CG21501
2-Chlorotoluene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
2-Hexanone	ND (0.0100)		1	07/13/12 23:22	CVG0101	CG21501
4-Chlorotoluene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
4-Isopropyltoluene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
4-Methyl-2-Pentanone	ND (0.0250)		1	07/13/12 23:22	CVG0101	CG21501
Acetone	ND (0.0100)		1	07/13/12 23:22	CVG0101	CG21501
Benzene	0.0029 (0.0010)		1	07/13/12 23:22	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 07/10/12 14:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
Bromochloromethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Bromodichloromethane	ND (0.0006)		1	07/13/12 23:22	CVG0101	CG21501
Bromoform	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Bromomethane	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
Carbon Disulfide	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Carbon Tetrachloride	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Chlorobenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Chloroethane	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
Chloroform	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Chloromethane	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
cis-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
cis-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 23:22	CVG0101	CG21501
Dibromochloromethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Dibromomethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Dichlorodifluoromethane	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
Diethyl Ether	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Di-isopropyl ether	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Ethylbenzene	0.0012 (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Hexachlorobutadiene	ND (0.0006)		1	07/13/12 23:22	CVG0101	CG21501
Hexachloroethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Isopropylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Methyl tert-Butyl Ether	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Methylene Chloride	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
Naphthalene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
n-Butylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
n-Propylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
sec-Butylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Styrene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
tert-Butylbenzene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 07/10/12 14:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Tetrachloroethene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Tetrahydrofuran	ND (0.0050)		1	07/13/12 23:22	CVG0101	CG21501
Toluene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
trans-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
trans-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 23:22	CVG0101	CG21501
Trichloroethene	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Trichlorofluoromethane	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Vinyl Acetate	ND (0.0050)		1	07/13/12 23:22	CVG0101	CG21501
Vinyl Chloride	ND (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Xylene O	0.0010 (0.0010)		1	07/13/12 23:22	CVG0101	CG21501
Xylene P,M	ND (0.0020)		1	07/13/12 23:22	CVG0101	CG21501
Xylenes (Total)	ND (0.0030)		1	07/13/12 23:22		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/13/12 23:22		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	94 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	91 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 07/10/12 14:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Acenaphthene	0.0004 (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Acenaphthylene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Anthracene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Chrysene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Fluoranthene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Fluorene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Naphthalene	0.0004 (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Phenanthrene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102
Pyrene	ND (0.0002)		1	07/12/12 21:44	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	46 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	50 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	56 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	69 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310S
Date Sampled: 07/10/12 14:20
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-03
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0531 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310D
Date Sampled: 07/10/12 14:50
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: TAJ
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	11.6 (0.20)		1	07/13/12 6:15	CVG0082	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>92 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,1,1-Trichloroethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/13/12 23:50	CVG0101	CG21501
1,1,2-Trichloroethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,1-Dichloroethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,1-Dichloroethene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,1-Dichloropropene	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,2,3-Trichloropropane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,2,4-Trimethylbenzene	0.712 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/13/12 23:50	CVG0101	CG21501
1,2-Dibromoethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,2-Dichlorobenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,2-Dichloroethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,2-Dichloropropane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,3,5-Trimethylbenzene	0.180 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
1,3-Dichlorobenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,3-Dichloropropane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,4-Dichlorobenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
1,4-Dioxane - Screen	ND (0.500)		1	07/13/12 23:50	CVG0101	CG21501
1-Chlorohexane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
2,2-Dichloropropane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
2-Butanone	ND (0.0100)		1	07/13/12 23:50	CVG0101	CG21501
2-Chlorotoluene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
2-Hexanone	ND (0.0100)		1	07/13/12 23:50	CVG0101	CG21501
4-Chlorotoluene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
4-Isopropyltoluene	0.0170 (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
4-Methyl-2-Pentanone	ND (0.0250)		1	07/13/12 23:50	CVG0101	CG21501
Acetone	ND (0.0100)		1	07/13/12 23:50	CVG0101	CG21501
Benzene	0.618 (0.100)		100	07/17/12 19:33	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
Bromochloromethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Bromodichloromethane	ND (0.0006)		1	07/13/12 23:50	CVG0101	CG21501
Bromoform	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Bromomethane	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
Carbon Disulfide	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Carbon Tetrachloride	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Chlorobenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Chloroethane	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
Chloroform	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Chloromethane	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
cis-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
cis-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 23:50	CVG0101	CG21501
Dibromochloromethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Dibromomethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Dichlorodifluoromethane	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
Diethyl Ether	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Di-isopropyl ether	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Ethylbenzene	1.07 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
Hexachlorobutadiene	ND (0.0006)		1	07/13/12 23:50	CVG0101	CG21501
Hexachloroethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Isopropylbenzene	0.101 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
Methyl tert-Butyl Ether	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Methylene Chloride	ND (0.0020)		1	07/13/12 23:50	CVG0101	CG21501
Naphthalene	9.80 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
n-Butylbenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
n-Propylbenzene	0.0524 (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
sec-Butylbenzene	0.0050 (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Styrene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
tert-Butylbenzene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Tetrachloroethene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Tetrahydrofuran	ND (0.0050)		1	07/13/12 23:50	CVG0101	CG21501
Toluene	0.198 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
trans-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
trans-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 23:50	CVG0101	CG21501
Trichloroethene	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Trichlorofluoromethane	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Vinyl Acetate	ND (0.0050)		1	07/13/12 23:50	CVG0101	CG21501
Vinyl Chloride	ND (0.0010)		1	07/13/12 23:50	CVG0101	CG21501
Xylene O	0.735 (0.100)		100	07/17/12 19:33	CVG0101	CG21501
Xylene P,M	0.775 (0.200)		100	07/17/12 19:33	CVG0101	CG21501
Xylenes (Total)	1.51 (0.300)		100	07/17/12 19:33		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/13/12 23:50		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	90 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.394 (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Acenaphthene	0.158 (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Acenaphthylene	0.064 (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Anthracene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Benzo(a)anthracene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Benzo(a)pyrene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Benzo(b)fluoranthene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Benzo(g,h,i)perylene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Benzo(k)fluoranthene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Chrysene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Dibenzo(a,h)Anthracene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Fluoranthene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Fluorene	0.047 (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Naphthalene	5.76 (0.200)		1000	07/16/12 11:34	CVG0104	CG21102
Phenanthrene	0.029 (0.020)		100	07/16/12 10:58	CVG0104	CG21102
Pyrene	ND (0.020)		100	07/16/12 10:58	CVG0104	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	SD	30-130
Surrogate: 2-Fluorobiphenyl	%	SD	30-130
Surrogate: Nitrobenzene-d5	%	SD	30-130
Surrogate: p-Terphenyl-d14	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310D
Date Sampled: 07/10/12 14:50
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-04
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0293 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.132 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334S
Date Sampled: 07/10/12 13:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	0.55 (0.20)		1	07/13/12 22:34	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>118 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 07/10/12 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 15:23	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.0016 (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/15/12 15:23	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 15:23	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 15:23	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 15:23	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 15:23	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 15:23	CVG0103	CG21503
Benzene	0.0021 (0.0010)		1	07/15/12 15:23	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 07/10/12 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 15:23	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Chlorobenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 15:23	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Ethylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 15:23	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Isopropylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
Naphthalene	0.0429 (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
n-Propylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Styrene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 07/10/12 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 15:23	CVG0103	CG21503
Toluene	0.0012 (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 15:23	CVG0103	CG21503
Trichloroethene	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 15:23	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Xylene O	0.0013 (0.0010)		1	07/15/12 15:23	CVG0103	CG21503
Xylene P,M	ND (0.0020)		1	07/15/12 15:23	CVG0103	CG21503
Xylenes (Total)	ND (0.0030)		1	07/15/12 15:23		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 15:23		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	97 %		70-130
Surrogate: 4-Bromofluorobenzene	103 %		70-130
Surrogate: Dibromofluoromethane	91 %		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-334S

Date Sampled: 07/10/12 13:15

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.003 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Acenaphthene	0.001 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Acenaphthylene	0.0002 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Anthracene	0.0005 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Chrysene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Fluoranthene	0.0006 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Fluorene	0.001 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Naphthalene	0.023 (0.002)		10	07/13/12 16:49	CVG0073	CG21102
Phenanthrene	0.003 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102
Pyrene	0.0004 (0.0002)		1	07/12/12 17:51	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	50 %		30-130
Surrogate: 2-Fluorobiphenyl	56 %		30-130
Surrogate: Nitrobenzene-d5	64 %		30-130
Surrogate: p-Terphenyl-d14	68 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334S
Date Sampled: 07/10/12 13:15
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-05
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0564 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334D
Date Sampled: 07/10/12 14:25
Percent Solids: N/A
Initial Volume: 970
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	0.45 (0.21)		1	07/13/12 23:17	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>115 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 07/10/12 14:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 15:52	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/15/12 15:52	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 15:52	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 15:52	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 15:52	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 15:52	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 15:52	CVG0103	CG21503
Benzene	0.0013 (0.0010)		1	07/15/12 15:52	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 07/10/12 14:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 15:52	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Chlorobenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
cis-1,2-Dichloroethene	0.0012 (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 15:52	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Ethylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 15:52	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Isopropylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
Naphthalene	0.0213 (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
n-Propylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Styrene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 07/10/12 14:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 15:52	CVG0103	CG21503
Toluene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 15:52	CVG0103	CG21503
Trichloroethene	0.0023 (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 15:52	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Xylene O	ND (0.0010)		1	07/15/12 15:52	CVG0103	CG21503
Xylene P,M	ND (0.0020)		1	07/15/12 15:52	CVG0103	CG21503
Xylenes (Total)	ND (0.0030)		1	07/15/12 15:52		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 15:52		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	90 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 07/10/12 14:25

Percent Solids: N/A

Initial Volume: 950

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.002 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Acenaphthene	0.0008 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Acenaphthylene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Anthracene	0.0005 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Chrysene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Fluoranthene	0.0007 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Fluorene	0.001 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Naphthalene	0.008 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Phenanthrene	0.003 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102
Pyrene	0.0005 (0.0002)		1	07/12/12 18:38	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	38 %		30-130
Surrogate: 2-Fluorobiphenyl	43 %		30-130
Surrogate: Nitrobenzene-d5	50 %		30-130
Surrogate: p-Terphenyl-d14	63 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334D
Date Sampled: 07/10/12 14:25
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-06
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0326 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318D
Date Sampled: 07/10/12 14:50
Percent Solids: N/A
Initial Volume: 965
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (0.21)		1	07/14/12 0:00	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>112 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-07

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>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/17/12 13:47	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/17/12 13:47	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
1,4-Dioxane - Screen	ND (0.500)		1	07/17/12 13:47	CVG0122	CG21716
1-Chlorohexane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
2-Butanone	ND (0.0100)		1	07/17/12 13:47	CVG0122	CG21716
2-Chlorotoluene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
2-Hexanone	ND (0.0100)		1	07/17/12 13:47	CVG0122	CG21716
4-Chlorotoluene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.0250)		1	07/17/12 13:47	CVG0122	CG21716
Acetone	ND (0.0100)		1	07/17/12 13:47	CVG0122	CG21716
Benzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-07

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>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
Bromochloromethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Bromodichloromethane	ND (0.0006)		1	07/17/12 13:47	CVG0122	CG21716
Bromoform	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Bromomethane	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
Carbon Disulfide	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Chlorobenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Chloroethane	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
Chloroform	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Chloromethane	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 13:47	CVG0122	CG21716
Dibromochloromethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Dibromomethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
Diethyl Ether	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Di-isopropyl ether	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Ethylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0006)		1	07/17/12 13:47	CVG0122	CG21716
Hexachloroethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Isopropylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Methylene Chloride	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
Naphthalene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
n-Butylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
n-Propylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
sec-Butylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Styrene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
tert-Butylbenzene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-07

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>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Tetrachloroethene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Tetrahydrofuran	ND (0.0050)		1	07/17/12 13:47	CVG0122	CG21716
Toluene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 13:47	CVG0122	CG21716
Trichloroethene	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Vinyl Acetate	ND (0.0050)		1	07/17/12 13:47	CVG0122	CG21716
Vinyl Chloride	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Xylene O	ND (0.0010)		1	07/17/12 13:47	CVG0122	CG21716
Xylene P,M	ND (0.0020)		1	07/17/12 13:47	CVG0122	CG21716
Xylenes (Total)	ND (0.0030)		1	07/17/12 13:47		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/17/12 13:47		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 07/10/12 14:50

Percent Solids: N/A

Initial Volume: 900

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.0008 (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Acenaphthene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Acenaphthylene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Anthracene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Chrysene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Fluoranthene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Fluorene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Naphthalene	0.010 (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Phenanthrene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102
Pyrene	ND (0.0002)		1	07/12/12 19:25	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	40 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	45 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	50 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	60 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318D
Date Sampled: 07/10/12 14:50
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-07
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318S
Date Sampled: 07/10/12 12:40
Percent Solids: N/A
Initial Volume: 985
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: TAJ
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	4.13 (0.20)		1	07/13/12 11:14	CVG0082	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>105 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 07/10/12 12:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0250)		50	07/15/12 16:49	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,1-Dichloropropene	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2,4-Trimethylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.250)		50	07/15/12 16:49	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
1,4-Dioxane - Screen	ND (25.0)		50	07/15/12 16:49	CVG0103	CG21503
1-Chlorohexane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
2-Butanone	ND (0.500)		50	07/15/12 16:49	CVG0103	CG21503
2-Chlorotoluene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
2-Hexanone	ND (0.500)		50	07/15/12 16:49	CVG0103	CG21503
4-Chlorotoluene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (1.25)		50	07/15/12 16:49	CVG0103	CG21503
Acetone	ND (0.500)		50	07/15/12 16:49	CVG0103	CG21503
Benzene	0.0630 (0.0500)		50	07/15/12 16:49	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 07/10/12 12:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
Bromochloromethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Bromodichloromethane	ND (0.0300)		50	07/15/12 16:49	CVG0103	CG21503
Bromoform	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Bromomethane	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
Carbon Disulfide	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Chlorobenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Chloroethane	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
Chloroform	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Chloromethane	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0200)		50	07/15/12 16:49	CVG0103	CG21503
Dibromochloromethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Dibromomethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
Diethyl Ether	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Di-isopropyl ether	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Ethylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0300)		50	07/15/12 16:49	CVG0103	CG21503
Hexachloroethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Isopropylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Methylene Chloride	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
Naphthalene	1.22 (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
n-Butylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
n-Propylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
sec-Butylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Styrene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
tert-Butylbenzene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 07/10/12 12:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Tetrachloroethene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Tetrahydrofuran	ND (0.250)		50	07/15/12 16:49	CVG0103	CG21503
Toluene	0.0575 (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0200)		50	07/15/12 16:49	CVG0103	CG21503
Trichloroethene	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Vinyl Acetate	ND (0.250)		50	07/15/12 16:49	CVG0103	CG21503
Vinyl Chloride	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Xylene O	ND (0.0500)		50	07/15/12 16:49	CVG0103	CG21503
Xylene P,M	ND (0.100)		50	07/15/12 16:49	CVG0103	CG21503
Xylenes (Total)	ND (0.150)		50	07/15/12 16:49		[CALC]
Trihalomethanes (Total)	ND (0.180)			07/15/12 16:49		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	92 %		70-130
<i>Surrogate: Toluene-d8</i>	99 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 07/10/12 12:40

Percent Solids: N/A

Initial Volume: 950

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.060 (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Acenaphthene	0.009 (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Acenaphthylene	0.024 (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Anthracene	0.007 (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Benzo(a)anthracene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Benzo(a)pyrene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Benzo(b)fluoranthene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Benzo(g,h,i)perylene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Benzo(k)fluoranthene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Chrysene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Dibenzo(a,h)Anthracene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Fluoranthene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Fluorene	0.020 (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Naphthalene	0.753 (0.021)		100	07/16/12 12:20	CVG0089	CG21102
Phenanthrene	0.019 (0.002)		10	07/13/12 17:35	CVG0089	CG21102
Pyrene	ND (0.002)		10	07/13/12 17:35	CVG0089	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	SD	30-130
Surrogate: 2-Fluorobiphenyl	%	SD	30-130
Surrogate: Nitrobenzene-d5	%	SD	30-130
Surrogate: p-Terphenyl-d14	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318S
Date Sampled: 07/10/12 12:40
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-08
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0359 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD071012
Date Sampled: 07/10/12 13:30
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	0.57 (0.20)		1	07/14/12 0:43	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	123 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071012

Date Sampled: 07/10/12 13:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 17:18	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.0015 (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/15/12 17:18	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 17:18	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 17:18	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 17:18	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 17:18	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 17:18	CVG0103	CG21503
Benzene	0.0020 (0.0010)		1	07/15/12 17:18	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071012

Date Sampled: 07/10/12 13:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 17:18	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Chlorobenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 17:18	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Ethylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 17:18	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Isopropylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
Naphthalene	0.0406 (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
n-Propylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Styrene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071012

Date Sampled: 07/10/12 13:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 17:18	CVG0103	CG21503
Toluene	0.0011 (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 17:18	CVG0103	CG21503
Trichloroethene	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 17:18	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Xylene O	0.0011 (0.0010)		1	07/15/12 17:18	CVG0103	CG21503
Xylene P,M	ND (0.0020)		1	07/15/12 17:18	CVG0103	CG21503
Xylenes (Total)	ND (0.0030)		1	07/15/12 17:18		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 17:18		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	103 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	90 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071012

Date Sampled: 07/10/12 13:30

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/11/12 14:40

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2-Methylnaphthalene	0.003 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Acenaphthene	0.001 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Acenaphthylene	0.0003 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Anthracene	0.0005 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Chrysene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Fluoranthene	0.0006 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Fluorene	0.001 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Naphthalene	0.032 (0.002)		10	07/13/12 18:20	CVG0073	CG21102
Phenanthrene	0.003 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102
Pyrene	0.0004 (0.0002)		1	07/12/12 20:58	CVG0073	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	43 %		30-130
Surrogate: 2-Fluorobiphenyl	50 %		30-130
Surrogate: Nitrobenzene-d5	56 %		30-130
Surrogate: p-Terphenyl-d14	76 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD071012
Date Sampled: 07/10/12 13:30
Percent Solids: N/A

ESS Laboratory Work Order: 1207099
ESS Laboratory Sample ID: 1207099-09
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206
Total Cyanide (LL)	0.0747 (0.0050)	9014		1	EEM	07/12/12 12:15	mg/L	CG21206



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TBLK071012

Date Sampled: 07/10/12 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-10

Sample Matrix: Aqueous

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,1,1-Trichloroethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/13/12 19:04	CVG0101	CG21501
1,1,2-Trichloroethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,1-Dichloroethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,1-Dichloroethene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,1-Dichloropropene	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2,3-Trichloropropane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/13/12 19:04	CVG0101	CG21501
1,2-Dibromoethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2-Dichlorobenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2-Dichloroethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,2-Dichloropropane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,3-Dichlorobenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,3-Dichloropropane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,4-Dichlorobenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
1,4-Dioxane - Screen	ND (0.500)		1	07/13/12 19:04	CVG0101	CG21501
1-Chlorohexane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
2,2-Dichloropropane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
2-Butanone	ND (0.0100)		1	07/13/12 19:04	CVG0101	CG21501
2-Chlorotoluene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
2-Hexanone	ND (0.0100)		1	07/13/12 19:04	CVG0101	CG21501
4-Chlorotoluene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
4-Isopropyltoluene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
4-Methyl-2-Pentanone	ND (0.0250)		1	07/13/12 19:04	CVG0101	CG21501
Acetone	ND (0.0100)		1	07/13/12 19:04	CVG0101	CG21501
Benzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TBLK071012

Date Sampled: 07/10/12 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-10

Sample Matrix: Aqueous

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromobenzene	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
Bromochloromethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Bromodichloromethane	ND (0.0006)		1	07/13/12 19:04	CVG0101	CG21501
Bromoform	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Bromomethane	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
Carbon Disulfide	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Carbon Tetrachloride	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Chlorobenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Chloroethane	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
Chloroform	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Chloromethane	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
cis-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
cis-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 19:04	CVG0101	CG21501
Dibromochloromethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Dibromomethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Dichlorodifluoromethane	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
Diethyl Ether	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Di-isopropyl ether	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Ethylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Hexachlorobutadiene	ND (0.0006)		1	07/13/12 19:04	CVG0101	CG21501
Hexachloroethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Isopropylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Methyl tert-Butyl Ether	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Methylene Chloride	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501
Naphthalene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
n-Butylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
n-Propylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
sec-Butylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Styrene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
tert-Butylbenzene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TBLK071012

Date Sampled: 07/10/12 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207099

ESS Laboratory Sample ID: 1207099-10

Sample Matrix: Aqueous

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tertiary-amyl methyl ether	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Tetrachloroethene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Tetrahydrofuran	ND (0.0050)		1	07/13/12 19:04	CVG0101	CG21501
Toluene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
trans-1,2-Dichloroethene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
trans-1,3-Dichloropropene	ND (0.0004)		1	07/13/12 19:04	CVG0101	CG21501
Trichloroethene	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Trichlorofluoromethane	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Vinyl Acetate	ND (0.0050)		1	07/13/12 19:04	CVG0101	CG21501
Vinyl Chloride	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Xylene O	ND (0.0010)		1	07/13/12 19:04	CVG0101	CG21501
Xylene P,M	ND (0.0020)		1	07/13/12 19:04	CVG0101	CG21501

	<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>103 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CG21203 - 3510C

Blank

Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							

<i>Surrogate: O-Terphenyl</i>	<i>0.116</i>		mg/L	<i>0.1000</i>		<i>116</i>	<i>40-140</i>			

LCS

Decane (C10)	0.032	0.005	mg/L	0.05000		64	40-140			
Docosane (C22)	0.045	0.005	mg/L	0.05000		89	40-140			
Dodecane (C12)	0.037	0.005	mg/L	0.05000		74	40-140			
Eicosane (C20)	0.044	0.005	mg/L	0.05000		88	40-140			
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		93	40-140			
Hexadecane (C16)	0.043	0.005	mg/L	0.05000		86	40-140			
Nonadecane (C19)	0.038	0.005	mg/L	0.05000		76	40-140			
Nonane (C9)	0.025	0.005	mg/L	0.05000		49	30-140			
Octacosane (C28)	0.048	0.005	mg/L	0.05000		97	40-140			
Octadecane (C18)	0.044	0.005	mg/L	0.05000		88	40-140			
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		91	40-140			
Tetradecane (C14)	0.041	0.005	mg/L	0.05000		82	40-140			
Triacontane (C30)	0.052	0.005	mg/L	0.05000		103	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>0.105</i>		mg/L	<i>0.1000</i>		<i>105</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	0.029	0.005	mg/L	0.05000		58	40-140	10	25	
Docosane (C22)	0.045	0.005	mg/L	0.05000		90	40-140	0.4	25	
Dodecane (C12)	0.033	0.005	mg/L	0.05000		65	40-140	14	25	
Eicosane (C20)	0.044	0.005	mg/L	0.05000		88	40-140	0.02	25	
Hexacosane (C26)	0.047	0.005	mg/L	0.05000		94	40-140	1	25	
Hexadecane (C16)	0.039	0.005	mg/L	0.05000		78	40-140	10	25	
Nonadecane (C19)	0.038	0.005	mg/L	0.05000		75	40-140	1	25	
Nonane (C9)	0.023	0.005	mg/L	0.05000		45	30-140	9	25	
Octacosane (C28)	0.049	0.005	mg/L	0.05000		98	40-140	1	25	
Octadecane (C18)	0.043	0.005	mg/L	0.05000		86	40-140	3	25	
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		92	40-140	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CG21203 - 3510C

Tetradecane (C14)	0.036	0.005	mg/L	0.05000		73	40-140	12	25	
Triacotane (C30)	0.052	0.005	mg/L	0.05000		104	40-140	1	25	
Surrogate: O-Terphenyl	0.100		mg/L	0.1000		100	40-140			

8260B Volatile Organic Compounds

Batch CG21501 - 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21501 - 5030B

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							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0239		mg/L	0.02500		96	70-130			
Surrogate: 4-Bromofluorobenzene	0.0255		mg/L	0.02500		102	70-130			
Surrogate: Dibromofluoromethane	0.0230		mg/L	0.02500		92	70-130			
Surrogate: Toluene-d8	0.0245		mg/L	0.02500		98	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.05		ug/L	10.00		90	70-130
1,1,1-Trichloroethane	10.7		ug/L	10.00		107	70-130
1,1,2,2-Tetrachloroethane	8.50		ug/L	10.00		85	70-130



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21501 - 50308

1,1,2-Trichloroethane	9.02		ug/L	10.00		90	70-130			
1,1-Dichloroethane	8.90		ug/L	10.00		89	70-130			
1,1-Dichloroethene	10.6		ug/L	10.00		106	70-130			
1,1-Dichloropropene	10.4		ug/L	10.00		104	70-130			
1,2,3-Trichlorobenzene	11.0		ug/L	10.00		110	70-130			
1,2,3-Trichloropropane	8.14		ug/L	10.00		81	70-130			
1,2,4-Trichlorobenzene	11.3		ug/L	10.00		113	70-130			
1,2,4-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,2-Dibromo-3-Chloropropane	7.85		ug/L	10.00		78	70-130			
1,2-Dibromoethane	8.89		ug/L	10.00		89	70-130			
1,2-Dichlorobenzene	8.40		ug/L	10.00		84	70-130			
1,2-Dichloroethane	10.4		ug/L	10.00		104	70-130			
1,2-Dichloropropane	8.77		ug/L	10.00		88	70-130			
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,3-Dichlorobenzene	8.63		ug/L	10.00		86	70-130			
1,3-Dichloropropane	8.97		ug/L	10.00		90	70-130			
1,4-Dichlorobenzene	9.09		ug/L	10.00		91	70-130			
1,4-Dioxane - Screen	258		ug/L	200.0		129	0-332			
1-Chlorohexane	12.0		ug/L	10.00		120	70-130			
2,2-Dichloropropane	10.5		ug/L	10.00		105	70-130			
2-Butanone	51.6		ug/L	50.00		103	70-130			
2-Chlorotoluene	8.54		ug/L	10.00		85	70-130			
2-Hexanone	42.8		ug/L	50.00		86	70-130			
4-Chlorotoluene	8.84		ug/L	10.00		88	70-130			
4-Isopropyltoluene	9.59		ug/L	10.00		96	70-130			
4-Methyl-2-Pentanone	45.9		ug/L	50.00		92	70-130			
Acetone	60.6		ug/L	50.00		121	70-130			
Benzene	8.70		ug/L	10.00		87	70-130			
Bromobenzene	9.22		ug/L	10.00		92	70-130			
Bromochloromethane	9.19		ug/L	10.00		92	70-130			
Bromodichloromethane	10.2		ug/L	10.00		102	70-130			
Bromoform	9.90		ug/L	10.00		99	70-130			
Bromomethane	11.1		ug/L	10.00		111	70-130			
Carbon Disulfide	9.74		ug/L	10.00		97	70-130			
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130			
Chlorobenzene	8.69		ug/L	10.00		87	70-130			
Chloroethane	10.1		ug/L	10.00		101	70-130			
Chloroform	9.14		ug/L	10.00		91	70-130			
Chloromethane	9.32		ug/L	10.00		93	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	9.31		ug/L	10.00		93	70-130			
Dibromochloromethane	9.59		ug/L	10.00		96	70-130			
Dibromomethane	9.16		ug/L	10.00		92	70-130			
Dichlorodifluoromethane	9.15		ug/L	10.00		92	70-130			
Diethyl Ether	9.54		ug/L	10.00		95	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21501 - 5030B

Di-isopropyl ether	9.61		ug/L	10.00		96	70-130			
Ethyl tertiary-butyl ether	9.71		ug/L	10.00		97	70-130			
Ethylbenzene	10.1		ug/L	10.00		101	70-130			
Hexachlorobutadiene	11.6		ug/L	10.00		116	70-130			
Hexachloroethane	10.4		ug/L	10.00		104	70-130			
Isopropylbenzene	9.04		ug/L	10.00		90	70-130			
Methyl tert-Butyl Ether	9.59		ug/L	10.00		96	70-130			
Methylene Chloride	10.3		ug/L	10.00		103	70-130			
Naphthalene	10.8		ug/L	10.00		108	70-130			
n-Butylbenzene	11.1		ug/L	10.00		111	70-130			
n-Propylbenzene	9.99		ug/L	10.00		100	70-130			
sec-Butylbenzene	9.72		ug/L	10.00		97	70-130			
Styrene	9.25		ug/L	10.00		92	70-130			
tert-Butylbenzene	9.91		ug/L	10.00		99	70-130			
Tertiary-amyl methyl ether	9.51		ug/L	10.00		95	70-130			
Tetrachloroethene	9.76		ug/L	10.00		98	70-130			
Tetrahydrofuran	10.8		ug/L	10.00		108	70-130			
Toluene	9.48		ug/L	10.00		95	70-130			
trans-1,2-Dichloroethene	9.82		ug/L	10.00		98	70-130			
trans-1,3-Dichloropropene	9.24		ug/L	10.00		92	70-130			
Trichloroethene	9.87		ug/L	10.00		99	70-130			
Trichlorofluoromethane	11.1		ug/L	10.00		111	70-130			
Vinyl Acetate	10.8		ug/L	10.00		108	70-130			
Vinyl Chloride	10.4		ug/L	10.00		104	70-130			
Xylene O	9.01		ug/L	10.00		90	70-130			
Xylene P,M	18.5		ug/L	20.00		93	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0277		mg/L	0.02500		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0259		mg/L	0.02500		104	70-130			
Surrogate: Dibromofluoromethane	0.0249		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0257		mg/L	0.02500		103	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.95		ug/L	10.00		90	70-130	1	25	
1,1,1-Trichloroethane	10.6		ug/L	10.00		106	70-130	0.9	25	
1,1,2,2-Tetrachloroethane	8.58		ug/L	10.00		86	70-130	0.9	25	
1,1,2-Trichloroethane	8.84		ug/L	10.00		88	70-130	2	25	
1,1-Dichloroethane	9.00		ug/L	10.00		90	70-130	1	25	
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130	2	25	
1,1-Dichloropropene	10.2		ug/L	10.00		102	70-130	2	25	
1,2,3-Trichlorobenzene	9.33		ug/L	10.00		93	70-130	17	25	
1,2,3-Trichloropropane	8.21		ug/L	10.00		82	70-130	0.9	25	
1,2,4-Trichlorobenzene	11.1		ug/L	10.00		111	70-130	2	25	
1,2,4-Trimethylbenzene	9.51		ug/L	10.00		95	70-130	5	25	
1,2-Dibromo-3-Chloropropane	7.48		ug/L	10.00		75	70-130	5	25	
1,2-Dibromoethane	9.10		ug/L	10.00		91	70-130	2	25	
1,2-Dichlorobenzene	8.19		ug/L	10.00		82	70-130	3	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21501 - 5030B

1,2-Dichloroethane	10.5		ug/L	10.00		105	70-130	1	25	
1,2-Dichloropropane	8.61		ug/L	10.00		86	70-130	2	25	
1,3,5-Trimethylbenzene	9.68		ug/L	10.00		97	70-130	4	25	
1,3-Dichlorobenzene	8.29		ug/L	10.00		83	70-130	4	25	
1,3-Dichloropropane	9.03		ug/L	10.00		90	70-130	0.7	25	
1,4-Dichlorobenzene	9.04		ug/L	10.00		90	70-130	0.6	25	
1,4-Dioxane - Screen	222		ug/L	200.0		111	0-332	15	200	
1-Chlorohexane	11.2		ug/L	10.00		112	70-130	7	25	
2,2-Dichloropropane	10.3		ug/L	10.00		103	70-130	2	25	
2-Butanone	50.4		ug/L	50.00		101	70-130	2	25	
2-Chlorotoluene	9.04		ug/L	10.00		90	70-130	6	25	
2-Hexanone	42.6		ug/L	50.00		85	70-130	0.6	25	
4-Chlorotoluene	8.62		ug/L	10.00		86	70-130	3	25	
4-Isopropyltoluene	8.90		ug/L	10.00		89	70-130	7	25	
4-Methyl-2-Pentanone	45.5		ug/L	50.00		91	70-130	0.8	25	
Acetone	58.1		ug/L	50.00		116	70-130	4	25	
Benzene	8.61		ug/L	10.00		86	70-130	1	25	
Bromobenzene	8.82		ug/L	10.00		88	70-130	4	25	
Bromochloromethane	9.26		ug/L	10.00		93	70-130	0.8	25	
Bromodichloromethane	10.4		ug/L	10.00		104	70-130	1	25	
Bromoform	9.86		ug/L	10.00		99	70-130	0.4	25	
Bromomethane	11.0		ug/L	10.00		110	70-130	0.7	25	
Carbon Disulfide	9.66		ug/L	10.00		97	70-130	0.8	25	
Carbon Tetrachloride	10.3		ug/L	10.00		103	70-130	3	25	
Chlorobenzene	8.52		ug/L	10.00		85	70-130	2	25	
Chloroethane	10.1		ug/L	10.00		101	70-130	0.1	25	
Chloroform	9.02		ug/L	10.00		90	70-130	1	25	
Chloromethane	8.92		ug/L	10.00		89	70-130	4	25	
cis-1,2-Dichloroethene	9.98		ug/L	10.00		100	70-130	2	25	
cis-1,3-Dichloropropene	9.33		ug/L	10.00		93	70-130	0.2	25	
Dibromochloromethane	9.62		ug/L	10.00		96	70-130	0.3	25	
Dibromomethane	9.07		ug/L	10.00		91	70-130	1	25	
Dichlorodifluoromethane	8.91		ug/L	10.00		89	70-130	3	25	
Diethyl Ether	9.68		ug/L	10.00		97	70-130	1	25	
Di-isopropyl ether	9.36		ug/L	10.00		94	70-130	3	25	
Ethyl tertiary-butyl ether	9.61		ug/L	10.00		96	70-130	1	25	
Ethylbenzene	9.80		ug/L	10.00		98	70-130	3	25	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	12	25	
Hexachloroethane	9.92		ug/L	10.00		99	70-130	5	25	
Isopropylbenzene	8.53		ug/L	10.00		85	70-130	6	25	
Methyl tert-Butyl Ether	9.68		ug/L	10.00		97	70-130	0.9	25	
Methylene Chloride	10.4		ug/L	10.00		104	70-130	2	25	
Naphthalene	10.3		ug/L	10.00		103	70-130	5	25	
n-Butylbenzene	10.3		ug/L	10.00		103	70-130	7	25	
n-Propylbenzene	8.71		ug/L	10.00		87	70-130	14	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21501 - 5030B

sec-Butylbenzene	9.10		ug/L	10.00		91	70-130	7	25	
Styrene	9.03		ug/L	10.00		90	70-130	2	25	
tert-Butylbenzene	9.33		ug/L	10.00		93	70-130	6	25	
Tertiary-amyl methyl ether	9.44		ug/L	10.00		94	70-130	0.7	25	
Tetrachloroethene	9.63		ug/L	10.00		96	70-130	1	25	
Tetrahydrofuran	10.2		ug/L	10.00		102	70-130	6	25	
Toluene	9.18		ug/L	10.00		92	70-130	3	25	
trans-1,2-Dichloroethene	9.84		ug/L	10.00		98	70-130	0.2	25	
trans-1,3-Dichloropropene	9.23		ug/L	10.00		92	70-130	0.1	25	
Trichloroethene	9.68		ug/L	10.00		97	70-130	2	25	
Trichlorofluoromethane	10.6		ug/L	10.00		106	70-130	5	25	
Vinyl Acetate	11.1		ug/L	10.00		111	70-130	2	25	
Vinyl Chloride	10.3		ug/L	10.00		103	70-130	0.7	25	
Xylene O	8.88		ug/L	10.00		89	70-130	1	25	
Xylene P,M	18.2		ug/L	20.00		91	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	0.0279		mg/L	0.02500		112	70-130			
Surrogate: 4-Bromofluorobenzene	0.0261		mg/L	0.02500		104	70-130			
Surrogate: Dibromofluoromethane	0.0251		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0258		mg/L	0.02500		103	70-130			

Batch CG21503 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

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
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





CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

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							
Surrogate: 1,2-Dichloroethane-d4	0.0245		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0257		mg/L	0.02500		103	70-130			
Surrogate: Dibromofluoromethane	0.0228		mg/L	0.02500		91	70-130			
Surrogate: Toluene-d8	0.0244		mg/L	0.02500		98	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.43		ug/L	10.00		94	70-130			
1,1,1-Trichloroethane	11.1		ug/L	10.00		111	70-130			
1,1,2,2-Tetrachloroethane	8.69		ug/L	10.00		87	70-130			
1,1,2-Trichloroethane	9.17		ug/L	10.00		92	70-130			
1,1-Dichloroethane	9.01		ug/L	10.00		90	70-130			
1,1-Dichloroethene	10.5		ug/L	10.00		105	70-130			
1,1-Dichloropropene	9.96		ug/L	10.00		100	70-130			
1,2,3-Trichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,2,3-Trichloropropane	8.43		ug/L	10.00		84	70-130			
1,2,4-Trichlorobenzene	11.8		ug/L	10.00		118	70-130			
1,2,4-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dibromo-3-Chloropropane	8.79		ug/L	10.00		88	70-130			
1,2-Dibromoethane	9.44		ug/L	10.00		94	70-130			
1,2-Dichlorobenzene	8.49		ug/L	10.00		85	70-130			
1,2-Dichloroethane	11.1		ug/L	10.00		111	70-130			
1,2-Dichloropropane	8.32		ug/L	10.00		83	70-130			
1,3,5-Trimethylbenzene	10.4		ug/L	10.00		104	70-130			
1,3-Dichlorobenzene	8.80		ug/L	10.00		88	70-130			
1,3-Dichloropropane	9.28		ug/L	10.00		93	70-130			
1,4-Dichlorobenzene	9.29		ug/L	10.00		93	70-130			
1,4-Dioxane - Screen	349		ug/L	200.0		174	0-332			
1-Chlorohexane	11.7		ug/L	10.00		117	70-130			
2,2-Dichloropropane	10.7		ug/L	10.00		107	70-130			
2-Butanone	51.6		ug/L	50.00		103	70-130			
2-Chlorotoluene	9.26		ug/L	10.00		93	70-130			
2-Hexanone	44.9		ug/L	50.00		90	70-130			
4-Chlorotoluene	8.99		ug/L	10.00		90	70-130			
4-Isopropyltoluene	9.74		ug/L	10.00		97	70-130			
4-Methyl-2-Pentanone	45.7		ug/L	50.00		91	70-130			
Acetone	52.1		ug/L	50.00		104	70-130			
Benzene	8.41		ug/L	10.00		84	70-130			
Bromobenzene	9.07		ug/L	10.00		91	70-130			
Bromochloromethane	9.18		ug/L	10.00		92	70-130			
Bromodichloromethane	10.5		ug/L	10.00		105	70-130			
Bromoform	10.5		ug/L	10.00		105	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 50308

Bromomethane	9.53		ug/L	10.00		95	70-130			
Carbon Disulfide	8.81		ug/L	10.00		88	70-130			
Carbon Tetrachloride	11.3		ug/L	10.00		113	70-130			
Chlorobenzene	8.80		ug/L	10.00		88	70-130			
Chloroethane	9.93		ug/L	10.00		99	70-130			
Chloroform	9.27		ug/L	10.00		93	70-130			
Chloromethane	8.33		ug/L	10.00		83	70-130			
cis-1,2-Dichloroethene	9.93		ug/L	10.00		99	70-130			
cis-1,3-Dichloropropene	9.00		ug/L	10.00		90	70-130			
Dibromochloromethane	10.3		ug/L	10.00		103	70-130			
Dibromomethane	9.30		ug/L	10.00		93	70-130			
Dichlorodifluoromethane	9.56		ug/L	10.00		96	70-130			
Diethyl Ether	9.73		ug/L	10.00		97	70-130			
Di-isopropyl ether	9.11		ug/L	10.00		91	70-130			
Ethyl tertiary-butyl ether	9.86		ug/L	10.00		99	70-130			
Ethylbenzene	10.1		ug/L	10.00		101	70-130			
Hexachlorobutadiene	12.0		ug/L	10.00		120	70-130			
Hexachloroethane	10.4		ug/L	10.00		104	70-130			
Isopropylbenzene	9.10		ug/L	10.00		91	70-130			
Methyl tert-Butyl Ether	10.1		ug/L	10.00		101	70-130			
Methylene Chloride	10.2		ug/L	10.00		102	70-130			
Naphthalene	12.0		ug/L	10.00		120	70-130			
n-Butylbenzene	11.2		ug/L	10.00		112	70-130			
n-Propylbenzene	9.20		ug/L	10.00		92	70-130			
sec-Butylbenzene	9.91		ug/L	10.00		99	70-130			
Styrene	9.35		ug/L	10.00		94	70-130			
tert-Butylbenzene	9.82		ug/L	10.00		98	70-130			
Tertiary-amyl methyl ether	9.62		ug/L	10.00		96	70-130			
Tetrachloroethene	10.1		ug/L	10.00		101	70-130			
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130			
Toluene	9.14		ug/L	10.00		91	70-130			
trans-1,2-Dichloroethene	9.96		ug/L	10.00		100	70-130			
trans-1,3-Dichloropropene	9.01		ug/L	10.00		90	70-130			
Trichloroethene	9.98		ug/L	10.00		100	70-130			
Trichlorofluoromethane	11.5		ug/L	10.00		115	70-130			
Vinyl Acetate	11.4		ug/L	10.00		114	70-130			
Vinyl Chloride	10.0		ug/L	10.00		100	70-130			
Xylene O	9.21		ug/L	10.00		92	70-130			
Xylene P,M	19.3		ug/L	20.00		97	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0292		mg/L	0.02500		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0264		mg/L	0.02500		106	70-130			
Surrogate: Dibromofluoromethane	0.0251		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.88		ug/L	10.00		89	70-130	6	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

1,1,1-Trichloroethane	11.0		ug/L	10.00		110	70-130	2	25	
1,1,2,2-Tetrachloroethane	8.52		ug/L	10.00		85	70-130	2	25	
1,1,2-Trichloroethane	8.84		ug/L	10.00		88	70-130	4	25	
1,1-Dichloroethane	8.85		ug/L	10.00		88	70-130	2	25	
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130	2	25	
1,1-Dichloropropene	9.28		ug/L	10.00		93	70-130	7	25	
1,2,3-Trichlorobenzene	9.75		ug/L	10.00		98	70-130	11	25	
1,2,3-Trichloropropane	8.38		ug/L	10.00		84	70-130	0.6	25	
1,2,4-Trichlorobenzene	10.9		ug/L	10.00		109	70-130	8	25	
1,2,4-Trimethylbenzene	9.91		ug/L	10.00		99	70-130	2	25	
1,2-Dibromo-3-Chloropropane	7.98		ug/L	10.00		80	70-130	10	25	
1,2-Dibromoethane	9.14		ug/L	10.00		91	70-130	3	25	
1,2-Dichlorobenzene	8.34		ug/L	10.00		83	70-130	2	25	
1,2-Dichloroethane	11.2		ug/L	10.00		112	70-130	0.9	25	
1,2-Dichloropropane	8.52		ug/L	10.00		85	70-130	2	25	
1,3,5-Trimethylbenzene	9.99		ug/L	10.00		100	70-130	4	25	
1,3-Dichlorobenzene	8.55		ug/L	10.00		86	70-130	3	25	
1,3-Dichloropropane	8.94		ug/L	10.00		89	70-130	4	25	
1,4-Dichlorobenzene	8.84		ug/L	10.00		88	70-130	5	25	
1,4-Dioxane - Screen	218		ug/L	200.0		109	0-332	46	200	
1-Chlorohexane	11.0		ug/L	10.00		110	70-130	6	25	
2,2-Dichloropropane	10.6		ug/L	10.00		106	70-130	0.6	25	
2-Butanone	49.4		ug/L	50.00		99	70-130	4	25	
2-Chlorotoluene	9.04		ug/L	10.00		90	70-130	2	25	
2-Hexanone	42.0		ug/L	50.00		84	70-130	6	25	
4-Chlorotoluene	8.73		ug/L	10.00		87	70-130	3	25	
4-Isopropyltoluene	9.22		ug/L	10.00		92	70-130	5	25	
4-Methyl-2-Pentanone	45.3		ug/L	50.00		91	70-130	0.8	25	
Acetone	50.4		ug/L	50.00		101	70-130	3	25	
Benzene	8.53		ug/L	10.00		85	70-130	1	25	
Bromobenzene	9.03		ug/L	10.00		90	70-130	0.4	25	
Bromochloromethane	9.35		ug/L	10.00		94	70-130	2	25	
Bromodichloromethane	10.3		ug/L	10.00		103	70-130	1	25	
Bromoform	10.2		ug/L	10.00		102	70-130	3	25	
Bromomethane	9.15		ug/L	10.00		92	70-130	4	25	
Carbon Disulfide	8.89		ug/L	10.00		89	70-130	0.9	25	
Carbon Tetrachloride	11.1		ug/L	10.00		111	70-130	2	25	
Chlorobenzene	8.53		ug/L	10.00		85	70-130	3	25	
Chloroethane	9.85		ug/L	10.00		98	70-130	0.8	25	
Chloroform	9.10		ug/L	10.00		91	70-130	2	25	
Chloromethane	8.04		ug/L	10.00		80	70-130	4	25	
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130	0.7	25	
cis-1,3-Dichloropropene	9.05		ug/L	10.00		90	70-130	0.6	25	
Dibromochloromethane	9.90		ug/L	10.00		99	70-130	4	25	
Dibromomethane	9.13		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: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

Dichlorodifluoromethane	9.33		ug/L	10.00		93	70-130	2	25	
Diethyl Ether	9.26		ug/L	10.00		93	70-130	5	25	
Di-isopropyl ether	9.18		ug/L	10.00		92	70-130	0.8	25	
Ethyl tertiary-butyl ether	9.57		ug/L	10.00		96	70-130	3	25	
Ethylbenzene	9.82		ug/L	10.00		98	70-130	3	25	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	14	25	
Hexachloroethane	10.1		ug/L	10.00		101	70-130	3	25	
Isopropylbenzene	8.90		ug/L	10.00		89	70-130	2	25	
Methyl tert-Butyl Ether	9.88		ug/L	10.00		99	70-130	2	25	
Methylene Chloride	10.0		ug/L	10.00		100	70-130	2	25	
Naphthalene	10.6		ug/L	10.00		106	70-130	13	25	
n-Butylbenzene	10.4		ug/L	10.00		104	70-130	8	25	
n-Propylbenzene	9.02		ug/L	10.00		90	70-130	2	25	
sec-Butylbenzene	9.43		ug/L	10.00		94	70-130	5	25	
Styrene	9.04		ug/L	10.00		90	70-130	3	25	
tert-Butylbenzene	9.53		ug/L	10.00		95	70-130	3	25	
Tertiary-amyl methyl ether	9.49		ug/L	10.00		95	70-130	1	25	
Tetrachloroethene	9.50		ug/L	10.00		95	70-130	7	25	
Tetrahydrofuran	10.2		ug/L	10.00		102	70-130	1	25	
Toluene	9.09		ug/L	10.00		91	70-130	0.5	25	
trans-1,2-Dichloroethene	9.88		ug/L	10.00		99	70-130	0.8	25	
trans-1,3-Dichloropropene	8.96		ug/L	10.00		90	70-130	0.6	25	
Trichloroethene	9.65		ug/L	10.00		96	70-130	3	25	
Trichlorofluoromethane	11.4		ug/L	10.00		114	70-130	0.7	25	
Vinyl Acetate	10.6		ug/L	10.00		106	70-130	8	25	
Vinyl Chloride	9.88		ug/L	10.00		99	70-130	2	25	
Xylene O	8.81		ug/L	10.00		88	70-130	4	25	
Xylene P,M	18.7		ug/L	20.00		94	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	0.0292		mg/L	0.02500		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0262		mg/L	0.02500		105	70-130			
Surrogate: Dibromofluoromethane	0.0254		mg/L	0.02500		102	70-130			
Surrogate: Toluene-d8	0.0257		mg/L	0.02500		103	70-130			

Batch CG21716 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

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
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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

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							
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	0.0232		mg/L	0.02500		93	70-130			
Surrogate: Toluene-d8	0.0243		mg/L	0.02500		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.83		ug/L	10.00		88	70-130			
1,1,1-Trichloroethane	11.0		ug/L	10.00		110	70-130			
1,1,2,2-Tetrachloroethane	8.40		ug/L	10.00		84	70-130			
1,1,2-Trichloroethane	8.70		ug/L	10.00		87	70-130			
1,1-Dichloroethane	8.71		ug/L	10.00		87	70-130			
1,1-Dichloroethene	10.0		ug/L	10.00		100	70-130			
1,1-Dichloropropene	9.08		ug/L	10.00		91	70-130			
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichloropropane	8.17		ug/L	10.00		82	70-130			
1,2,4-Trichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,2,4-Trimethylbenzene	9.67		ug/L	10.00		97	70-130			
1,2-Dibromo-3-Chloropropane	8.66		ug/L	10.00		87	70-130			
1,2-Dibromoethane	8.97		ug/L	10.00		90	70-130			
1,2-Dichlorobenzene	8.48		ug/L	10.00		85	70-130			
1,2-Dichloroethane	11.1		ug/L	10.00		111	70-130			
1,2-Dichloropropane	8.21		ug/L	10.00		82	70-130			
1,3,5-Trimethylbenzene	9.90		ug/L	10.00		99	70-130			
1,3-Dichlorobenzene	8.18		ug/L	10.00		82	70-130			
1,3-Dichloropropane	8.69		ug/L	10.00		87	70-130			
1,4-Dichlorobenzene	8.87		ug/L	10.00		89	70-130			
1,4-Dioxane - Screen	304		ug/L	200.0		152	0-332			
1-Chlorohexane	11.2		ug/L	10.00		112	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

2,2-Dichloropropane	11.0		ug/L	10.00		110	70-130			
2-Butanone	51.1		ug/L	50.00		102	70-130			
2-Chlorotoluene	8.22		ug/L	10.00		82	70-130			
2-Hexanone	42.5		ug/L	50.00		85	70-130			
4-Chlorotoluene	8.96		ug/L	10.00		90	70-130			
4-Isopropyltoluene	9.29		ug/L	10.00		93	70-130			
4-Methyl-2-Pentanone	43.3		ug/L	50.00		87	70-130			
Acetone	56.3		ug/L	50.00		113	70-130			
Benzene	8.20		ug/L	10.00		82	70-130			
Bromobenzene	8.92		ug/L	10.00		89	70-130			
Bromochloromethane	8.92		ug/L	10.00		89	70-130			
Bromodichloromethane	10.2		ug/L	10.00		102	70-130			
Bromoform	10.1		ug/L	10.00		101	70-130			
Bromomethane	10.4		ug/L	10.00		104	70-130			
Carbon Disulfide	8.90		ug/L	10.00		89	70-130			
Carbon Tetrachloride	10.9		ug/L	10.00		109	70-130			
Chlorobenzene	8.54		ug/L	10.00		85	70-130			
Chloroethane	9.99		ug/L	10.00		100	70-130			
Chloroform	9.09		ug/L	10.00		91	70-130			
Chloromethane	8.09		ug/L	10.00		81	70-130			
cis-1,2-Dichloroethene	9.66		ug/L	10.00		97	70-130			
cis-1,3-Dichloropropene	8.87		ug/L	10.00		89	70-130			
Dibromochloromethane	9.60		ug/L	10.00		96	70-130			
Dibromomethane	8.84		ug/L	10.00		88	70-130			
Dichlorodifluoromethane	9.24		ug/L	10.00		92	70-130			
Diethyl Ether	9.48		ug/L	10.00		95	70-130			
Di-isopropyl ether	8.87		ug/L	10.00		89	70-130			
Ethyl tertiary-butyl ether	9.53		ug/L	10.00		95	70-130			
Ethylbenzene	9.63		ug/L	10.00		96	70-130			
Hexachlorobutadiene	11.2		ug/L	10.00		112	70-130			
Hexachloroethane	10.2		ug/L	10.00		102	70-130			
Isopropylbenzene	8.84		ug/L	10.00		88	70-130			
Methyl tert-Butyl Ether	9.66		ug/L	10.00		97	70-130			
Methylene Chloride	9.89		ug/L	10.00		99	70-130			
Naphthalene	11.4		ug/L	10.00		114	70-130			
n-Butylbenzene	10.4		ug/L	10.00		104	70-130			
n-Propylbenzene	9.45		ug/L	10.00		94	70-130			
sec-Butylbenzene	9.38		ug/L	10.00		94	70-130			
Styrene	8.83		ug/L	10.00		88	70-130			
tert-Butylbenzene	9.36		ug/L	10.00		94	70-130			
Tertiary-amyl methyl ether	9.16		ug/L	10.00		92	70-130			
Tetrachloroethene	9.44		ug/L	10.00		94	70-130			
Tetrahydrofuran	9.35		ug/L	10.00		94	70-130			
Toluene	8.98		ug/L	10.00		90	70-130			
trans-1,2-Dichloroethene	9.71		ug/L	10.00		97	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

trans-1,3-Dichloropropene	9.13		ug/L	10.00		91	70-130			
Trichloroethene	9.52		ug/L	10.00		95	70-130			
Trichlorofluoromethane	11.2		ug/L	10.00		112	70-130			
Vinyl Acetate	10.4		ug/L	10.00		104	70-130			
Vinyl Chloride	9.93		ug/L	10.00		99	70-130			
Xylene O	8.68		ug/L	10.00		87	70-130			
Xylene P,M	18.2		ug/L	20.00		91	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0301		mg/L	0.02500		120	70-130			
Surrogate: 4-Bromofluorobenzene	0.0261		mg/L	0.02500		105	70-130			
Surrogate: Dibromofluoromethane	0.0254		mg/L	0.02500		102	70-130			
Surrogate: Toluene-d8	0.0259		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.86		ug/L	10.00		89	70-130	0.3	25	
1,1,1-Trichloroethane	11.1		ug/L	10.00		111	70-130	0.8	25	
1,1,2,2-Tetrachloroethane	8.07		ug/L	10.00		81	70-130	4	25	
1,1,2-Trichloroethane	8.53		ug/L	10.00		85	70-130	2	25	
1,1-Dichloroethane	8.50		ug/L	10.00		85	70-130	2	25	
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130	0.3	25	
1,1-Dichloropropene	9.96		ug/L	10.00		100	70-130	9	25	
1,2,3-Trichlorobenzene	9.60		ug/L	10.00		96	70-130	6	25	
1,2,3-Trichloropropane	8.26		ug/L	10.00		83	70-130	1	25	
1,2,4-Trichlorobenzene	10.8		ug/L	10.00		108	70-130	4	25	
1,2,4-Trimethylbenzene	9.30		ug/L	10.00		93	70-130	4	25	
1,2-Dibromo-3-Chloropropane	8.69		ug/L	10.00		87	70-130	0.3	25	
1,2-Dibromoethane	8.89		ug/L	10.00		89	70-130	0.9	25	
1,2-Dichlorobenzene	7.88		ug/L	10.00		79	70-130	7	25	
1,2-Dichloroethane	11.0		ug/L	10.00		110	70-130	1	25	
1,2-Dichloropropane	8.02		ug/L	10.00		80	70-130	2	25	
1,3,5-Trimethylbenzene	9.55		ug/L	10.00		96	70-130	4	25	
1,3-Dichlorobenzene	8.03		ug/L	10.00		80	70-130	2	25	
1,3-Dichloropropane	8.65		ug/L	10.00		86	70-130	0.5	25	
1,4-Dichlorobenzene	8.67		ug/L	10.00		87	70-130	2	25	
1,4-Dioxane - Screen	215		ug/L	200.0		108	0-332	34	200	
1-Chlorohexane	11.1		ug/L	10.00		111	70-130	1	25	
2,2-Dichloropropane	10.8		ug/L	10.00		108	70-130	2	25	
2-Butanone	48.3		ug/L	50.00		97	70-130	6	25	
2-Chlorotoluene	8.02		ug/L	10.00		80	70-130	2	25	
2-Hexanone	42.2		ug/L	50.00		84	70-130	0.9	25	
4-Chlorotoluene	8.70		ug/L	10.00		87	70-130	3	25	
4-Isopropyltoluene	8.99		ug/L	10.00		90	70-130	3	25	
4-Methyl-2-Pentanone	43.0		ug/L	50.00		86	70-130	0.7	25	
Acetone	51.2		ug/L	50.00		102	70-130	10	25	
Benzene	8.23		ug/L	10.00		82	70-130	0.4	25	
Bromobenzene	8.48		ug/L	10.00		85	70-130	5	25	
Bromochloromethane	8.86		ug/L	10.00		89	70-130	0.7	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

Bromodichloromethane	10.2		ug/L	10.00		102	70-130	0	25	
Bromoform	10.0		ug/L	10.00		100	70-130	0.7	25	
Bromomethane	10.7		ug/L	10.00		107	70-130	3	25	
Carbon Disulfide	8.80		ug/L	10.00		88	70-130	1	25	
Carbon Tetrachloride	11.4		ug/L	10.00		114	70-130	4	25	
Chlorobenzene	8.41		ug/L	10.00		84	70-130	2	25	
Chloroethane	9.79		ug/L	10.00		98	70-130	2	25	
Chloroform	9.17		ug/L	10.00		92	70-130	0.9	25	
Chloromethane	8.03		ug/L	10.00		80	70-130	0.7	25	
cis-1,2-Dichloroethene	9.56		ug/L	10.00		96	70-130	1	25	
cis-1,3-Dichloropropene	8.87		ug/L	10.00		89	70-130	0	25	
Dibromochloromethane	9.62		ug/L	10.00		96	70-130	0.2	25	
Dibromomethane	8.82		ug/L	10.00		88	70-130	0.2	25	
Dichlorodifluoromethane	9.00		ug/L	10.00		90	70-130	3	25	
Diethyl Ether	9.30		ug/L	10.00		93	70-130	2	25	
Di-isopropyl ether	8.74		ug/L	10.00		87	70-130	1	25	
Ethyl tertiary-butyl ether	9.58		ug/L	10.00		96	70-130	0.5	25	
Ethylbenzene	9.70		ug/L	10.00		97	70-130	0.7	25	
Hexachlorobutadiene	10.2		ug/L	10.00		102	70-130	10	25	
Hexachloroethane	9.62		ug/L	10.00		96	70-130	6	25	
Isopropylbenzene	8.53		ug/L	10.00		85	70-130	4	25	
Methyl tert-Butyl Ether	9.47		ug/L	10.00		95	70-130	2	25	
Methylene Chloride	9.55		ug/L	10.00		96	70-130	3	25	
Naphthalene	9.39		ug/L	10.00		94	70-130	19	25	
n-Butylbenzene	10.2		ug/L	10.00		102	70-130	3	25	
n-Propylbenzene	9.29		ug/L	10.00		93	70-130	2	25	
sec-Butylbenzene	8.86		ug/L	10.00		89	70-130	6	25	
Styrene	8.72		ug/L	10.00		87	70-130	1	25	
tert-Butylbenzene	9.13		ug/L	10.00		91	70-130	2	25	
Tertiary-amyl methyl ether	8.98		ug/L	10.00		90	70-130	2	25	
Tetrachloroethene	9.37		ug/L	10.00		94	70-130	0.7	25	
Tetrahydrofuran	10.1		ug/L	10.00		101	70-130	7	25	
Toluene	8.84		ug/L	10.00		88	70-130	2	25	
trans-1,2-Dichloroethene	9.37		ug/L	10.00		94	70-130	4	25	
trans-1,3-Dichloropropene	9.01		ug/L	10.00		90	70-130	1	25	
Trichloroethene	9.52		ug/L	10.00		95	70-130	0	25	
Trichlorofluoromethane	11.3		ug/L	10.00		113	70-130	1	25	
Vinyl Acetate	10.1		ug/L	10.00		101	70-130	3	25	
Vinyl Chloride	9.85		ug/L	10.00		98	70-130	0.8	25	
Xylene O	8.68		ug/L	10.00		87	70-130	0	25	
Xylene P,M	17.8		ug/L	20.00		89	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	0.0296		mg/L	0.02500		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0266		mg/L	0.02500		106	70-130			
Surrogate: Dibromofluoromethane	0.0251		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: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21102 - 3510C

Blank

2-Methylnaphthalene	ND	0.002	mg/L							
Acenaphthene	ND	0.002	mg/L							
Acenaphthylene	ND	0.002	mg/L							
Anthracene	ND	0.002	mg/L							
Benzo(a)anthracene	ND	0.002	mg/L							
Benzo(a)pyrene	ND	0.002	mg/L							
Benzo(b)fluoranthene	ND	0.002	mg/L							
Benzo(g,h,i)perylene	ND	0.002	mg/L							
Benzo(k)fluoranthene	ND	0.002	mg/L							
Chrysene	ND	0.002	mg/L							
Dibenzo(a,h)Anthracene	ND	0.002	mg/L							
Fluoranthene	ND	0.002	mg/L							
Fluorene	ND	0.002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L							
Naphthalene	ND	0.002	mg/L							
Phenanthrene	ND	0.002	mg/L							
Pyrene	ND	0.002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.000328		mg/L	0.0006250		52	30-130			
Surrogate: 2-Fluorobiphenyl	0.000375		mg/L	0.0006250		60	30-130			
Surrogate: Nitrobenzene-d5	0.000405		mg/L	0.0006250		65	30-130			
Surrogate: p-Terphenyl-d14	0.000418		mg/L	0.0006250		67	30-130			

LCS

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140			
Anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Chrysene	ND	0.002	mg/L	0.0005000			40-140			
Dibenzo(a,h)Anthracene	0.0005	0.002	mg/L	0.0005000		104	40-140			
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Fluorene	ND	0.002	mg/L	0.0005000			40-140			
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Naphthalene	ND	0.002	mg/L	0.0005000			40-140			
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140			
Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.000305		mg/L	0.0006250		49	30-130			
Surrogate: 2-Fluorobiphenyl	0.000358		mg/L	0.0006250		57	30-130			
Surrogate: Nitrobenzene-d5	0.000368		mg/L	0.0006250		59	30-130			
Surrogate: p-Terphenyl-d14	0.000422		mg/L	0.0006250		68	30-130			

LCS Dup



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21102 - 3510C

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Chrysene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Dibenzo(a,h)Anthracene	0.0006	0.002	mg/L	0.0005000		111	40-140	7	20	
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Fluorene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Naphthalene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.000292		mg/L	0.0006250		47	30-130			
Surrogate: 2-Fluorobiphenyl	0.000338		mg/L	0.0006250		54	30-130			
Surrogate: Nitrobenzene-d5	0.000370		mg/L	0.0006250		59	30-130			
Surrogate: p-Terphenyl-d14	0.000415		mg/L	0.0006250		66	30-130			

Classical Chemistry

Batch CG21206 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0206	0.0050	mg/L	0.02006		103	90-110			
Total Cyanide (LL)	0.0206	0.0050	mg/L	0.02006		103	90-110			

LCS

Dissolved Cyanide	0.145	0.0050	mg/L	0.1504		96	90-110			
Total Cyanide (LL)	0.145	0.0050	mg/L	0.1504		96	90-110			

LCS Dup

Dissolved Cyanide	0.144	0.0050	mg/L	0.1504		96	90-110	0.4	20	
Total Cyanide (LL)	0.144	0.0050	mg/L	0.1504		96	90-110	0.4	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207099

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
C-	Continuing Calibration recovery is below lower control limit (C-).
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: 1207099

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/labs/waterlabs-instate.php>

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: RI0002

http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

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://www4.egov.nh.gov/des/nhelap/namesearch.asp>

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

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

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301

http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.
 Client Project ID: _____
 Shipped/Delivered Via: ESS Courier

ESS Project ID: 12070099
 Date Project Due: 7/17/12
 Days For Project: 4 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

*** No**

Air No.:

2. Were Custody Seals Present?

No

3. Were Custody Seals Intact?

N/A

4. Is Radiation count < 100 CPM?

Yes

5. Is a cooler present?

YesCooler Temp: **2.0**Iced With: **Ice**

6. Was COC included with samples?

Yes

7. Was COC signed and dated by client?

Yes

8. Does the COC match the sample

Yes

9. Is COC complete and correct?

Yes

10. Are the samples properly preserved?

Yes

11. Proper sample containers used?

Yes

12. Any air bubbles in the VOA vials?

No

13. Holding times exceeded?

No

14. Sufficient sample volumes?

Yes

15. Any Subcontracting needed?

No16. Are ESS labels on correct containers? **Yes/No**17. Were samples received intact? **Yes/No**

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	H2SO4
1	Yes	1 L Glass	2	NP
1	Yes	250 ml Plastic	2	NaOH
1	Yes	40 ml - VOA	3	HCL
2	Yes	1 L Glass	2	H2SO4
2	Yes	1 L Glass	2	NP
2	Yes	250 ml Plastic	2	NaOH
2	Yes	40 ml - VOA	3	HCL
3	Yes	1 L Glass	2	H2SO4
3	Yes	1 L Glass	2	NP
3	Yes	250 ml Plastic	2	NaOH
3	Yes	40 ml - VOA	3	HCL
4	Yes	1 L Glass	2	H2SO4
4	Yes	1 L Glass	2	NP
4	Yes	250 ml Plastic	2	NaOH
4	Yes	40 ml - VOA	3	HCL
5	Yes	1 L Glass	2	H2SO4
5	Yes	1 L Glass	2	NP
5	Yes	250 ml Plastic	2	NaOH
5	Yes	40 ml - VOA	3	HCL
6	Yes	1 L Glass	2	H2SO4
6	Yes	1 L Glass	2	NP
6	Yes	250 ml Plastic	2	NaOH
6	Yes	40 ml - VOA	3	HCL
7	Yes	1 L Glass	1	H2SO4

Sample and Cooler Receipt Checklist

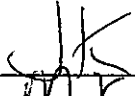
Client: GZA GeoEnvironmental, Inc.

ESS Project ID: 12070099

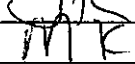
7	Yes
7	Yes
7	Yes
8	Yes
8	Yes
8	Yes
8	Yes
9	Yes
9	Yes
9	Yes
9	Yes
10	Yes

1 L Glass	2
250 ml Plastic	2
40 ml - VOA	3
1 L Glass	2
1 L Glass	2
250 ml Plastic	2
40 ml - VOA	3
1 L Glass	2
1 L Glass	2
250 ml Plastic	2
40 ml - VOA	3
40 ml - VOA	3

NP
NaOH
HCL
H2SO4
NP
NaOH
HCL
H2SO4
NP
NaOH
HCL
HCL

Completed By: 

Date/Time: 7/11/12 1041

Reviewed By: 

Date/Time: 7/11/12

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

Page 1 of 1

Turn Time If faster than 5 days, prior approval by laboratory is required #	Standard Other	Reporting Limits	ESS LAB PROJECT ID 1207099
State where samples were collected from: MA (R) CT NH NJ NY ME	Electronic Deliverable Yes ☒ No ☐	Format: Excel ☒ Access ☐ PDF ☒ Other ☐	
Is this project for any of the following: MA-MCP Navy USACE Other			

Co. Name GZA	Project # 43654.00	Project Name (20 Char. or less) TIDEWATER	Number of Containers	Type of Containers	Write Required Analysis									
Contact Person Meg Kilpatrick	Address 530 Broadway	City Providence	State RI	Zip 02909										
Telephone # 401-421-4140	Fax #	Email Address margaret.kilpatrick@gza.com	PO #											
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	VOC	TPH	PAH	Total Cyanide	Dissolve Cyanide
1	7-10-12	1206		X	GW	MW-201	1235	9	6VP	X	X	X	X	X
2	7-10-12	1236		X	GW	MW-208	1235	9	6VP	X	X	X	X	X
3	7-10-12	1420		X	GW	MW-310 S	1235	9	6VP	X	X	X	X	X
4	7-10-12	1450		X	GW	MW-310 D	1235	9	6VP	X	X	X	X	X
5	7-10-12	1315		X	GW	MW-334 S	1235	9	6VP	X	X	X	X	X
6	7-10-12	1425		X	GW	MW-334 D	1235	9	6VP	X	X	X	X	X
7	7-10-12	1450		X	GW	MW-318 D	1235	8	6VP	X	X	X	X	X
8	7-10-12	1240		X	GW	MW-318 S	1235	9	6VP	X	X	X	X	X
10	7-10-12	0700		X	GW	TBLK0702	2	3	V	X				
9	7-10-12	1330		X	GW	BDO71012	1235	9	6VP	X	X	X	X	X

Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters	Preservation Code 1- NP; 2- HCl; 3- H ₂ SO ₄ ; 4- HNO ₃ ; 5- NaOH; 6- MeOH; 7- Asorbic Acid; 8- ZnAct; 9-
Cooler Present ☒ Yes ☐ No	Internal Use Only
Seals Intact ☒ Yes ☐ No	NA: ☐ Pickup
Cooler Temp: 2.1, 2.1, 2.1	Technicians
Relinquished by: (Signature) <i>[Signature]</i> Date/Time 7/10/12 17:20	Received by: (Signature) <i>[Signature]</i> Date/Time 7/10/12 17:30
Relinquished by: (Signature) <i>[Signature]</i> Date/Time 7/10/12 17:30	Received by: (Signature) <i>[Signature]</i> Date/Time 7/10/12 17:30
Relinquished by: (Signature) <i>[Signature]</i> Date/Time 7/10/12 17:30	Received by: (Signature) <i>[Signature]</i> Date/Time 7/10/12 17:30

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A



CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (03.043654.00)
ESS Laboratory Work Order Number: 1207134

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 4:26 pm, Jul 20, 2012

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.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

SAMPLE RECEIPT

The following samples were received on July 11, 2012 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	SampleName	Matrix	Analysis
1207134-01	MW-7	Ground Water	8100M, 8260B, 8270C, 9014
1207134-02	MW-312D	Ground Water	8100M, 8260B, 8270C, 9014
1207134-03	MW-326S	Ground Water	8100M, 8260B, 8270C, 9014
1207134-04	MW-326D	Ground Water	8100M, 8260B, 8270C, 9014
1207134-05	MW-333S	Ground Water	8100M, 8260B, 8270C, 9014
1207134-06	MW-333D	Ground Water	8100M, 8260B, 8270C, 9014
1207134-07	MW-6	Ground Water	8100M, 8260B, 8270C, 9014
1207134-08	MW-107	Ground Water	8100M, 8260B, 8270C, 9014
1207134-09	MW-109	Ground Water	8100M, 8260B, 8270C, 9014
1207134-10	MW-337	Ground Water	8100M, 8260B, 8270C, 9014
1207134-11	MW-316S	Ground Water	8260B
1207134-12	MW-316D	Ground Water	8100M, 8260B, 8270C, 9014
1207134-13	BD071112	Ground Water	8100M, 8260B, 8270C, 9014
1207134-14	TBLK071112	Aqueous	8260B



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CVG0122-CCV1 Continuing Calibration recovery is below lower control limit (C-).

1,4-Dioxane - Screen (64% @ 70-130%)

8270C Polynuclear Aromatic Hydrocarbons

1207134-02 Surrogate recovery(ies) diluted below the MRL (SD).

1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)

1207134-03 Surrogate recovery(ies) below lower control limit (S-).

1,2-Dichlorobenzene-d4 (% @ 30-130%)

1207134-06 Surrogate recovery(ies) diluted below the MRL (SD).

1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)

1207134-09 Surrogate recovery(ies) diluted below the MRL (SD).

1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)

CG21221-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

2-Methylnaphthalene (200%), Acenaphthylene (200%), Naphthalene (33%)

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

Client Sample ID: MW-7

Date Sampled: 07/11/12 15:25

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: ML

Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (0.20)		1	07/14/12 3:35	CVG0098	CG21203
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>		
<i>Surrogate: O-Terphenyl</i>		<i>111 %</i>		<i>40-140</i>		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 07/11/12 15:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-01

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/17/12 14:16	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/17/12 14:16	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/17/12 14:16	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/17/12 14:16	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/17/12 14:16	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0010)	3	1	07/17/12 14:16	CVG0122	CG21716
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
1,4-Dioxane - Screen	ND (0.500)		1	07/17/12 14:16	CVG0122	CG21716
1-Chlorohexane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
2-Butanone	ND (0.0100)		1	07/17/12 14:16	CVG0122	CG21716
2-Chlorotoluene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
2-Hexanone	ND (0.0100)		1	07/17/12 14:16	CVG0122	CG21716
4-Chlorotoluene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.0250)		1	07/17/12 14:16	CVG0122	CG21716
Acetone	ND (0.0100)		1	07/17/12 14:16	CVG0122	CG21716
Benzene	ND (0.0010)	0.14	1	07/17/12 14:16	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 07/11/12 15:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-01

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
Bromochloromethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Bromodichloromethane	ND (0.0006)		1	07/17/12 14:16	CVG0122	CG21716
Bromoform	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Bromomethane	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
Carbon Disulfide	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/17/12 14:16	CVG0122	CG21716
Chlorobenzene	ND (0.0010)	3.2	1	07/17/12 14:16	CVG0122	CG21716
Chloroethane	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
Chloroform	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Chloromethane	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/17/12 14:16	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 14:16	CVG0122	CG21716
Dibromochloromethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Dibromomethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
Diethyl Ether	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Di-isopropyl ether	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Ethylbenzene	ND (0.0010)	1.6	1	07/17/12 14:16	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0006)		1	07/17/12 14:16	CVG0122	CG21716
Hexachloroethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Isopropylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/17/12 14:16	CVG0122	CG21716
Methylene Chloride	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
Naphthalene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
n-Butylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
n-Propylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
sec-Butylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Styrene	ND (0.0010)	2.2	1	07/17/12 14:16	CVG0122	CG21716
tert-Butylbenzene	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 07/11/12 15:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-01

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Tetrachloroethene	ND (0.0010)	0.15	1	07/17/12 14:16	CVG0122	CG21716
Tetrahydrofuran	ND (0.0050)		1	07/17/12 14:16	CVG0122	CG21716
Toluene	ND (0.0010)	1.7	1	07/17/12 14:16	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/17/12 14:16	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 14:16	CVG0122	CG21716
Trichloroethene	ND (0.0010)	0.54	1	07/17/12 14:16	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Vinyl Acetate	ND (0.0050)		1	07/17/12 14:16	CVG0122	CG21716
Vinyl Chloride	ND (0.0010)	0.002	1	07/17/12 14:16	CVG0122	CG21716
Xylene O	ND (0.0010)		1	07/17/12 14:16	CVG0122	CG21716
Xylene P,M	ND (0.0020)		1	07/17/12 14:16	CVG0122	CG21716
Xylenes (Total)	ND (0.0030)		1	07/17/12 14:16		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/17/12 14:16		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	94 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 07/11/12 15:25

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Acenaphthene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Acenaphthylene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Anthracene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Chrysene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Fluoranthene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Fluorene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Naphthalene	0.001 (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Phenanthrene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102
Pyrene	ND (0.0002)		1	07/13/12 1:06	CVG0085	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	45 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	47 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	48 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	60 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-7
Date Sampled: 07/11/12 15:25
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.0205 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609



*The Microbiology Division
of Thielsch Engineering, Inc.*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 07/11/12 14:15

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: ML

Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	10.7 (0.20)		1	07/14/12 4:18	CVG0098	CG21203
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl	108 %			40-140		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 07/11/12 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.100)	3.1	100	07/15/12 21:09	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0500)		100	07/15/12 21:09	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,1-Dichloroethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,1-Dichloroethene	ND (0.100)	0.007	100	07/15/12 21:09	CVG0103	CG21503
1,1-Dichloropropene	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.432 (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.500)	0.002	100	07/15/12 21:09	CVG0103	CG21503
1,2-Dibromoethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,2-Dichloroethane	ND (0.100)	0.11	100	07/15/12 21:09	CVG0103	CG21503
1,2-Dichloropropane	ND (0.100)	3	100	07/15/12 21:09	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,3-Dichloropropane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
1,4-Dioxane - Screen	ND (50.0)		100	07/15/12 21:09	CVG0103	CG21503
1-Chlorohexane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
2,2-Dichloropropane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
2-Butanone	ND (1.00)		100	07/15/12 21:09	CVG0103	CG21503
2-Chlorotoluene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
2-Hexanone	ND (1.00)		100	07/15/12 21:09	CVG0103	CG21503
4-Chlorotoluene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
4-Isopropyltoluene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (2.50)		100	07/15/12 21:09	CVG0103	CG21503
Acetone	ND (1.00)		100	07/15/12 21:09	CVG0103	CG21503
Benzene	2.29 (0.100)	0.14	100	07/15/12 21:09	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 07/11/12 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
Bromochloromethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Bromodichloromethane	ND (0.0600)		100	07/15/12 21:09	CVG0103	CG21503
Bromoform	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Bromomethane	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
Carbon Disulfide	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Carbon Tetrachloride	ND (0.100)	0.07	100	07/15/12 21:09	CVG0103	CG21503
Chlorobenzene	ND (0.100)	3.2	100	07/15/12 21:09	CVG0103	CG21503
Chloroethane	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
Chloroform	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Chloromethane	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.100)	2.4	100	07/15/12 21:09	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0400)		100	07/15/12 21:09	CVG0103	CG21503
Dibromochloromethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Dibromomethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
Diethyl Ether	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Di-isopropyl ether	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Ethylbenzene	1.63 (0.100)	1.6	100	07/15/12 21:09	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0600)		100	07/15/12 21:09	CVG0103	CG21503
Hexachloroethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Isopropylbenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.100)	5	100	07/15/12 21:09	CVG0103	CG21503
Methylene Chloride	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
Naphthalene	6.75 (0.100)		100	07/15/12 21:09	CVG0103	CG21503
n-Butylbenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
n-Propylbenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
sec-Butylbenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Styrene	ND (0.100)	2.2	100	07/15/12 21:09	CVG0103	CG21503
tert-Butylbenzene	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 07/11/12 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Tetrachloroethene	ND (0.100)	0.15	100	07/15/12 21:09	CVG0103	CG21503
Tetrahydrofuran	ND (0.500)		100	07/15/12 21:09	CVG0103	CG21503
Toluene	ND (0.100)	1.7	100	07/15/12 21:09	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.100)	2.8	100	07/15/12 21:09	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0400)		100	07/15/12 21:09	CVG0103	CG21503
Trichloroethene	ND (0.100)	0.54	100	07/15/12 21:09	CVG0103	CG21503
Trichlorofluoromethane	ND (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Vinyl Acetate	ND (0.500)		100	07/15/12 21:09	CVG0103	CG21503
Vinyl Chloride	ND (0.100)	0.002	100	07/15/12 21:09	CVG0103	CG21503
Xylene O	0.422 (0.100)		100	07/15/12 21:09	CVG0103	CG21503
Xylene P,M	ND (0.200)		100	07/15/12 21:09	CVG0103	CG21503
Xylenes (Total)	0.422 (0.300)		100	07/15/12 21:09		[CALC]
Trihalomethanes (Total)	ND (0.360)			07/15/12 21:09		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	92 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 07/11/12 14:15

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.172 (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Acenaphthene	0.108 (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Acenaphthylene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Anthracene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Benzo(a)anthracene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Benzo(a)pyrene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Benzo(b)fluoranthene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Benzo(g,h,i)perylene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Benzo(k)fluoranthene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Chrysene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Dibenzo(a,h)Anthracene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Fluoranthene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Fluorene	0.031 (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Naphthalene	2.98 (0.200)		1000	07/16/12 17:42	CVG0104	CG21102
Phenanthrene	0.033 (0.020)		100	07/16/12 13:51	CVG0104	CG21102
Pyrene	ND (0.020)		100	07/16/12 13:51	CVG0104	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	SD	30-130
Surrogate: 2-Fluorobiphenyl	%	SD	30-130
Surrogate: Nitrobenzene-d5	%	SD	30-130
Surrogate: p-Terphenyl-d14	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-312D
Date Sampled: 07/11/12 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-02
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.480 (0.0250)	9014		5	EEM	07/16/12 15:15	mg/L	CG21609

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 07/11/12 09:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: ML

Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	6.43 (0.20)		1	07/14/12 5:01	CVG0098	CG21203
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl	104 %			40-140		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 07/11/12 09:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/15/12 18:16	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 18:16	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/15/12 18:16	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.0674 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/15/12 18:16	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/15/12 18:16	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)	3	1	07/15/12 18:16	CVG0103	CG21503
1,3,5-Trimethylbenzene	0.0098 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 18:16	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 18:16	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 18:16	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
4-Isopropyltoluene	0.0019 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 18:16	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 18:16	CVG0103	CG21503
Benzene	0.368 (0.0100)	0.14	10	07/17/12 12:49	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 07/11/12 09:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 18:16	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/15/12 18:16	CVG0103	CG21503
Chlorobenzene	ND (0.0010)	3.2	1	07/15/12 18:16	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/15/12 18:16	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 18:16	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Ethylbenzene	0.186 (0.0100)	1.6	10	07/17/12 12:49	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 18:16	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Isopropylbenzene	0.0419 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/15/12 18:16	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
Naphthalene	0.0474 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
n-Propylbenzene	0.0152 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
sec-Butylbenzene	0.0015 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Styrene	ND (0.0010)	2.2	1	07/15/12 18:16	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 07/11/12 09:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)	0.15	1	07/15/12 18:16	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 18:16	CVG0103	CG21503
Toluene	0.0022 (0.0010)	1.7	1	07/15/12 18:16	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/15/12 18:16	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 18:16	CVG0103	CG21503
Trichloroethene	ND (0.0010)	0.54	1	07/15/12 18:16	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 18:16	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)	0.002	1	07/15/12 18:16	CVG0103	CG21503
Xylene O	0.0735 (0.0010)		1	07/15/12 18:16	CVG0103	CG21503
Xylene P,M	0.0120 (0.0020)		1	07/15/12 18:16	CVG0103	CG21503
Xylenes (Total)	0.0855 (0.0030)		1	07/15/12 18:16		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 18:16		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	99 %		70-130
Surrogate: 4-Bromofluorobenzene	104 %		70-130
Surrogate: Dibromofluoromethane	89 %		70-130
Surrogate: Toluene-d8	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 07/11/12 09:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.024 (0.002)		10	07/13/12 21:22	CVG0085	CG21102
Acenaphthene	0.038 (0.002)		10	07/13/12 21:22	CVG0085	CG21102
Acenaphthylene	0.0008 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Anthracene	0.001 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Benzo(a)anthracene	0.0003 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Benzo(a)pyrene	0.0003 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Benzo(b)fluoranthene	0.0003 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Chrysene	0.0003 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Fluoranthene	0.001 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Fluorene	0.006 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Naphthalene	0.008 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Phenanthrene	0.002 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102
Pyrene	0.002 (0.0002)		1	07/13/12 7:54	CVG0085	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	S-	30-130
Surrogate: 2-Fluorobiphenyl	49 %		30-130
Surrogate: Nitrobenzene-d5	39 %		30-130
Surrogate: p-Terphenyl-d14	60 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-326S
Date Sampled: 07/11/12 09:20
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-03
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.297 (0.0250)	9014		5	EEM	07/16/12 15:15	mg/L	CG21609



*The Microbiology Division
of Thielsch Engineering, Inc.*



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 07/11/12 09:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/15/12 18:45	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 18:45	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/15/12 18:45	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.0023 (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/15/12 18:45	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/15/12 18:45	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)	3	1	07/15/12 18:45	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 18:45	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 18:45	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 18:45	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 18:45	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 18:45	CVG0103	CG21503
Benzene	0.0588 (0.0010)	0.14	1	07/15/12 18:45	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 07/11/12 09:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 18:45	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/15/12 18:45	CVG0103	CG21503
Chlorobenzene	ND (0.0010)	3.2	1	07/15/12 18:45	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/15/12 18:45	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 18:45	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Ethylbenzene	0.0201 (0.0010)	1.6	1	07/15/12 18:45	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 18:45	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Isopropylbenzene	0.0022 (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/15/12 18:45	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
Naphthalene	0.0448 (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
n-Propylbenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Styrene	ND (0.0010)	2.2	1	07/15/12 18:45	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 07/11/12 09:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)	0.15	1	07/15/12 18:45	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 18:45	CVG0103	CG21503
Toluene	ND (0.0010)	1.7	1	07/15/12 18:45	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/15/12 18:45	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 18:45	CVG0103	CG21503
Trichloroethene	ND (0.0010)	0.54	1	07/15/12 18:45	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 18:45	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)	0.002	1	07/15/12 18:45	CVG0103	CG21503
Xylene O	0.0038 (0.0010)		1	07/15/12 18:45	CVG0103	CG21503
Xylene P,M	ND (0.0020)		1	07/15/12 18:45	CVG0103	CG21503
Xylenes (Total)	0.0038 (0.0030)		1	07/15/12 18:45		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 18:45		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	100 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	92 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 07/11/12 09:45

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Acenaphthene	0.001 (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Acenaphthylene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Anthracene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Chrysene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Fluoranthene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Fluorene	0.0002 (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Naphthalene	0.012 (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Phenanthrene	0.0004 (0.0002)		1	07/13/12 1:51	CVG0085	CG21102
Pyrene	ND (0.0002)		1	07/13/12 1:51	CVG0085	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	37 %		30-130
Surrogate: 2-Fluorobiphenyl	34 %		30-130
Surrogate: Nitrobenzene-d5	41 %		30-130
Surrogate: p-Terphenyl-d14	62 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-326D
Date Sampled: 07/11/12 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-04
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.665 (0.0250)	9014		5	EEM	07/16/12 15:15	mg/L	CG21609



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333S
Date Sampled: 07/11/12 12:20
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	1.07 (0.20)		1	07/14/12 6:28	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	112 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 07/11/12 12:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/15/12 19:14	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 19:14	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/15/12 19:14	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.0136 (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/15/12 19:14	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/15/12 19:14	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)	3	1	07/15/12 19:14	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 19:14	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 19:14	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 19:14	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 19:14	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 19:14	CVG0103	CG21503
Benzene	0.0287 (0.0010)	0.14	1	07/15/12 19:14	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 07/11/12 12:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 19:14	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/15/12 19:14	CVG0103	CG21503
Chlorobenzene	ND (0.0010)	3.2	1	07/15/12 19:14	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/15/12 19:14	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 19:14	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Ethylbenzene	0.212 (0.0100)	1.6	10	07/17/12 13:18	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 19:14	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Isopropylbenzene	0.0068 (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/15/12 19:14	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
Naphthalene	0.0122 (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
n-Propylbenzene	0.0024 (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Styrene	ND (0.0010)	2.2	1	07/15/12 19:14	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 07/11/12 12:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)	0.15	1	07/15/12 19:14	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 19:14	CVG0103	CG21503
Toluene	0.0014 (0.0010)	1.7	1	07/15/12 19:14	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/15/12 19:14	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 19:14	CVG0103	CG21503
Trichloroethene	ND (0.0010)	0.54	1	07/15/12 19:14	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 19:14	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)	0.002	1	07/15/12 19:14	CVG0103	CG21503
Xylene O	0.0144 (0.0010)		1	07/15/12 19:14	CVG0103	CG21503
Xylene P,M	0.0023 (0.0020)		1	07/15/12 19:14	CVG0103	CG21503
Xylenes (Total)	0.0167 (0.0030)		1	07/15/12 19:14		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 19:14		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	97 %		70-130
Surrogate: 4-Bromofluorobenzene	104 %		70-130
Surrogate: Dibromofluoromethane	90 %		70-130
Surrogate: Toluene-d8	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 07/11/12 12:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Acenaphthene	0.002 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Acenaphthylene	0.001 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Anthracene	0.0002 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Chrysene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Fluoranthene	0.0002 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Fluorene	0.0006 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Naphthalene	0.005 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Phenanthrene	0.0005 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102
Pyrene	0.0003 (0.0002)		1	07/13/12 5:38	CVG0085	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	44 %		30-130
Surrogate: 2-Fluorobiphenyl	45 %		30-130
Surrogate: Nitrobenzene-d5	50 %		30-130
Surrogate: p-Terphenyl-d14	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333S
Date Sampled: 07/11/12 12:20
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-05
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.0815 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333D
Date Sampled: 07/11/12 12:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	7.82 (0.20)		1	07/14/12 7:10	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
Surrogate: O-Terphenyl	106 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 07/11/12 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.100)	3.1	100	07/15/12 20:40	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0500)		100	07/15/12 20:40	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,1-Dichloroethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,1-Dichloroethene	ND (0.100)	0.007	100	07/15/12 20:40	CVG0103	CG21503
1,1-Dichloropropene	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,2,4-Trimethylbenzene	0.344 (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.500)	0.002	100	07/15/12 20:40	CVG0103	CG21503
1,2-Dibromoethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,2-Dichloroethane	ND (0.100)	0.11	100	07/15/12 20:40	CVG0103	CG21503
1,2-Dichloropropane	ND (0.100)	3	100	07/15/12 20:40	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,3-Dichloropropane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
1,4-Dioxane - Screen	ND (50.0)		100	07/15/12 20:40	CVG0103	CG21503
1-Chlorohexane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
2,2-Dichloropropane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
2-Butanone	ND (1.00)		100	07/15/12 20:40	CVG0103	CG21503
2-Chlorotoluene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
2-Hexanone	ND (1.00)		100	07/15/12 20:40	CVG0103	CG21503
4-Chlorotoluene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
4-Isopropyltoluene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (2.50)		100	07/15/12 20:40	CVG0103	CG21503
Acetone	ND (1.00)		100	07/15/12 20:40	CVG0103	CG21503
Benzene	1.77 (0.100)	0.14	100	07/15/12 20:40	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 07/11/12 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
Bromochloromethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Bromodichloromethane	ND (0.0600)		100	07/15/12 20:40	CVG0103	CG21503
Bromoform	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Bromomethane	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
Carbon Disulfide	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Carbon Tetrachloride	ND (0.100)	0.07	100	07/15/12 20:40	CVG0103	CG21503
Chlorobenzene	ND (0.100)	3.2	100	07/15/12 20:40	CVG0103	CG21503
Chloroethane	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
Chloroform	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Chloromethane	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.100)	2.4	100	07/15/12 20:40	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0400)		100	07/15/12 20:40	CVG0103	CG21503
Dibromochloromethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Dibromomethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
Diethyl Ether	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Di-isopropyl ether	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Ethylbenzene	0.981 (0.100)	1.6	100	07/15/12 20:40	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0600)		100	07/15/12 20:40	CVG0103	CG21503
Hexachloroethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Isopropylbenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.100)	5	100	07/15/12 20:40	CVG0103	CG21503
Methylene Chloride	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
Naphthalene	3.55 (0.100)		100	07/15/12 20:40	CVG0103	CG21503
n-Butylbenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
n-Propylbenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
sec-Butylbenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Styrene	ND (0.100)	2.2	100	07/15/12 20:40	CVG0103	CG21503
tert-Butylbenzene	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 07/11/12 12:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Tetrachloroethene	ND (0.100)	0.15	100	07/15/12 20:40	CVG0103	CG21503
Tetrahydrofuran	ND (0.500)		100	07/15/12 20:40	CVG0103	CG21503
Toluene	ND (0.100)	1.7	100	07/15/12 20:40	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.100)	2.8	100	07/15/12 20:40	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0400)		100	07/15/12 20:40	CVG0103	CG21503
Trichloroethene	ND (0.100)	0.54	100	07/15/12 20:40	CVG0103	CG21503
Trichlorofluoromethane	ND (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Vinyl Acetate	ND (0.500)		100	07/15/12 20:40	CVG0103	CG21503
Vinyl Chloride	ND (0.100)	0.002	100	07/15/12 20:40	CVG0103	CG21503
Xylene O	0.205 (0.100)		100	07/15/12 20:40	CVG0103	CG21503
Xylene P,M	ND (0.200)		100	07/15/12 20:40	CVG0103	CG21503
Xylenes (Total)	ND (0.300)		100	07/15/12 20:40		[CALC]
Trihalomethanes (Total)	ND (0.360)			07/15/12 20:40		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	100 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	91 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 07/11/12 12:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.066 (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Acenaphthene	0.073 (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Acenaphthylene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Anthracene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Benzo(a)anthracene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Benzo(a)pyrene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Benzo(b)fluoranthene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Benzo(g,h,i)perylene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Benzo(k)fluoranthene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Chrysene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Dibenzo(a,h)Anthracene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Fluoranthene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Fluorene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Naphthalene	2.07 (0.200)		1000	07/16/12 18:28	CVG0104	CG21102
Phenanthrene	0.022 (0.020)		100	07/16/12 14:37	CVG0104	CG21102
Pyrene	ND (0.020)		100	07/16/12 14:37	CVG0104	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	%	SD	30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	%	SD	30-130
<i>Surrogate: Nitrobenzene-d5</i>	%	SD	30-130
<i>Surrogate: p-Terphenyl-d14</i>	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333D
Date Sampled: 07/11/12 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-06
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.742 (0.0250)	9014		5	EEM	07/16/12 15:15	mg/L	CG21609



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-6
Date Sampled: 07/11/12 11:35
Percent Solids: N/A
Initial Volume: 960
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	3.65 (0.21)	<u>Limit</u>	<u>DF</u>	07/14/12 7:54	CVG0098	CG21203
			1			
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	121 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 07/11/12 11:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/15/12 19:43	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 19:43	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/15/12 19:43	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/15/12 19:43	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/15/12 19:43	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)	3	1	07/15/12 19:43	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 19:43	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 19:43	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 19:43	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 19:43	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 19:43	CVG0103	CG21503
Benzene	0.0213 (0.0010)	0.14	1	07/15/12 19:43	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 07/11/12 11:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 19:43	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/15/12 19:43	CVG0103	CG21503
Chlorobenzene	ND (0.0010)	3.2	1	07/15/12 19:43	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/15/12 19:43	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 19:43	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Ethylbenzene	0.0243 (0.0010)	1.6	1	07/15/12 19:43	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 19:43	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Isopropylbenzene	0.0033 (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/15/12 19:43	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
Naphthalene	0.0035 (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
n-Propylbenzene	0.0027 (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Styrene	ND (0.0010)	2.2	1	07/15/12 19:43	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 07/11/12 11:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)	0.15	1	07/15/12 19:43	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 19:43	CVG0103	CG21503
Toluene	0.0011 (0.0010)	1.7	1	07/15/12 19:43	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/15/12 19:43	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 19:43	CVG0103	CG21503
Trichloroethene	ND (0.0010)	0.54	1	07/15/12 19:43	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 19:43	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)	0.002	1	07/15/12 19:43	CVG0103	CG21503
Xylene O	0.0212 (0.0010)		1	07/15/12 19:43	CVG0103	CG21503
Xylene P,M	0.0028 (0.0020)		1	07/15/12 19:43	CVG0103	CG21503
Xylenes (Total)	0.0240 (0.0030)		1	07/15/12 19:43		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 19:43		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	98 %		70-130
Surrogate: 4-Bromofluorobenzene	103 %		70-130
Surrogate: Dibromofluoromethane	90 %		70-130
Surrogate: Toluene-d8	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 07/11/12 11:35

Percent Solids: N/A

Initial Volume: 960

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Acenaphthene	0.010 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Acenaphthylene	0.057 (0.002)		10	07/13/12 19:51	CVG0085	CG21102
Anthracene	0.0006 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Chrysene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Fluoranthene	0.0007 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Fluorene	0.010 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Naphthalene	0.002 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Phenanthrene	0.007 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102
Pyrene	0.0004 (0.0002)		1	07/13/12 6:23	CVG0085	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	44 %		30-130
Surrogate: 2-Fluorobiphenyl	47 %		30-130
Surrogate: Nitrobenzene-d5	43 %		30-130
Surrogate: p-Terphenyl-d14	68 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-6
Date Sampled: 07/11/12 11:35
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-07
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	0.0063 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.174 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 07/11/12 09:25

Percent Solids: N/A

Initial Volume: 960

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: ML

Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u> <u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (0.21)		1	07/14/12 8:37	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>111 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 07/11/12 09:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/15/12 20:12	CVG0103	CG21503
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/15/12 20:12	CVG0103	CG21503
1,1,2-Trichloroethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,1-Dichloroethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/15/12 20:12	CVG0103	CG21503
1,1-Dichloropropene	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,2,3-Trichloropropane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/15/12 20:12	CVG0103	CG21503
1,2-Dibromoethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,2-Dichlorobenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/15/12 20:12	CVG0103	CG21503
1,2-Dichloropropane	ND (0.0010)	3	1	07/15/12 20:12	CVG0103	CG21503
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,3-Dichlorobenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,3-Dichloropropane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,4-Dichlorobenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
1,4-Dioxane - Screen	ND (0.500)		1	07/15/12 20:12	CVG0103	CG21503
1-Chlorohexane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
2,2-Dichloropropane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
2-Butanone	ND (0.0100)		1	07/15/12 20:12	CVG0103	CG21503
2-Chlorotoluene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
2-Hexanone	ND (0.0100)		1	07/15/12 20:12	CVG0103	CG21503
4-Chlorotoluene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
4-Isopropyltoluene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
4-Methyl-2-Pentanone	ND (0.0250)		1	07/15/12 20:12	CVG0103	CG21503
Acetone	ND (0.0100)		1	07/15/12 20:12	CVG0103	CG21503
Benzene	ND (0.0010)	0.14	1	07/15/12 20:12	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 07/11/12 09:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
Bromochloromethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Bromodichloromethane	ND (0.0006)		1	07/15/12 20:12	CVG0103	CG21503
Bromoform	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Bromomethane	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
Carbon Disulfide	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/15/12 20:12	CVG0103	CG21503
Chlorobenzene	ND (0.0010)	3.2	1	07/15/12 20:12	CVG0103	CG21503
Chloroethane	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
Chloroform	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Chloromethane	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/15/12 20:12	CVG0103	CG21503
cis-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 20:12	CVG0103	CG21503
Dibromochloromethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Dibromomethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Dichlorodifluoromethane	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
Diethyl Ether	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Di-isopropyl ether	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Ethylbenzene	ND (0.0010)	1.6	1	07/15/12 20:12	CVG0103	CG21503
Hexachlorobutadiene	ND (0.0006)		1	07/15/12 20:12	CVG0103	CG21503
Hexachloroethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Isopropylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/15/12 20:12	CVG0103	CG21503
Methylene Chloride	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
Naphthalene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
n-Butylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
n-Propylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
sec-Butylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Styrene	ND (0.0010)	2.2	1	07/15/12 20:12	CVG0103	CG21503
tert-Butylbenzene	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 07/11/12 09:25

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Tetrachloroethene	ND (0.0010)	0.15	1	07/15/12 20:12	CVG0103	CG21503
Tetrahydrofuran	ND (0.0050)		1	07/15/12 20:12	CVG0103	CG21503
Toluene	ND (0.0010)	1.7	1	07/15/12 20:12	CVG0103	CG21503
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/15/12 20:12	CVG0103	CG21503
trans-1,3-Dichloropropene	ND (0.0004)		1	07/15/12 20:12	CVG0103	CG21503
Trichloroethene	ND (0.0010)	0.54	1	07/15/12 20:12	CVG0103	CG21503
Trichlorofluoromethane	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Vinyl Acetate	ND (0.0050)		1	07/15/12 20:12	CVG0103	CG21503
Vinyl Chloride	ND (0.0010)	0.002	1	07/15/12 20:12	CVG0103	CG21503
Xylene O	ND (0.0010)		1	07/15/12 20:12	CVG0103	CG21503
Xylene P,M	ND (0.0020)		1	07/15/12 20:12	CVG0103	CG21503
Xylenes (Total)	ND (0.0030)		1	07/15/12 20:12		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/15/12 20:12		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	91 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 07/11/12 09:25

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Acenaphthene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Acenaphthylene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Anthracene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Chrysene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Fluoranthene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Fluorene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Naphthalene	0.002 (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Phenanthrene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102
Pyrene	ND (0.0002)		1	07/13/12 2:37	CVG0085	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	40 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	44 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	45 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	63 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-107
Date Sampled: 07/11/12 09:25
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-08
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.0306 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 07/11/12 15:20

Percent Solids: N/A

Initial Volume: 955

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: ML

Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	3.62 (0.21)		1	07/14/12 9:46	CVG0098	CG21203
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl	104 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 07/11/12 15:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-09

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0100)	3.1	10	07/17/12 20:02	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0050)		10	07/17/12 20:02	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0100)	0.007	10	07/17/12 20:02	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,2,4-Trimethylbenzene	0.295 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0500)	0.002	10	07/17/12 20:02	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0100)	0.11	10	07/17/12 20:02	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0100)	3	10	07/17/12 20:02	CVG0122	CG21716
1,3,5-Trimethylbenzene	0.0172 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
1,4-Dioxane - Screen	ND (5.00)		10	07/17/12 20:02	CVG0122	CG21716
1-Chlorohexane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
2-Butanone	ND (0.100)		10	07/17/12 20:02	CVG0122	CG21716
2-Chlorotoluene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
2-Hexanone	ND (0.100)		10	07/17/12 20:02	CVG0122	CG21716
4-Chlorotoluene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
4-Isopropyltoluene	0.0104 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.250)		10	07/17/12 20:02	CVG0122	CG21716
Acetone	ND (0.100)		10	07/17/12 20:02	CVG0122	CG21716
Benzene	0.0402 (0.0100)	0.14	10	07/17/12 20:02	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 07/11/12 15:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-09

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
Bromochloromethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Bromodichloromethane	ND (0.0060)		10	07/17/12 20:02	CVG0122	CG21716
Bromoform	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Bromomethane	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
Carbon Disulfide	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0100)	0.07	10	07/17/12 20:02	CVG0122	CG21716
Chlorobenzene	ND (0.0100)	3.2	10	07/17/12 20:02	CVG0122	CG21716
Chloroethane	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
Chloroform	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Chloromethane	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0100)	2.4	10	07/17/12 20:02	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0040)		10	07/17/12 20:02	CVG0122	CG21716
Dibromochloromethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Dibromomethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
Diethyl Ether	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Di-isopropyl ether	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Ethylbenzene	0.0928 (0.0100)	1.6	10	07/17/12 20:02	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0060)		10	07/17/12 20:02	CVG0122	CG21716
Hexachloroethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Isopropylbenzene	0.0337 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0100)	5	10	07/17/12 20:02	CVG0122	CG21716
Methylene Chloride	ND (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
Naphthalene	0.559 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
n-Butylbenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
n-Propylbenzene	0.0189 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
sec-Butylbenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Styrene	ND (0.0100)	2.2	10	07/17/12 20:02	CVG0122	CG21716
tert-Butylbenzene	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 07/11/12 15:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-09

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Tetrachloroethene	ND (0.0100)	0.15	10	07/17/12 20:02	CVG0122	CG21716
Tetrahydrofuran	ND (0.0500)		10	07/17/12 20:02	CVG0122	CG21716
Toluene	ND (0.0100)	1.7	10	07/17/12 20:02	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0100)	2.8	10	07/17/12 20:02	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0040)		10	07/17/12 20:02	CVG0122	CG21716
Trichloroethene	ND (0.0100)	0.54	10	07/17/12 20:02	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Vinyl Acetate	ND (0.0500)		10	07/17/12 20:02	CVG0122	CG21716
Vinyl Chloride	ND (0.0100)	0.002	10	07/17/12 20:02	CVG0122	CG21716
Xylene O	0.0457 (0.0100)		10	07/17/12 20:02	CVG0122	CG21716
Xylene P,M	0.0415 (0.0200)		10	07/17/12 20:02	CVG0122	CG21716
Xylenes (Total)	0.0872 (0.0300)		10	07/17/12 20:02		[CALC]
Trihalomethanes (Total)	ND (0.0360)			07/17/12 20:02		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	91 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 07/11/12 15:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.026 (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Acenaphthene	0.004 (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Acenaphthylene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Anthracene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Benzo(a)anthracene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Benzo(a)pyrene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Benzo(b)fluoranthene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Benzo(g,h,i)perylene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Benzo(k)fluoranthene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Chrysene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Dibenzo(a,h)Anthracene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Fluoranthene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Fluorene	0.002 (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Indeno(1,2,3-cd)Pyrene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Naphthalene	0.204 (0.020)		100	07/16/12 13:05	CVG0089	CG21102
Phenanthrene	0.002 (0.002)		10	07/13/12 19:06	CVG0089	CG21102
Pyrene	ND (0.002)		10	07/13/12 19:06	CVG0089	CG21102

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	SD	30-130
Surrogate: 2-Fluorobiphenyl	%	SD	30-130
Surrogate: Nitrobenzene-d5	%	SD	30-130
Surrogate: p-Terphenyl-d14	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-109
Date Sampled: 07/11/12 15:20
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-09
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.235 (0.0250)	9014		5	EEM	07/16/12 15:15	mg/L	CG21609



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-337
Date Sampled: 07/11/12 10:30
Percent Solids: N/A
Initial Volume: 910
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-10
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 7/12/12 11:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	0.91 (0.22)		1	07/14/12 10:30	CVG0098	CG21203
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>105 %</i>		<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 07/11/12 10:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-10

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/17/12 16:11	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/17/12 16:11	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/17/12 16:11	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/17/12 16:11	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/17/12 16:11	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0010)	3	1	07/17/12 16:11	CVG0122	CG21716
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
1,4-Dioxane - Screen	ND (0.500)		1	07/17/12 16:11	CVG0122	CG21716
1-Chlorohexane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
2-Butanone	ND (0.0100)		1	07/17/12 16:11	CVG0122	CG21716
2-Chlorotoluene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
2-Hexanone	ND (0.0100)		1	07/17/12 16:11	CVG0122	CG21716
4-Chlorotoluene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.0250)		1	07/17/12 16:11	CVG0122	CG21716
Acetone	ND (0.0100)		1	07/17/12 16:11	CVG0122	CG21716
Benzene	ND (0.0010)	0.14	1	07/17/12 16:11	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 07/11/12 10:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-10

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
Bromochloromethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Bromodichloromethane	ND (0.0006)		1	07/17/12 16:11	CVG0122	CG21716
Bromoform	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Bromomethane	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
Carbon Disulfide	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/17/12 16:11	CVG0122	CG21716
Chlorobenzene	ND (0.0010)	3.2	1	07/17/12 16:11	CVG0122	CG21716
Chloroethane	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
Chloroform	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Chloromethane	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/17/12 16:11	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 16:11	CVG0122	CG21716
Dibromochloromethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Dibromomethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
Diethyl Ether	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Di-isopropyl ether	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Ethylbenzene	ND (0.0010)	1.6	1	07/17/12 16:11	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0006)		1	07/17/12 16:11	CVG0122	CG21716
Hexachloroethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Isopropylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/17/12 16:11	CVG0122	CG21716
Methylene Chloride	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
Naphthalene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
n-Butylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
n-Propylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
sec-Butylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Styrene	ND (0.0010)	2.2	1	07/17/12 16:11	CVG0122	CG21716
tert-Butylbenzene	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 07/11/12 10:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-10

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Tetrachloroethene	ND (0.0010)	0.15	1	07/17/12 16:11	CVG0122	CG21716
Tetrahydrofuran	ND (0.0050)		1	07/17/12 16:11	CVG0122	CG21716
Toluene	ND (0.0010)	1.7	1	07/17/12 16:11	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/17/12 16:11	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 16:11	CVG0122	CG21716
Trichloroethene	ND (0.0010)	0.54	1	07/17/12 16:11	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Vinyl Acetate	ND (0.0050)		1	07/17/12 16:11	CVG0122	CG21716
Vinyl Chloride	ND (0.0010)	0.002	1	07/17/12 16:11	CVG0122	CG21716
Xylene O	ND (0.0010)		1	07/17/12 16:11	CVG0122	CG21716
Xylene P,M	ND (0.0020)		1	07/17/12 16:11	CVG0122	CG21716
Xylenes (Total)	ND (0.0030)		1	07/17/12 16:11		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/17/12 16:11		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	106 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	92 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 07/11/12 10:30

Percent Solids: N/A

Initial Volume: 980

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Acenaphthene	0.0004 (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Acenaphthylene	0.0004 (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Anthracene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Chrysene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Fluoranthene	0.001 (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Fluorene	0.0009 (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Naphthalene	0.0002 (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Phenanthrene	ND (0.0002)		1	07/13/12 4:07	CVG0085	CG21221
Pyrene	0.001 (0.0002)		1	07/13/12 4:07	CVG0085	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	46 %		30-130
Surrogate: 2-Fluorobiphenyl	45 %		30-130
Surrogate: Nitrobenzene-d5	46 %		30-130
Surrogate: p-Terphenyl-d14	68 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-337
Date Sampled: 07/11/12 10:30
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-10
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	0.0099 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609
Total Cyanide (LL)	0.127 (0.0050)	9014		1	EEM	07/16/12 15:15	mg/L	CG21609



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316S

Date Sampled: 07/11/12 13:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-11

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/17/12 14:44	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/17/12 14:44	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/17/12 14:44	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/17/12 14:44	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/17/12 14:44	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0010)	3	1	07/17/12 14:44	CVG0122	CG21716
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
1,4-Dioxane - Screen	ND (0.500)		1	07/17/12 14:44	CVG0122	CG21716
1-Chlorohexane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
2-Butanone	ND (0.0100)		1	07/17/12 14:44	CVG0122	CG21716
2-Chlorotoluene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
2-Hexanone	ND (0.0100)		1	07/17/12 14:44	CVG0122	CG21716
4-Chlorotoluene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.0250)		1	07/17/12 14:44	CVG0122	CG21716
Acetone	ND (0.0100)		1	07/17/12 14:44	CVG0122	CG21716
Benzene	ND (0.0010)	0.14	1	07/17/12 14:44	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316S

Date Sampled: 07/11/12 13:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-11

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
Bromochloromethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Bromodichloromethane	ND (0.0006)		1	07/17/12 14:44	CVG0122	CG21716
Bromoform	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Bromomethane	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
Carbon Disulfide	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/17/12 14:44	CVG0122	CG21716
Chlorobenzene	ND (0.0010)	3.2	1	07/17/12 14:44	CVG0122	CG21716
Chloroethane	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
Chloroform	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Chloromethane	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/17/12 14:44	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 14:44	CVG0122	CG21716
Dibromochloromethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Dibromomethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
Diethyl Ether	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Di-isopropyl ether	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Ethylbenzene	ND (0.0010)	1.6	1	07/17/12 14:44	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0006)		1	07/17/12 14:44	CVG0122	CG21716
Hexachloroethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Isopropylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/17/12 14:44	CVG0122	CG21716
Methylene Chloride	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
Naphthalene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
n-Butylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
n-Propylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
sec-Butylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Styrene	ND (0.0010)	2.2	1	07/17/12 14:44	CVG0122	CG21716
tert-Butylbenzene	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316S

Date Sampled: 07/11/12 13:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-11

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Tetrachloroethene	ND (0.0010)	0.15	1	07/17/12 14:44	CVG0122	CG21716
Tetrahydrofuran	ND (0.0050)		1	07/17/12 14:44	CVG0122	CG21716
Toluene	ND (0.0010)	1.7	1	07/17/12 14:44	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/17/12 14:44	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 14:44	CVG0122	CG21716
Trichloroethene	ND (0.0010)	0.54	1	07/17/12 14:44	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Vinyl Acetate	ND (0.0050)		1	07/17/12 14:44	CVG0122	CG21716
Vinyl Chloride	ND (0.0010)	0.002	1	07/17/12 14:44	CVG0122	CG21716
Xylene O	ND (0.0010)		1	07/17/12 14:44	CVG0122	CG21716
Xylene P,M	ND (0.0020)		1	07/17/12 14:44	CVG0122	CG21716
Xylenes (Total)	ND (0.0030)		1	07/17/12 14:44		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/17/12 14:44		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	94 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 07/11/12 13:30

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: TAJ

Prepared: 7/17/12 15:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (0.20)		1	07/17/12 23:05	CVG0128	CG21720
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl		109 %		40-140		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 07/11/12 13:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-12

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/17/12 15:14	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/17/12 15:14	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/17/12 15:14	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/17/12 15:14	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/17/12 15:14	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0010)	3	1	07/17/12 15:14	CVG0122	CG21716
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
1,4-Dioxane - Screen	ND (0.500)		1	07/17/12 15:14	CVG0122	CG21716
1-Chlorohexane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
2-Butanone	ND (0.0100)		1	07/17/12 15:14	CVG0122	CG21716
2-Chlorotoluene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
2-Hexanone	ND (0.0100)		1	07/17/12 15:14	CVG0122	CG21716
4-Chlorotoluene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.0250)		1	07/17/12 15:14	CVG0122	CG21716
Acetone	ND (0.0100)		1	07/17/12 15:14	CVG0122	CG21716
Benzene	ND (0.0010)	0.14	1	07/17/12 15:14	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 07/11/12 13:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-12

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
Bromochloromethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Bromodichloromethane	ND (0.0006)		1	07/17/12 15:14	CVG0122	CG21716
Bromoform	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Bromomethane	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
Carbon Disulfide	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/17/12 15:14	CVG0122	CG21716
Chlorobenzene	ND (0.0010)	3.2	1	07/17/12 15:14	CVG0122	CG21716
Chloroethane	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
Chloroform	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Chloromethane	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/17/12 15:14	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 15:14	CVG0122	CG21716
Dibromochloromethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Dibromomethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
Diethyl Ether	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Di-isopropyl ether	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Ethylbenzene	ND (0.0010)	1.6	1	07/17/12 15:14	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0006)		1	07/17/12 15:14	CVG0122	CG21716
Hexachloroethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Isopropylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/17/12 15:14	CVG0122	CG21716
Methylene Chloride	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
Naphthalene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
n-Butylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
n-Propylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
sec-Butylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Styrene	ND (0.0010)	2.2	1	07/17/12 15:14	CVG0122	CG21716
tert-Butylbenzene	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 07/11/12 13:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-12

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Tetrachloroethene	ND (0.0010)	0.15	1	07/17/12 15:14	CVG0122	CG21716
Tetrahydrofuran	ND (0.0050)		1	07/17/12 15:14	CVG0122	CG21716
Toluene	ND (0.0010)	1.7	1	07/17/12 15:14	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/17/12 15:14	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 15:14	CVG0122	CG21716
Trichloroethene	ND (0.0010)	0.54	1	07/17/12 15:14	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Vinyl Acetate	ND (0.0050)		1	07/17/12 15:14	CVG0122	CG21716
Vinyl Chloride	ND (0.0010)	0.002	1	07/17/12 15:14	CVG0122	CG21716
Xylene O	ND (0.0010)		1	07/17/12 15:14	CVG0122	CG21716
Xylene P,M	ND (0.0020)		1	07/17/12 15:14	CVG0122	CG21716
Xylenes (Total)	ND (0.0030)		1	07/17/12 15:14		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/17/12 15:14		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	106 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	94 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 07/11/12 13:30

Percent Solids: N/A

Initial Volume: 950

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Acenaphthene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Acenaphthylene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Anthracene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Chrysene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Fluoranthene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Fluorene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Naphthalene	0.0004 (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Phenanthrene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221
Pyrene	ND (0.0002)		1	07/13/12 4:53	CVG0085	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	42 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	45 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	43 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	63 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-316D
Date Sampled: 07/11/12 13:30
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-12
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.0083 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071112

Date Sampled: 07/11/12 10:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: TAJ

Prepared: 7/17/12 15:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (0.20)		1	07/17/12 23:48	CVG0128	CG21720
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>		
<i>Surrogate: O-Terphenyl</i>		<i>111 %</i>		<i>40-140</i>		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071112

Date Sampled: 07/11/12 10:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-13

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,1,1-Trichloroethane	ND (0.0010)	3.1	1	07/17/12 15:43	CVG0122	CG21716
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/17/12 15:43	CVG0122	CG21716
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,1-Dichloroethene	ND (0.0010)	0.007	1	07/17/12 15:43	CVG0122	CG21716
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.002	1	07/17/12 15:43	CVG0122	CG21716
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,2-Dichloroethane	ND (0.0010)	0.11	1	07/17/12 15:43	CVG0122	CG21716
1,2-Dichloropropane	ND (0.0010)	3	1	07/17/12 15:43	CVG0122	CG21716
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
1,4-Dioxane - Screen	ND (0.500)		1	07/17/12 15:43	CVG0122	CG21716
1-Chlorohexane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
2-Butanone	ND (0.0100)		1	07/17/12 15:43	CVG0122	CG21716
2-Chlorotoluene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
2-Hexanone	ND (0.0100)		1	07/17/12 15:43	CVG0122	CG21716
4-Chlorotoluene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
4-Methyl-2-Pentanone	ND (0.0250)		1	07/17/12 15:43	CVG0122	CG21716
Acetone	ND (0.0100)		1	07/17/12 15:43	CVG0122	CG21716
Benzene	ND (0.0010)	0.14	1	07/17/12 15:43	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071112

Date Sampled: 07/11/12 10:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-13

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
Bromochloromethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Bromodichloromethane	ND (0.0006)		1	07/17/12 15:43	CVG0122	CG21716
Bromoform	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Bromomethane	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
Carbon Disulfide	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Carbon Tetrachloride	ND (0.0010)	0.07	1	07/17/12 15:43	CVG0122	CG21716
Chlorobenzene	ND (0.0010)	3.2	1	07/17/12 15:43	CVG0122	CG21716
Chloroethane	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
Chloroform	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Chloromethane	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
cis-1,2-Dichloroethene	ND (0.0010)	2.4	1	07/17/12 15:43	CVG0122	CG21716
cis-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 15:43	CVG0122	CG21716
Dibromochloromethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Dibromomethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
Diethyl Ether	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Di-isopropyl ether	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Ethylbenzene	ND (0.0010)	1.6	1	07/17/12 15:43	CVG0122	CG21716
Hexachlorobutadiene	ND (0.0006)		1	07/17/12 15:43	CVG0122	CG21716
Hexachloroethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Isopropylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Methyl tert-Butyl Ether	ND (0.0010)	5	1	07/17/12 15:43	CVG0122	CG21716
Methylene Chloride	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
Naphthalene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
n-Butylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
n-Propylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
sec-Butylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Styrene	ND (0.0010)	2.2	1	07/17/12 15:43	CVG0122	CG21716
tert-Butylbenzene	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071112

Date Sampled: 07/11/12 10:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-13

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>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Tetrachloroethene	ND (0.0010)	0.15	1	07/17/12 15:43	CVG0122	CG21716
Tetrahydrofuran	ND (0.0050)		1	07/17/12 15:43	CVG0122	CG21716
Toluene	ND (0.0010)	1.7	1	07/17/12 15:43	CVG0122	CG21716
trans-1,2-Dichloroethene	ND (0.0010)	2.8	1	07/17/12 15:43	CVG0122	CG21716
trans-1,3-Dichloropropene	ND (0.0004)		1	07/17/12 15:43	CVG0122	CG21716
Trichloroethene	ND (0.0010)	0.54	1	07/17/12 15:43	CVG0122	CG21716
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Vinyl Acetate	ND (0.0050)		1	07/17/12 15:43	CVG0122	CG21716
Vinyl Chloride	ND (0.0010)	0.002	1	07/17/12 15:43	CVG0122	CG21716
Xylene O	ND (0.0010)		1	07/17/12 15:43	CVG0122	CG21716
Xylene P,M	ND (0.0020)		1	07/17/12 15:43	CVG0122	CG21716
Xylenes (Total)	ND (0.0030)		1	07/17/12 15:43		[CALC]
Trihalomethanes (Total)	ND (0.0036)			07/17/12 15:43		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	104 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	95 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD071112

Date Sampled: 07/11/12 10:00

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Acenaphthene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Acenaphthylene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Anthracene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Benzo(a)anthracene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Benzo(a)pyrene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Benzo(b)fluoranthene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Benzo(g,h,i)perylene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Benzo(k)fluoranthene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Chrysene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Fluoranthene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Fluorene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Naphthalene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Phenanthrene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221
Pyrene	ND (0.0002)		1	07/13/12 22:53	CVG0089	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	47 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	47 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	46 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	62 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD071112
Date Sampled: 07/11/12 10:00
Percent Solids: N/A

ESS Laboratory Work Order: 1207134
ESS Laboratory Sample ID: 1207134-13
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.0162 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TBLK071112

Date Sampled: 07/11/12 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-14

Sample Matrix: Aqueous

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,1,1-Trichloroethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,1,2,2-Tetrachloroethane	ND (0.0005)		1	07/14/12 20:17	CVG0102	CG21502
1,1,2-Trichloroethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,1-Dichloroethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,1-Dichloroethene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,1-Dichloropropene	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2,3-Trichloropropane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2-Dibromo-3-Chloropropane	ND (0.0050)		1	07/14/12 20:17	CVG0102	CG21502
1,2-Dibromoethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2-Dichlorobenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2-Dichloroethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,2-Dichloropropane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,3-Dichlorobenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,3-Dichloropropane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,4-Dichlorobenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
1,4-Dioxane - Screen	ND (0.500)		1	07/14/12 20:17	CVG0102	CG21502
1-Chlorohexane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
2,2-Dichloropropane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
2-Butanone	ND (0.0100)		1	07/14/12 20:17	CVG0102	CG21502
2-Chlorotoluene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
2-Hexanone	ND (0.0100)		1	07/14/12 20:17	CVG0102	CG21502
4-Chlorotoluene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
4-Isopropyltoluene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
4-Methyl-2-Pentanone	ND (0.0250)		1	07/14/12 20:17	CVG0102	CG21502
Acetone	ND (0.0100)		1	07/14/12 20:17	CVG0102	CG21502
Benzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TBLK071112

Date Sampled: 07/11/12 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-14

Sample Matrix: Aqueous

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
Bromochloromethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Bromodichloromethane	ND (0.0006)		1	07/14/12 20:17	CVG0102	CG21502
Bromoform	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Bromomethane	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
Carbon Disulfide	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Carbon Tetrachloride	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Chlorobenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Chloroethane	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
Chloroform	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Chloromethane	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
cis-1,2-Dichloroethene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
cis-1,3-Dichloropropene	ND (0.0004)		1	07/14/12 20:17	CVG0102	CG21502
Dibromochloromethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Dibromomethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Dichlorodifluoromethane	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
Diethyl Ether	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Di-isopropyl ether	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Ethylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Hexachlorobutadiene	ND (0.0006)		1	07/14/12 20:17	CVG0102	CG21502
Hexachloroethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Isopropylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Methyl tert-Butyl Ether	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Methylene Chloride	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502
Naphthalene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
n-Butylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
n-Propylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
sec-Butylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Styrene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
tert-Butylbenzene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TBLK071112

Date Sampled: 07/11/12 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1207134

ESS Laboratory Sample ID: 1207134-14

Sample Matrix: Aqueous

Units: mg/L

Analyst: VAC

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tertiary-amyl methyl ether	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Tetrachloroethene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Tetrahydrofuran	ND (0.0050)		1	07/14/12 20:17	CVG0102	CG21502
Toluene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
trans-1,2-Dichloroethene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
trans-1,3-Dichloropropene	ND (0.0004)		1	07/14/12 20:17	CVG0102	CG21502
Trichloroethene	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Trichlorofluoromethane	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Vinyl Acetate	ND (0.0050)		1	07/14/12 20:17	CVG0102	CG21502
Vinyl Chloride	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Xylene O	ND (0.0010)		1	07/14/12 20:17	CVG0102	CG21502
Xylene P,M	ND (0.0020)		1	07/14/12 20:17	CVG0102	CG21502

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	100 %		70-130
Surrogate: 4-Bromofluorobenzene	105 %		70-130
Surrogate: Dibromofluoromethane	93 %		70-130
Surrogate: Toluene-d8	98 %		70-130



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CG21203 - 3510C

Blank

Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							

<i>Surrogate: O-Terphenyl</i>	<i>0.116</i>		mg/L	<i>0.1000</i>		<i>116</i>	<i>40-140</i>			

LCS

Decane (C10)	0.032	0.005	mg/L	0.05000		64	40-140			
Docosane (C22)	0.045	0.005	mg/L	0.05000		89	40-140			
Dodecane (C12)	0.037	0.005	mg/L	0.05000		74	40-140			
Eicosane (C20)	0.044	0.005	mg/L	0.05000		88	40-140			
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		93	40-140			
Hexadecane (C16)	0.043	0.005	mg/L	0.05000		86	40-140			
Nonadecane (C19)	0.038	0.005	mg/L	0.05000		76	40-140			
Nonane (C9)	0.025	0.005	mg/L	0.05000		49	30-140			
Octacosane (C28)	0.048	0.005	mg/L	0.05000		97	40-140			
Octadecane (C18)	0.044	0.005	mg/L	0.05000		88	40-140			
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		91	40-140			
Tetradecane (C14)	0.041	0.005	mg/L	0.05000		82	40-140			
Triacontane (C30)	0.052	0.005	mg/L	0.05000		103	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>0.105</i>		mg/L	<i>0.1000</i>		<i>105</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	0.029	0.005	mg/L	0.05000		58	40-140	10	25	
Docosane (C22)	0.045	0.005	mg/L	0.05000		90	40-140	0.4	25	
Dodecane (C12)	0.033	0.005	mg/L	0.05000		65	40-140	14	25	
Eicosane (C20)	0.044	0.005	mg/L	0.05000		88	40-140	0.02	25	
Hexacosane (C26)	0.047	0.005	mg/L	0.05000		94	40-140	1	25	
Hexadecane (C16)	0.039	0.005	mg/L	0.05000		78	40-140	10	25	
Nonadecane (C19)	0.038	0.005	mg/L	0.05000		75	40-140	1	25	
Nonane (C9)	0.023	0.005	mg/L	0.05000		45	30-140	9	25	
Octacosane (C28)	0.049	0.005	mg/L	0.05000		98	40-140	1	25	
Octadecane (C18)	0.043	0.005	mg/L	0.05000		86	40-140	3	25	
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		92	40-140	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CG21203 - 3510C										
Tetradecane (C14)	0.036	0.005	mg/L	0.05000		73	40-140	12	25	
Triacotane (C30)	0.052	0.005	mg/L	0.05000		104	40-140	1	25	
Surrogate: O-Terphenyl	0.100		mg/L	0.1000		100	40-140			
Batch CG21720 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacotane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	0.111		mg/L	0.1000		111	40-140			
LCS										
Decane (C10)	0.035	0.005	mg/L	0.05000		70	40-140			
Docosane (C22)	0.050	0.005	mg/L	0.05000		100	40-140			
Dodecane (C12)	0.040	0.005	mg/L	0.05000		80	40-140			
Eicosane (C20)	0.049	0.005	mg/L	0.05000		98	40-140			
Hexacosane (C26)	0.049	0.005	mg/L	0.05000		97	40-140			
Hexadecane (C16)	0.046	0.005	mg/L	0.05000		92	40-140			
Nonadecane (C19)	0.042	0.005	mg/L	0.05000		84	40-140			
Nonane (C9)	0.026	0.005	mg/L	0.05000		52	30-140			
Octacosane (C28)	0.049	0.005	mg/L	0.05000		99	40-140			
Octadecane (C18)	0.048	0.005	mg/L	0.05000		96	40-140			
Tetracosane (C24)	0.050	0.005	mg/L	0.05000		100	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		87	40-140			
Triacotane (C30)	0.051	0.005	mg/L	0.05000		103	40-140			
Surrogate: O-Terphenyl	0.111		mg/L	0.1000		111	40-140			
LCS Dup										
Decane (C10)	0.034	0.005	mg/L	0.05000		68	40-140	3	25	
Docosane (C22)	0.050	0.005	mg/L	0.05000		99	40-140	0.2	25	
Dodecane (C12)	0.040	0.005	mg/L	0.05000		80	40-140	0.07	25	
Eicosane (C20)	0.049	0.005	mg/L	0.05000		99	40-140	0.7	25	
Hexacosane (C26)	0.049	0.005	mg/L	0.05000		99	40-140	1	25	
Hexadecane (C16)	0.047	0.005	mg/L	0.05000		94	40-140	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CG21720 - 3510C

Nonadecane (C19)	0.047	0.005	mg/L	0.05000		94	40-140	11	25	
Nonane (C9)	0.024	0.005	mg/L	0.05000		47	30-140	10	25	
Octacosane (C28)	0.049	0.005	mg/L	0.05000		99	40-140	0.4	25	
Octadecane (C18)	0.049	0.005	mg/L	0.05000		98	40-140	2	25	
Tetracosane (C24)	0.050	0.005	mg/L	0.05000		101	40-140	0.6	25	
Tetradecane (C14)	0.045	0.005	mg/L	0.05000		90	40-140	3	25	
Triacontane (C30)	0.052	0.005	mg/L	0.05000		103	40-140	0.8	25	

Surrogate: O-Terphenyl 0.112 mg/L 0.1000 112 40-140

8260B Volatile Organic Compounds

Batch CG21502 - 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21502 - 50308

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							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0244		mg/L	0.02500		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0258		mg/L	0.02500		103	70-130			
Surrogate: Dibromofluoromethane	0.0233		mg/L	0.02500		93	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21502 - 5030B

<i>Surrogate: Toluene-d8</i>	<i>0.0242</i>		mg/L	<i>0.02500</i>		<i>97</i>	<i>70-130</i>			
LCS										
1,1,1,2-Tetrachloroethane	9.03		ug/L	10.00		90	70-130			
1,1,1-Trichloroethane	10.9		ug/L	10.00		109	70-130			
1,1,2,2-Tetrachloroethane	8.61		ug/L	10.00		86	70-130			
1,1,2-Trichloroethane	8.93		ug/L	10.00		89	70-130			
1,1-Dichloroethane	9.02		ug/L	10.00		90	70-130			
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130			
1,1-Dichloropropene	9.90		ug/L	10.00		99	70-130			
1,2,3-Trichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,2,3-Trichloropropane	8.46		ug/L	10.00		85	70-130			
1,2,4-Trichlorobenzene	12.3		ug/L	10.00		123	70-130			
1,2,4-Trimethylbenzene	9.91		ug/L	10.00		99	70-130			
1,2-Dibromo-3-Chloropropane	8.81		ug/L	10.00		88	70-130			
1,2-Dibromoethane	9.22		ug/L	10.00		92	70-130			
1,2-Dichlorobenzene	8.53		ug/L	10.00		85	70-130			
1,2-Dichloroethane	10.6		ug/L	10.00		106	70-130			
1,2-Dichloropropane	8.32		ug/L	10.00		83	70-130			
1,3,5-Trimethylbenzene	10.2		ug/L	10.00		102	70-130			
1,3-Dichlorobenzene	8.83		ug/L	10.00		88	70-130			
1,3-Dichloropropane	9.01		ug/L	10.00		90	70-130			
1,4-Dichlorobenzene	9.24		ug/L	10.00		92	70-130			
1,4-Dioxane - Screen	332		ug/L	200.0		166	0-332			
1-Chlorohexane	11.6		ug/L	10.00		116	70-130			
2,2-Dichloropropane	10.3		ug/L	10.00		103	70-130			
2-Butanone	51.8		ug/L	50.00		104	70-130			
2-Chlorotoluene	8.92		ug/L	10.00		89	70-130			
2-Hexanone	43.8		ug/L	50.00		88	70-130			
4-Chlorotoluene	8.85		ug/L	10.00		88	70-130			
4-Isopropyltoluene	9.75		ug/L	10.00		98	70-130			
4-Methyl-2-Pentanone	45.7		ug/L	50.00		91	70-130			
Acetone	51.0		ug/L	50.00		102	70-130			
Benzene	8.46		ug/L	10.00		85	70-130			
Bromobenzene	9.05		ug/L	10.00		90	70-130			
Bromochloromethane	9.25		ug/L	10.00		92	70-130			
Bromodichloromethane	10.2		ug/L	10.00		102	70-130			
Bromoform	10.2		ug/L	10.00		102	70-130			
Bromomethane	10.6		ug/L	10.00		106	70-130			
Carbon Disulfide	9.06		ug/L	10.00		91	70-130			
Carbon Tetrachloride	10.8		ug/L	10.00		108	70-130			
Chlorobenzene	8.58		ug/L	10.00		86	70-130			
Chloroethane	10.4		ug/L	10.00		104	70-130			
Chloroform	9.17		ug/L	10.00		92	70-130			
Chloromethane	8.64		ug/L	10.00		86	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21502 - 5030B

cis-1,2-Dichloroethene	9.94		ug/L	10.00		99	70-130			
cis-1,3-Dichloropropene	8.85		ug/L	10.00		88	70-130			
Dibromochloromethane	9.96		ug/L	10.00		100	70-130			
Dibromomethane	8.97		ug/L	10.00		90	70-130			
Dichlorodifluoromethane	9.35		ug/L	10.00		94	70-130			
Diethyl Ether	9.65		ug/L	10.00		96	70-130			
Di-isopropyl ether	9.04		ug/L	10.00		90	70-130			
Ethyl tertiary-butyl ether	9.67		ug/L	10.00		97	70-130			
Ethylbenzene	9.89		ug/L	10.00		99	70-130			
Hexachlorobutadiene	12.0		ug/L	10.00		120	70-130			
Hexachloroethane	10.0		ug/L	10.00		100	70-130			
Isopropylbenzene	9.05		ug/L	10.00		90	70-130			
Methyl tert-Butyl Ether	9.99		ug/L	10.00		100	70-130			
Methylene Chloride	10.0		ug/L	10.00		100	70-130			
Naphthalene	12.5		ug/L	10.00		125	70-130			
n-Butylbenzene	11.0		ug/L	10.00		110	70-130			
n-Propylbenzene	9.53		ug/L	10.00		95	70-130			
sec-Butylbenzene	9.87		ug/L	10.00		99	70-130			
Styrene	9.22		ug/L	10.00		92	70-130			
tert-Butylbenzene	9.76		ug/L	10.00		98	70-130			
Tertiary-amyl methyl ether	9.24		ug/L	10.00		92	70-130			
Tetrachloroethene	9.83		ug/L	10.00		98	70-130			
Tetrahydrofuran	9.90		ug/L	10.00		99	70-130			
Toluene	9.14		ug/L	10.00		91	70-130			
trans-1,2-Dichloroethene	9.80		ug/L	10.00		98	70-130			
trans-1,3-Dichloropropene	8.77		ug/L	10.00		88	70-130			
Trichloroethene	9.65		ug/L	10.00		96	70-130			
Trichlorofluoromethane	10.9		ug/L	10.00		109	70-130			
Vinyl Acetate	10.7		ug/L	10.00		107	70-130			
Vinyl Chloride	10.4		ug/L	10.00		104	70-130			
Xylene O	8.85		ug/L	10.00		88	70-130			
Xylene P,M	19.1		ug/L	20.00		95	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0282		mg/L	0.02500		113	70-130			
Surrogate: 4-Bromofluorobenzene	0.0261		mg/L	0.02500		104	70-130			
Surrogate: Dibromofluoromethane	0.0253		mg/L	0.02500		101	70-130			
Surrogate: Toluene-d8	0.0258		mg/L	0.02500		103	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.29		ug/L	10.00		93	70-130	3	25	
1,1,1-Trichloroethane	11.0		ug/L	10.00		110	70-130	0.2	25	
1,1,2,2-Tetrachloroethane	8.44		ug/L	10.00		84	70-130	2	25	
1,1,2-Trichloroethane	8.90		ug/L	10.00		89	70-130	0.3	25	
1,1-Dichloroethane	8.94		ug/L	10.00		89	70-130	0.9	25	
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130	2	25	
1,1-Dichloropropene	9.05		ug/L	10.00		90	70-130	9	25	
1,2,3-Trichlorobenzene	9.98		ug/L	10.00		100	70-130	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21502 - 5030B

1,2,3-Trichloropropane	8.13		ug/L	10.00		81	70-130	4	25	
1,2,4-Trichlorobenzene	11.2		ug/L	10.00		112	70-130	9	25	
1,2,4-Trimethylbenzene	10.1		ug/L	10.00		101	70-130	2	25	
1,2-Dibromo-3-Chloropropane	8.13		ug/L	10.00		81	70-130	8	25	
1,2-Dibromoethane	9.39		ug/L	10.00		94	70-130	2	25	
1,2-Dichlorobenzene	8.34		ug/L	10.00		83	70-130	2	25	
1,2-Dichloroethane	10.8		ug/L	10.00		108	70-130	2	25	
1,2-Dichloropropane	8.33		ug/L	10.00		83	70-130	0.1	25	
1,3,5-Trimethylbenzene	9.99		ug/L	10.00		100	70-130	2	25	
1,3-Dichlorobenzene	8.60		ug/L	10.00		86	70-130	3	25	
1,3-Dichloropropane	8.99		ug/L	10.00		90	70-130	0.2	25	
1,4-Dichlorobenzene	9.27		ug/L	10.00		93	70-130	0.3	25	
1,4-Dioxane - Screen	242		ug/L	200.0		121	0-332	32	200	
1-Chlorohexane	11.8		ug/L	10.00		118	70-130	2	25	
2,2-Dichloropropane	10.4		ug/L	10.00		104	70-130	0.7	25	
2-Butanone	51.4		ug/L	50.00		103	70-130	0.8	25	
2-Chlorotoluene	8.37		ug/L	10.00		84	70-130	6	25	
2-Hexanone	44.1		ug/L	50.00		88	70-130	0.6	25	
4-Chlorotoluene	8.72		ug/L	10.00		87	70-130	1	25	
4-Isopropyltoluene	9.32		ug/L	10.00		93	70-130	5	25	
4-Methyl-2-Pentanone	45.7		ug/L	50.00		91	70-130	0.07	25	
Acetone	53.4		ug/L	50.00		107	70-130	5	25	
Benzene	8.43		ug/L	10.00		84	70-130	0.4	25	
Bromobenzene	8.80		ug/L	10.00		88	70-130	3	25	
Bromochloromethane	9.08		ug/L	10.00		91	70-130	2	25	
Bromodichloromethane	10.0		ug/L	10.00		100	70-130	2	25	
Bromoform	10.3		ug/L	10.00		103	70-130	0.3	25	
Bromomethane	10.4		ug/L	10.00		104	70-130	2	25	
Carbon Disulfide	9.14		ug/L	10.00		91	70-130	0.9	25	
Carbon Tetrachloride	10.4		ug/L	10.00		104	70-130	3	25	
Chlorobenzene	8.58		ug/L	10.00		86	70-130	0	25	
Chloroethane	10.4		ug/L	10.00		104	70-130	0.2	25	
Chloroform	9.29		ug/L	10.00		93	70-130	1	25	
Chloromethane	8.70		ug/L	10.00		87	70-130	0.7	25	
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	2	25	
cis-1,3-Dichloropropene	8.84		ug/L	10.00		88	70-130	0.1	25	
Dibromochloromethane	9.94		ug/L	10.00		99	70-130	0.2	25	
Dibromomethane	8.96		ug/L	10.00		90	70-130	0.1	25	
Dichlorodifluoromethane	9.19		ug/L	10.00		92	70-130	2	25	
Diethyl Ether	9.64		ug/L	10.00		96	70-130	0.1	25	
Di-isopropyl ether	9.20		ug/L	10.00		92	70-130	2	25	
Ethyl tertiary-butyl ether	9.68		ug/L	10.00		97	70-130	0.1	25	
Ethylbenzene	10.1		ug/L	10.00		101	70-130	2	25	
Hexachlorobutadiene	10.8		ug/L	10.00		108	70-130	10	25	
Hexachloroethane	9.78		ug/L	10.00		98	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21502 - 50308

Isopropylbenzene	9.04		ug/L	10.00		90	70-130	0.1	25	
Methyl tert-Butyl Ether	9.91		ug/L	10.00		99	70-130	0.8	25	
Methylene Chloride	10.2		ug/L	10.00		102	70-130	1	25	
Naphthalene	10.7		ug/L	10.00		107	70-130	15	25	
n-Butylbenzene	11.0		ug/L	10.00		110	70-130	0.7	25	
n-Propylbenzene	9.71		ug/L	10.00		97	70-130	2	25	
sec-Butylbenzene	9.58		ug/L	10.00		96	70-130	3	25	
Styrene	9.19		ug/L	10.00		92	70-130	0.3	25	
tert-Butylbenzene	9.52		ug/L	10.00		95	70-130	2	25	
Tertiary-amyl methyl ether	9.20		ug/L	10.00		92	70-130	0.4	25	
Tetrachloroethene	10.1		ug/L	10.00		101	70-130	3	25	
Tetrahydrofuran	9.59		ug/L	10.00		96	70-130	3	25	
Toluene	9.15		ug/L	10.00		92	70-130	0.1	25	
trans-1,2-Dichloroethene	9.83		ug/L	10.00		98	70-130	0.3	25	
trans-1,3-Dichloropropene	8.71		ug/L	10.00		87	70-130	0.7	25	
Trichloroethene	9.78		ug/L	10.00		98	70-130	1	25	
Trichlorofluoromethane	11.4		ug/L	10.00		114	70-130	4	25	
Vinyl Acetate	10.7		ug/L	10.00		107	70-130	0.6	25	
Vinyl Chloride	10.2		ug/L	10.00		102	70-130	1	25	
Xylene O	9.02		ug/L	10.00		90	70-130	2	25	
Xylene P,M	19.2		ug/L	20.00		96	70-130	0.6	25	
Surrogate: 1,2-Dichloroethane-d4	0.0278		mg/L	0.02500		111	70-130			
Surrogate: 4-Bromofluorobenzene	0.0256		mg/L	0.02500		102	70-130			
Surrogate: Dibromofluoromethane	0.0246		mg/L	0.02500		98	70-130			
Surrogate: Toluene-d8	0.0258		mg/L	0.02500		103	70-130			

Batch CG21503 - 50308

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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

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
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



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 50308

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							
Surrogate: 1,2-Dichloroethane-d4	0.0245		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0257		mg/L	0.02500		103	70-130			
Surrogate: Dibromofluoromethane	0.0228		mg/L	0.02500		91	70-130			
Surrogate: Toluene-d8	0.0244		mg/L	0.02500		98	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.43		ug/L	10.00		94	70-130			
1,1,1-Trichloroethane	11.1		ug/L	10.00		111	70-130			
1,1,2,2-Tetrachloroethane	8.69		ug/L	10.00		87	70-130			
1,1,2-Trichloroethane	9.17		ug/L	10.00		92	70-130			
1,1-Dichloroethane	9.01		ug/L	10.00		90	70-130			
1,1-Dichloroethene	10.5		ug/L	10.00		105	70-130			
1,1-Dichloropropene	9.96		ug/L	10.00		100	70-130			
1,2,3-Trichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,2,3-Trichloropropane	8.43		ug/L	10.00		84	70-130			
1,2,4-Trichlorobenzene	11.8		ug/L	10.00		118	70-130			
1,2,4-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dibromo-3-Chloropropane	8.79		ug/L	10.00		88	70-130			
1,2-Dibromoethane	9.44		ug/L	10.00		94	70-130			
1,2-Dichlorobenzene	8.49		ug/L	10.00		85	70-130			
1,2-Dichloroethane	11.1		ug/L	10.00		111	70-130			
1,2-Dichloropropane	8.32		ug/L	10.00		83	70-130			
1,3,5-Trimethylbenzene	10.4		ug/L	10.00		104	70-130			
1,3-Dichlorobenzene	8.80		ug/L	10.00		88	70-130			
1,3-Dichloropropane	9.28		ug/L	10.00		93	70-130			
1,4-Dichlorobenzene	9.29		ug/L	10.00		93	70-130			
1,4-Dioxane - Screen	349		ug/L	200.0		174	0-332			
1-Chlorohexane	11.7		ug/L	10.00		117	70-130			
2,2-Dichloropropane	10.7		ug/L	10.00		107	70-130			
2-Butanone	51.6		ug/L	50.00		103	70-130			
2-Chlorotoluene	9.26		ug/L	10.00		93	70-130			
2-Hexanone	44.9		ug/L	50.00		90	70-130			
4-Chlorotoluene	8.99		ug/L	10.00		90	70-130			
4-Isopropyltoluene	9.74		ug/L	10.00		97	70-130			
4-Methyl-2-Pentanone	45.7		ug/L	50.00		91	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

Acetone	52.1		ug/L	50.00		104	70-130			
Benzene	8.41		ug/L	10.00		84	70-130			
Bromobenzene	9.07		ug/L	10.00		91	70-130			
Bromochloromethane	9.18		ug/L	10.00		92	70-130			
Bromodichloromethane	10.5		ug/L	10.00		105	70-130			
Bromoform	10.5		ug/L	10.00		105	70-130			
Bromomethane	9.53		ug/L	10.00		95	70-130			
Carbon Disulfide	8.81		ug/L	10.00		88	70-130			
Carbon Tetrachloride	11.3		ug/L	10.00		113	70-130			
Chlorobenzene	8.80		ug/L	10.00		88	70-130			
Chloroethane	9.93		ug/L	10.00		99	70-130			
Chloroform	9.27		ug/L	10.00		93	70-130			
Chloromethane	8.33		ug/L	10.00		83	70-130			
cis-1,2-Dichloroethene	9.93		ug/L	10.00		99	70-130			
cis-1,3-Dichloropropene	9.00		ug/L	10.00		90	70-130			
Dibromochloromethane	10.3		ug/L	10.00		103	70-130			
Dibromomethane	9.30		ug/L	10.00		93	70-130			
Dichlorodifluoromethane	9.56		ug/L	10.00		96	70-130			
Diethyl Ether	9.73		ug/L	10.00		97	70-130			
Di-isopropyl ether	9.11		ug/L	10.00		91	70-130			
Ethyl tertiary-butyl ether	9.86		ug/L	10.00		99	70-130			
Ethylbenzene	10.1		ug/L	10.00		101	70-130			
Hexachlorobutadiene	12.0		ug/L	10.00		120	70-130			
Hexachloroethane	10.4		ug/L	10.00		104	70-130			
Isopropylbenzene	9.10		ug/L	10.00		91	70-130			
Methyl tert-Butyl Ether	10.1		ug/L	10.00		101	70-130			
Methylene Chloride	10.2		ug/L	10.00		102	70-130			
Naphthalene	12.0		ug/L	10.00		120	70-130			
n-Butylbenzene	11.2		ug/L	10.00		112	70-130			
n-Propylbenzene	9.20		ug/L	10.00		92	70-130			
sec-Butylbenzene	9.91		ug/L	10.00		99	70-130			
Styrene	9.35		ug/L	10.00		94	70-130			
tert-Butylbenzene	9.82		ug/L	10.00		98	70-130			
Tertiary-amyl methyl ether	9.62		ug/L	10.00		96	70-130			
Tetrachloroethene	10.1		ug/L	10.00		101	70-130			
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130			
Toluene	9.14		ug/L	10.00		91	70-130			
trans-1,2-Dichloroethene	9.96		ug/L	10.00		100	70-130			
trans-1,3-Dichloropropene	9.01		ug/L	10.00		90	70-130			
Trichloroethene	9.98		ug/L	10.00		100	70-130			
Trichlorofluoromethane	11.5		ug/L	10.00		115	70-130			
Vinyl Acetate	11.4		ug/L	10.00		114	70-130			
Vinyl Chloride	10.0		ug/L	10.00		100	70-130			
Xylene O	9.21		ug/L	10.00		92	70-130			
Xylene P,M	19.3		ug/L	20.00		97	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

Surrogate: 1,2-Dichloroethane-d4	0.0292		mg/L	0.02500		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0264		mg/L	0.02500		106	70-130			
Surrogate: Dibromofluoromethane	0.0251		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			
LCS Dup										
1,1,1,2-Tetrachloroethane	8.88		ug/L	10.00		89	70-130	6	25	
1,1,1-Trichloroethane	11.0		ug/L	10.00		110	70-130	2	25	
1,1,2,2-Tetrachloroethane	8.52		ug/L	10.00		85	70-130	2	25	
1,1,2-Trichloroethane	8.84		ug/L	10.00		88	70-130	4	25	
1,1-Dichloroethane	8.85		ug/L	10.00		88	70-130	2	25	
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130	2	25	
1,1-Dichloropropene	9.28		ug/L	10.00		93	70-130	7	25	
1,2,3-Trichlorobenzene	9.75		ug/L	10.00		98	70-130	11	25	
1,2,3-Trichloropropane	8.38		ug/L	10.00		84	70-130	0.6	25	
1,2,4-Trichlorobenzene	10.9		ug/L	10.00		109	70-130	8	25	
1,2,4-Trimethylbenzene	9.91		ug/L	10.00		99	70-130	2	25	
1,2-Dibromo-3-Chloropropane	7.98		ug/L	10.00		80	70-130	10	25	
1,2-Dibromoethane	9.14		ug/L	10.00		91	70-130	3	25	
1,2-Dichlorobenzene	8.34		ug/L	10.00		83	70-130	2	25	
1,2-Dichloroethane	11.2		ug/L	10.00		112	70-130	0.9	25	
1,2-Dichloropropane	8.52		ug/L	10.00		85	70-130	2	25	
1,3,5-Trimethylbenzene	9.99		ug/L	10.00		100	70-130	4	25	
1,3-Dichlorobenzene	8.55		ug/L	10.00		86	70-130	3	25	
1,3-Dichloropropane	8.94		ug/L	10.00		89	70-130	4	25	
1,4-Dichlorobenzene	8.84		ug/L	10.00		88	70-130	5	25	
1,4-Dioxane - Screen	218		ug/L	200.0		109	0-332	46	200	
1-Chlorohexane	11.0		ug/L	10.00		110	70-130	6	25	
2,2-Dichloropropane	10.6		ug/L	10.00		106	70-130	0.6	25	
2-Butanone	49.4		ug/L	50.00		99	70-130	4	25	
2-Chlorotoluene	9.04		ug/L	10.00		90	70-130	2	25	
2-Hexanone	42.0		ug/L	50.00		84	70-130	6	25	
4-Chlorotoluene	8.73		ug/L	10.00		87	70-130	3	25	
4-Isopropyltoluene	9.22		ug/L	10.00		92	70-130	5	25	
4-Methyl-2-Pentanone	45.3		ug/L	50.00		91	70-130	0.8	25	
Acetone	50.4		ug/L	50.00		101	70-130	3	25	
Benzene	8.53		ug/L	10.00		85	70-130	1	25	
Bromobenzene	9.03		ug/L	10.00		90	70-130	0.4	25	
Bromochloromethane	9.35		ug/L	10.00		94	70-130	2	25	
Bromodichloromethane	10.3		ug/L	10.00		103	70-130	1	25	
Bromoform	10.2		ug/L	10.00		102	70-130	3	25	
Bromomethane	9.15		ug/L	10.00		92	70-130	4	25	
Carbon Disulfide	8.89		ug/L	10.00		89	70-130	0.9	25	
Carbon Tetrachloride	11.1		ug/L	10.00		111	70-130	2	25	
Chlorobenzene	8.53		ug/L	10.00		85	70-130	3	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21503 - 5030B

Chloroethane	9.85		ug/L	10.00		98	70-130	0.8	25	
Chloroform	9.10		ug/L	10.00		91	70-130	2	25	
Chloromethane	8.04		ug/L	10.00		80	70-130	4	25	
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130	0.7	25	
cis-1,3-Dichloropropene	9.05		ug/L	10.00		90	70-130	0.6	25	
Dibromochloromethane	9.90		ug/L	10.00		99	70-130	4	25	
Dibromomethane	9.13		ug/L	10.00		91	70-130	2	25	
Dichlorodifluoromethane	9.33		ug/L	10.00		93	70-130	2	25	
Diethyl Ether	9.26		ug/L	10.00		93	70-130	5	25	
Di-isopropyl ether	9.18		ug/L	10.00		92	70-130	0.8	25	
Ethyl tertiary-butyl ether	9.57		ug/L	10.00		96	70-130	3	25	
Ethylbenzene	9.82		ug/L	10.00		98	70-130	3	25	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	14	25	
Hexachloroethane	10.1		ug/L	10.00		101	70-130	3	25	
Isopropylbenzene	8.90		ug/L	10.00		89	70-130	2	25	
Methyl tert-Butyl Ether	9.88		ug/L	10.00		99	70-130	2	25	
Methylene Chloride	10.0		ug/L	10.00		100	70-130	2	25	
Naphthalene	10.6		ug/L	10.00		106	70-130	13	25	
n-Butylbenzene	10.4		ug/L	10.00		104	70-130	8	25	
n-Propylbenzene	9.02		ug/L	10.00		90	70-130	2	25	
sec-Butylbenzene	9.43		ug/L	10.00		94	70-130	5	25	
Styrene	9.04		ug/L	10.00		90	70-130	3	25	
tert-Butylbenzene	9.53		ug/L	10.00		95	70-130	3	25	
Tertiary-amyl methyl ether	9.49		ug/L	10.00		95	70-130	1	25	
Tetrachloroethene	9.50		ug/L	10.00		95	70-130	7	25	
Tetrahydrofuran	10.2		ug/L	10.00		102	70-130	1	25	
Toluene	9.09		ug/L	10.00		91	70-130	0.5	25	
trans-1,2-Dichloroethene	9.88		ug/L	10.00		99	70-130	0.8	25	
trans-1,3-Dichloropropene	8.96		ug/L	10.00		90	70-130	0.6	25	
Trichloroethene	9.65		ug/L	10.00		96	70-130	3	25	
Trichlorofluoromethane	11.4		ug/L	10.00		114	70-130	0.7	25	
Vinyl Acetate	10.6		ug/L	10.00		106	70-130	8	25	
Vinyl Chloride	9.88		ug/L	10.00		99	70-130	2	25	
Xylene O	8.81		ug/L	10.00		88	70-130	4	25	
Xylene P,M	18.7		ug/L	20.00		94	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	0.0292		mg/L	0.02500		117	70-130			
Surrogate: 4-Bromofluorobenzene	0.0262		mg/L	0.02500		105	70-130			
Surrogate: Dibromofluoromethane	0.0254		mg/L	0.02500		102	70-130			
Surrogate: Toluene-d8	0.0257		mg/L	0.02500		103	70-130			

Batch CG21716 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 50308

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
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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

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							
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	0.0232		mg/L	0.02500		93	70-130			
Surrogate: Toluene-d8	0.0243		mg/L	0.02500		97	70-130			

LCS

1,1,1,2-Tetrachloroethane	8.83		ug/L	10.00		88	70-130			
1,1,1-Trichloroethane	11.0		ug/L	10.00		110	70-130			
1,1,2,2-Tetrachloroethane	8.40		ug/L	10.00		84	70-130			
1,1,2-Trichloroethane	8.70		ug/L	10.00		87	70-130			
1,1-Dichloroethane	8.71		ug/L	10.00		87	70-130			
1,1-Dichloroethene	10.0		ug/L	10.00		100	70-130			
1,1-Dichloropropene	9.08		ug/L	10.00		91	70-130			
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichloropropane	8.17		ug/L	10.00		82	70-130			
1,2,4-Trichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,2,4-Trimethylbenzene	9.67		ug/L	10.00		97	70-130			
1,2-Dibromo-3-Chloropropane	8.66		ug/L	10.00		87	70-130			
1,2-Dibromoethane	8.97		ug/L	10.00		90	70-130			
1,2-Dichlorobenzene	8.48		ug/L	10.00		85	70-130			
1,2-Dichloroethane	11.1		ug/L	10.00		111	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

1,2-Dichloropropane	8.21		ug/L	10.00		82	70-130			
1,3,5-Trimethylbenzene	9.90		ug/L	10.00		99	70-130			
1,3-Dichlorobenzene	8.18		ug/L	10.00		82	70-130			
1,3-Dichloropropane	8.69		ug/L	10.00		87	70-130			
1,4-Dichlorobenzene	8.87		ug/L	10.00		89	70-130			
1,4-Dioxane - Screen	304		ug/L	200.0		152	0-332			
1-Chlorohexane	11.2		ug/L	10.00		112	70-130			
2,2-Dichloropropane	11.0		ug/L	10.00		110	70-130			
2-Butanone	51.1		ug/L	50.00		102	70-130			
2-Chlorotoluene	8.22		ug/L	10.00		82	70-130			
2-Hexanone	42.5		ug/L	50.00		85	70-130			
4-Chlorotoluene	8.96		ug/L	10.00		90	70-130			
4-Isopropyltoluene	9.29		ug/L	10.00		93	70-130			
4-Methyl-2-Pentanone	43.3		ug/L	50.00		87	70-130			
Acetone	56.3		ug/L	50.00		113	70-130			
Benzene	8.20		ug/L	10.00		82	70-130			
Bromobenzene	8.92		ug/L	10.00		89	70-130			
Bromochloromethane	8.92		ug/L	10.00		89	70-130			
Bromodichloromethane	10.2		ug/L	10.00		102	70-130			
Bromoform	10.1		ug/L	10.00		101	70-130			
Bromomethane	10.4		ug/L	10.00		104	70-130			
Carbon Disulfide	8.90		ug/L	10.00		89	70-130			
Carbon Tetrachloride	10.9		ug/L	10.00		109	70-130			
Chlorobenzene	8.54		ug/L	10.00		85	70-130			
Chloroethane	9.99		ug/L	10.00		100	70-130			
Chloroform	9.09		ug/L	10.00		91	70-130			
Chloromethane	8.09		ug/L	10.00		81	70-130			
cis-1,2-Dichloroethene	9.66		ug/L	10.00		97	70-130			
cis-1,3-Dichloropropene	8.87		ug/L	10.00		89	70-130			
Dibromochloromethane	9.60		ug/L	10.00		96	70-130			
Dibromomethane	8.84		ug/L	10.00		88	70-130			
Dichlorodifluoromethane	9.24		ug/L	10.00		92	70-130			
Diethyl Ether	9.48		ug/L	10.00		95	70-130			
Di-isopropyl ether	8.87		ug/L	10.00		89	70-130			
Ethyl tertiary-butyl ether	9.53		ug/L	10.00		95	70-130			
Ethylbenzene	9.63		ug/L	10.00		96	70-130			
Hexachlorobutadiene	11.2		ug/L	10.00		112	70-130			
Hexachloroethane	10.2		ug/L	10.00		102	70-130			
Isopropylbenzene	8.84		ug/L	10.00		88	70-130			
Methyl tert-Butyl Ether	9.66		ug/L	10.00		97	70-130			
Methylene Chloride	9.89		ug/L	10.00		99	70-130			
Naphthalene	11.4		ug/L	10.00		114	70-130			
n-Butylbenzene	10.4		ug/L	10.00		104	70-130			
n-Propylbenzene	9.45		ug/L	10.00		94	70-130			
sec-Butylbenzene	9.38		ug/L	10.00		94	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

Styrene	8.83		ug/L	10.00		88	70-130			
tert-Butylbenzene	9.36		ug/L	10.00		94	70-130			
Tertiary-amyl methyl ether	9.16		ug/L	10.00		92	70-130			
Tetrachloroethene	9.44		ug/L	10.00		94	70-130			
Tetrahydrofuran	9.35		ug/L	10.00		94	70-130			
Toluene	8.98		ug/L	10.00		90	70-130			
trans-1,2-Dichloroethene	9.71		ug/L	10.00		97	70-130			
trans-1,3-Dichloropropene	9.13		ug/L	10.00		91	70-130			
Trichloroethene	9.52		ug/L	10.00		95	70-130			
Trichlorofluoromethane	11.2		ug/L	10.00		112	70-130			
Vinyl Acetate	10.4		ug/L	10.00		104	70-130			
Vinyl Chloride	9.93		ug/L	10.00		99	70-130			
Xylene O	8.68		ug/L	10.00		87	70-130			
Xylene P,M	18.2		ug/L	20.00		91	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0301		mg/L	0.02500		120	70-130			
Surrogate: 4-Bromofluorobenzene	0.0261		mg/L	0.02500		105	70-130			
Surrogate: Dibromofluoromethane	0.0254		mg/L	0.02500		102	70-130			
Surrogate: Toluene-d8	0.0259		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.86		ug/L	10.00		89	70-130	0.3	25	
1,1,1-Trichloroethane	11.1		ug/L	10.00		111	70-130	0.8	25	
1,1,2,2-Tetrachloroethane	8.07		ug/L	10.00		81	70-130	4	25	
1,1,2-Trichloroethane	8.53		ug/L	10.00		85	70-130	2	25	
1,1-Dichloroethane	8.50		ug/L	10.00		85	70-130	2	25	
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130	0.3	25	
1,1-Dichloropropene	9.96		ug/L	10.00		100	70-130	9	25	
1,2,3-Trichlorobenzene	9.60		ug/L	10.00		96	70-130	6	25	
1,2,3-Trichloropropane	8.26		ug/L	10.00		83	70-130	1	25	
1,2,4-Trichlorobenzene	10.8		ug/L	10.00		108	70-130	4	25	
1,2,4-Trimethylbenzene	9.30		ug/L	10.00		93	70-130	4	25	
1,2-Dibromo-3-Chloropropane	8.69		ug/L	10.00		87	70-130	0.3	25	
1,2-Dibromoethane	8.89		ug/L	10.00		89	70-130	0.9	25	
1,2-Dichlorobenzene	7.88		ug/L	10.00		79	70-130	7	25	
1,2-Dichloroethane	11.0		ug/L	10.00		110	70-130	1	25	
1,2-Dichloropropane	8.02		ug/L	10.00		80	70-130	2	25	
1,3,5-Trimethylbenzene	9.55		ug/L	10.00		96	70-130	4	25	
1,3-Dichlorobenzene	8.03		ug/L	10.00		80	70-130	2	25	
1,3-Dichloropropane	8.65		ug/L	10.00		86	70-130	0.5	25	
1,4-Dichlorobenzene	8.67		ug/L	10.00		87	70-130	2	25	
1,4-Dioxane - Screen	215		ug/L	200.0		108	0-332	34	200	
1-Chlorohexane	11.1		ug/L	10.00		111	70-130	1	25	
2,2-Dichloropropane	10.8		ug/L	10.00		108	70-130	2	25	
2-Butanone	48.3		ug/L	50.00		97	70-130	6	25	
2-Chlorotoluene	8.02		ug/L	10.00		80	70-130	2	25	
2-Hexanone	42.2		ug/L	50.00		84	70-130	0.9	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

4-Chlorotoluene	8.70		ug/L	10.00		87	70-130	3	25	
4-Isopropyltoluene	8.99		ug/L	10.00		90	70-130	3	25	
4-Methyl-2-Pentanone	43.0		ug/L	50.00		86	70-130	0.7	25	
Acetone	51.2		ug/L	50.00		102	70-130	10	25	
Benzene	8.23		ug/L	10.00		82	70-130	0.4	25	
Bromobenzene	8.48		ug/L	10.00		85	70-130	5	25	
Bromochloromethane	8.86		ug/L	10.00		89	70-130	0.7	25	
Bromodichloromethane	10.2		ug/L	10.00		102	70-130	0	25	
Bromoform	10.0		ug/L	10.00		100	70-130	0.7	25	
Bromomethane	10.7		ug/L	10.00		107	70-130	3	25	
Carbon Disulfide	8.80		ug/L	10.00		88	70-130	1	25	
Carbon Tetrachloride	11.4		ug/L	10.00		114	70-130	4	25	
Chlorobenzene	8.41		ug/L	10.00		84	70-130	2	25	
Chloroethane	9.79		ug/L	10.00		98	70-130	2	25	
Chloroform	9.17		ug/L	10.00		92	70-130	0.9	25	
Chloromethane	8.03		ug/L	10.00		80	70-130	0.7	25	
cis-1,2-Dichloroethene	9.56		ug/L	10.00		96	70-130	1	25	
cis-1,3-Dichloropropene	8.87		ug/L	10.00		89	70-130	0	25	
Dibromochloromethane	9.62		ug/L	10.00		96	70-130	0.2	25	
Dibromomethane	8.82		ug/L	10.00		88	70-130	0.2	25	
Dichlorodifluoromethane	9.00		ug/L	10.00		90	70-130	3	25	
Diethyl Ether	9.30		ug/L	10.00		93	70-130	2	25	
Di-isopropyl ether	8.74		ug/L	10.00		87	70-130	1	25	
Ethyl tertiary-butyl ether	9.58		ug/L	10.00		96	70-130	0.5	25	
Ethylbenzene	9.70		ug/L	10.00		97	70-130	0.7	25	
Hexachlorobutadiene	10.2		ug/L	10.00		102	70-130	10	25	
Hexachloroethane	9.62		ug/L	10.00		96	70-130	6	25	
Isopropylbenzene	8.53		ug/L	10.00		85	70-130	4	25	
Methyl tert-Butyl Ether	9.47		ug/L	10.00		95	70-130	2	25	
Methylene Chloride	9.55		ug/L	10.00		96	70-130	3	25	
Naphthalene	9.39		ug/L	10.00		94	70-130	19	25	
n-Butylbenzene	10.2		ug/L	10.00		102	70-130	3	25	
n-Propylbenzene	9.29		ug/L	10.00		93	70-130	2	25	
sec-Butylbenzene	8.86		ug/L	10.00		89	70-130	6	25	
Styrene	8.72		ug/L	10.00		87	70-130	1	25	
tert-Butylbenzene	9.13		ug/L	10.00		91	70-130	2	25	
Tertiary-amyl methyl ether	8.98		ug/L	10.00		90	70-130	2	25	
Tetrachloroethene	9.37		ug/L	10.00		94	70-130	0.7	25	
Tetrahydrofuran	10.1		ug/L	10.00		101	70-130	7	25	
Toluene	8.84		ug/L	10.00		88	70-130	2	25	
trans-1,2-Dichloroethene	9.37		ug/L	10.00		94	70-130	4	25	
trans-1,3-Dichloropropene	9.01		ug/L	10.00		90	70-130	1	25	
Trichloroethene	9.52		ug/L	10.00		95	70-130	0	25	
Trichlorofluoromethane	11.3		ug/L	10.00		113	70-130	1	25	
Vinyl Acetate	10.1		ug/L	10.00		101	70-130	3	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CG21716 - 5030B

Vinyl Chloride	9.85		ug/L	10.00		98	70-130	0.8	25	
Xylene O	8.68		ug/L	10.00		87	70-130	0	25	
Xylene P,M	17.8		ug/L	20.00		89	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	0.0296		mg/L	0.02500		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.0266		mg/L	0.02500		106	70-130			
Surrogate: Dibromofluoromethane	0.0251		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0260		mg/L	0.02500		104	70-130			

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21102 - 3510C

Blank

2-Methylnaphthalene	ND	0.002	mg/L							
Acenaphthene	ND	0.002	mg/L							
Acenaphthylene	ND	0.002	mg/L							
Anthracene	ND	0.002	mg/L							
Benzo(a)anthracene	ND	0.002	mg/L							
Benzo(a)pyrene	ND	0.002	mg/L							
Benzo(b)fluoranthene	ND	0.002	mg/L							
Benzo(g,h,i)perylene	ND	0.002	mg/L							
Benzo(k)fluoranthene	ND	0.002	mg/L							
Chrysene	ND	0.002	mg/L							
Dibenzo(a,h)Anthracene	ND	0.002	mg/L							
Fluoranthene	ND	0.002	mg/L							
Fluorene	ND	0.002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L							
Naphthalene	ND	0.002	mg/L							
Phenanthrene	ND	0.002	mg/L							
Pyrene	ND	0.002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.000328		mg/L	0.0006250		52	30-130			
Surrogate: 2-Fluorobiphenyl	0.000375		mg/L	0.0006250		60	30-130			
Surrogate: Nitrobenzene-d5	0.000405		mg/L	0.0006250		65	30-130			
Surrogate: p-Terphenyl-d14	0.000418		mg/L	0.0006250		67	30-130			

LCS

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140			
Anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Chrysene	ND	0.002	mg/L	0.0005000			40-140			
Dibenzo(a,h)Anthracene	0.0005	0.002	mg/L	0.0005000		104	40-140			
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21102 - 3510C

Fluorene	ND	0.002	mg/L	0.0005000			40-140			
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Naphthalene	ND	0.002	mg/L	0.0005000			40-140			
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140			
Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.000305		mg/L	0.0006250		49	30-130			
Surrogate: 2-Fluorobiphenyl	0.000358		mg/L	0.0006250		57	30-130			
Surrogate: Nitrobenzene-d5	0.000368		mg/L	0.0006250		59	30-130			
Surrogate: p-Terphenyl-d14	0.000422		mg/L	0.0006250		68	30-130			

LCS Dup

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Chrysene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Dibenzo(a,h)Anthracene	0.0006	0.002	mg/L	0.0005000		111	40-140	7	20	
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Fluorene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Naphthalene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.000292		mg/L	0.0006250		47	30-130			
Surrogate: 2-Fluorobiphenyl	0.000338		mg/L	0.0006250		54	30-130			
Surrogate: Nitrobenzene-d5	0.000370		mg/L	0.0006250		59	30-130			
Surrogate: p-Terphenyl-d14	0.000415		mg/L	0.0006250		66	30-130			

Batch CG21221 - 3510C

Blank

2-Methylnaphthalene	ND	0.002	mg/L							
Acenaphthene	ND	0.002	mg/L							
Acenaphthylene	ND	0.002	mg/L							
Anthracene	ND	0.002	mg/L							
Benzo(a)anthracene	ND	0.002	mg/L							
Benzo(a)pyrene	ND	0.002	mg/L							
Benzo(b)fluoranthene	ND	0.002	mg/L							
Benzo(g,h,i)perylene	ND	0.002	mg/L							
Benzo(k)fluoranthene	ND	0.002	mg/L							
Chrysene	ND	0.002	mg/L							
Dibenzo(a,h)Anthracene	ND	0.002	mg/L							
Fluoranthene	ND	0.002	mg/L							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21221 - 3510C

Fluorene	ND	0.002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L							
Naphthalene	ND	0.002	mg/L							
Phenanthrene	ND	0.002	mg/L							
Pyrene	ND	0.002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.000260		mg/L	0.0006250		42	30-130			
Surrogate: 2-Fluorobiphenyl	0.000278		mg/L	0.0006250		44	30-130			
Surrogate: Nitrobenzene-d5	0.000280		mg/L	0.0006250		45	30-130			
Surrogate: p-Terphenyl-d14	0.000318		mg/L	0.0006250		51	30-130			

LCS

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140			
Anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Chrysene	ND	0.002	mg/L	0.0005000			40-140			
Dibenzo(a,h)Anthracene	0.0005	0.002	mg/L	0.0005000		96	40-140			
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Fluorene	ND	0.002	mg/L	0.0005000			40-140			
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Naphthalene	ND	0.002	mg/L	0.0005000			40-140			
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140			
Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.000292		mg/L	0.0006250		47	30-130			
Surrogate: 2-Fluorobiphenyl	0.000320		mg/L	0.0006250		51	30-130			
Surrogate: Nitrobenzene-d5	0.000328		mg/L	0.0006250		52	30-130			
Surrogate: p-Terphenyl-d14	0.000415		mg/L	0.0006250		66	30-130			

LCS Dup

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140	200	20	D+
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140	200	20	D+
Anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Chrysene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Dibenzo(a,h)Anthracene	0.0005	0.002	mg/L	0.0005000		93	40-140	4	20	
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Fluorene	ND	0.002	mg/L	0.0005000			40-140	200	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21221 - 3510C

Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Naphthalene	0.0006	0.002	mg/L	0.0005000		122	40-140	33	20	D+
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.000352		mg/L	0.0006250		56	30-130			
Surrogate: 2-Fluorobiphenyl	0.000370		mg/L	0.0006250		59	30-130			
Surrogate: Nitrobenzene-d5	0.000388		mg/L	0.0006250		62	30-130			
Surrogate: p-Terphenyl-d14	0.000430		mg/L	0.0006250		69	30-130			

Classical Chemistry

Batch CG21609 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0205	0.0050	mg/L	0.02006		102	90-110			
Total Cyanide (LL)	0.0205	0.0050	mg/L	0.02006		102	90-110			

LCS

Dissolved Cyanide	0.143	0.0050	mg/L	0.1504		95	90-110			
Total Cyanide (LL)	0.143	0.0050	mg/L	0.1504		95	90-110			

LCS Dup

Dissolved Cyanide	0.143	0.0050	mg/L	0.1504		95	90-110	0.2	20	
Total Cyanide (LL)	0.143	0.0050	mg/L	0.1504		95	90-110	0.2	20	

Batch CG21712 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0203	0.0050	mg/L	0.02006		101	90-110			
Total Cyanide (LL)	0.0203	0.0050	mg/L	0.02006		101	90-110			

LCS

Dissolved Cyanide	0.143	0.0050	mg/L	0.1504		95	90-110			
Total Cyanide (LL)	0.143	0.0050	mg/L	0.1504		95	90-110			

LCS Dup

Dissolved Cyanide	0.143	0.0050	mg/L	0.1504		95	90-110	0.2	20	
Total Cyanide (LL)	0.143	0.0050	mg/L	0.1504		95	90-110	0.2	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207134

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
S-	Surrogate recovery(ies) below lower control limit (S-).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
C-	Continuing Calibration recovery is below lower control limit (C-).
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: 1207134

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/labs/waterlabs-instate.php>

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: RI0002

http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

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://www4.egov.nh.gov/des/nhelap/namesearch.asp>

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

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

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301

http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.
 Client Project ID: _____
 Shipped/Delivered Via: Client

ESS Project ID: 12070134
 Date Project Due: 7/18/12
 Days For Project: 4 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	No
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: 1.2		16. Are ESS labels on correct containers?	<input checked="" type="text" value="Yes"/> No
Iced With: Ice		17. Were samples received intact?	<input checked="" type="text" value="Yes"/> No
6. Was COC included with samples?	Yes	ESS Sample IDs: _____	
7. Was COC signed and dated by client?	Yes	Sub Lab: _____	
8. Does the COC match the sample	Yes	Analysis: _____	
9. Is COC complete and correct?	Yes	TAT: _____	
18. Was there need to call project manager to discuss status? If yes, please explain.			

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	H2SO4
1	Yes	1 L Glass	2	NP
1	Yes	250 ml Plastic	2	NaOH
1	Yes	40 ml - VOA	3	HCL
2	Yes	1 L Glass	2	H2SO4
2	Yes	1 L Glass	2	NP
2	Yes	250 ml Plastic	2	NaOH
2	Yes	40 ml - VOA	3	HCL
3	Yes	1 L Glass	2	H2SO4
3	Yes	1 L Glass	2	NP
3	Yes	250 ml Plastic	2	NaOH
3	Yes	40 ml - VOA	3	HCL
4	Yes	1 L Glass	2	H2SO4
4	Yes	1 L Glass	2	NP
4	Yes	250 ml Plastic	2	NaOH
4	Yes	40 ml - VOA	3	HCL
5	Yes	1 L Glass	2	H2SO4
5	Yes	1 L Glass	2	NP
5	Yes	250 ml Plastic	2	NaOH
5	Yes	40 ml - VOA	3	HCL
6	Yes	1 L Glass	2	H2SO4
6	Yes	1 L Glass	2	NP
6	Yes	250 ml Plastic	2	NaOH
6	Yes	40 ml - VOA	3	HCL
7	Yes	1 L Glass	2	H2SO4

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

ESS Project ID: 12070134

7	Yes	1 L Glass	2	NP
7	Yes	250 ml Plastic	2	NaOH
7	Yes	40 ml - VOA	3	HCL
8	Yes	1 L Glass	2	H2SO4
8	Yes	1 L Glass	2	NP
8	Yes	250 ml Plastic	2	NaOH
8	Yes	40 ml - VOA	3	HCL
9	Yes	1 L Glass	2	H2SO4
9	Yes	1 L Glass	2	NP
9	Yes	250 ml Plastic	2	NaOH
9	Yes	40 ml - VOA	3	HCL
10	Yes	1 L Glass	2	H2SO4
10	Yes	1 L Glass	2	NP
10	Yes	250 ml Plastic	2	NaOH
10	Yes	40 ml - VOA	3	HCL
11	Yes	40 ml - VOA	3	HCL
12	Yes	1 L Glass	2	H2SO4
12	Yes	1 L Glass	2	NP
12	Yes	250 ml Plastic	2	NaOH
12	Yes	40 ml - VOA	3	HCL
13	Yes	1 L Glass	2	H2SO4
13	Yes	1 L Glass	2	NP
13	Yes	250 ml Plastic	2	NaOH
13	Yes	40 ml - VOA	3	HCL
14	Yes	40 ml - VOA	3	HCL

Completed By: 
Reviewed By: 

Date/Time: 7/12/12 1100
Date/Time: 7/12/12

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

Page 1 of 2

Co. Name GZA		Project # 43654-00		Project Name (20 Char or less) TIDEWATER		Turn Time If faster than 5 days, prior approval by laboratory is required # _____		Reporting Limits Cir 0.004000 Wt/Wt		ESS LAB PROJECT ID 207135	
Contact Person Meg Kilpatrick		Address 530 Broadway		City Providence, RI		State RI		Zip 02909		Electronic Deliverable Yes ☒ No ☐	
Telephone # 401-421-4140		Fax # 401-421-4140		Email Address pkp@esslab.com		MA-MCP Navy		USACE Other		Format: Excel ☒ Access ☐ PDF ☒ Other ☐	
ESS LAB Sample #		Date		Collection Time		COMP		GRAB		MATRIX	
Sample Identification (20 Char or less)		Pres Code		Number of Containers		Type of Containers		Write Required Analysis			
1	7-11-12	1525	X	6W	MW-7	12	9	VGA	X	VOC B206	
2	7-11-12	1415	X	6W	MW-312D	3.5	9		X	TPH B206	
3	7-11-12	0920	X	6W	MW-326 S		9		X	PAH B206	
4	7-11-12	0945	X	6W	MW-326 D		9		X	Disolved cyanide 400	
5	7-11-12	1220	X	6W	MW-333 S		9		X		
6	7-11-12	1200	X	6W	MW-333 D		9		X		
7	7-11-12	1135	X	6W	MW-6		9		X		
8	7-11-12	0925	X	6W	MW-107		9		X		
9	7-11-12	1520	X	6W	MW-109		9		X		
10	7-11-12	1030	X	6W	MW-337		9		X		

Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present ☒ Yes ☐ No ☐ NA: ☒ [] Pickup

Seals Intact ☒ Yes ☐ No ☐ NA: ☒ [] Technicians

Cooler Temp **1.2, 5.2, 5.3, 9.2**

Sampled by: **SN/EB** **MA-MCP** **OL'S MCT** **GB** **GROUNDWATER** **WMTS**

Comments: **Disolved cyanide were field filtered.** **Also email - SOPHIA.A.NIKHARIEE** **gpa.100**

Relinquished by: (Signature) Julie Kilpatrick	Date/Time 7/11/12 1005	Relinquished by: (Signature) SK	Date/Time 7/11/12 1005	Received by: (Signature) ESS	Date/Time 7/11/12 1005
Relinquished by: (Signature) ESS	Date/Time 7/11/12 1010	Relinquished by: (Signature) SK	Date/Time 7/11/12 1010	Received by: (Signature) ESS	Date/Time 7/11/12 1010

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

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 _____
If faster than 5 days, prior approval by laboratory is required # _____
State where samples were collected from:
MA (R) CT NH NJ NY ME Other _____
Is this project for any of the following:
MA-MCP Navy USACE Other _____
Reporting Limits Lab 6.0 mg/L CWAT 1267735 JK716
Electronic Deliverable Yes ✓ No _____
Format: Excel ✓ Access _____ PDF ✓ Other _____

Co. Name	Project #	Project Name (20 Char. or less)	Number of Containers	Type of Containers	Pres Code	Sample Identification (20 Char. or less)	COMP	GRAB	MATRIX	Collection Time	Date	ESS LAB Sample #
GZA	43654100	TIDEWATER	9	VGA	135	MW-316 S	X	6W		1300	7-11-12	11
			9	↓	↓	MW-316 D	X	6W		1330	7-11-12	12
			9	↓	↓	BD071112	X	6W		1000	7-11-12	13
			3	↓	2	TBLK071112	X			0700	7-11-12	14

Container Type:	P-Poly	G-Glass	S-Sterile	V-VOA	Matrix:	S-Soil	SD-Solid	D-Sludge	WW-Waste Water	GW-Ground Water	SW-Surface Water	DW-Drinking Water	O-Oil	W-Wipes	F-Filters
Cooler Present	<u>✓</u> Yes	No	No	No	Internal Use Only										
Seals Intact	<u>✓</u> Yes	No	NA: <u>✓</u>	<u>✓</u> Pickup											
Cooler Temp:	12, 5.2, 5.3, 3.2 [] Technicians _____														
Relinquished by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1005	Received by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1005	Relinquished by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1005	Received by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1005
Relinquished by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1010	Received by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1010	Relinquished by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1010	Received by: (Signature)	<u>[Signature]</u>	Date/Time	7/11/12 1010

Comments: DISCOVERED CILIN 102 W/IS FIELD TIE-TEPES, ALSO EMAIL-SOPHIA.MAKKIN@ESS.COM

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

1 (White) Lab Copy 2 (Yellow) Client Receipt

Please fax all changes to Chain of Custody in writing.

10/26/04 A



CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.00)
ESS Laboratory Work Order Number: 1207141

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 5:20 pm, Jul 25, 2012

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.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.

Subcontracted Analyses

ESS Laboratory - Hopkinton - Hopkinton, Volatile Compounds
MA



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

SAMPLE RECEIPT

The following samples were received on July 12, 2012 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.

Revision 1 July 25, 2012: This report has been revised to include full list of VOC Compounds.

Lab Number	SampleName	Matrix	Analysis
1207141-01	MW-339S	Ground Water	8100M, 8260, 8270C, 9014
1207141-02	MW-339D	Ground Water	8100M, 8260, 8270C, 9014
1207141-03	MW-312S	Ground Water	8100M, 8260, 8270C, 9014
1207141-04	MW-314S	Ground Water	8100M, 8260, 8270C, 9014
1207141-05	MW-314D	Ground Water	8100M, 8260, 8270C, 9014
1207141-06	M and E - 2	Ground Water	8100M, 8260, 8270C, 9014
1207141-07	Trip Blank	Aqueous	8260



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

PROJECT NARRATIVE

8260B Volatile Organic Compounds

NG21604-BS2 Blank Spike recovery is below lower control limit (B-).
Tertiary-amyl methyl ether (66% @ 70-130%)
NG21604-BSD2 Relative percent difference for Blank Spike Duplicate is outside of criteria (DB+).
Tertiary-amyl methyl ether (85% @ 70-130%)

8270C Polynuclear Aromatic Hydrocarbons

1207141-02 Elevated Method Reporting Limits due to sample matrix (EL).
1207141-02 Surrogate recovery(ies) diluted below the MRL (SD).
1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)
1207141-03 Elevated Method Reporting Limits due to sample matrix (EL).
1207141-03 Surrogate recovery(ies) diluted below the MRL (SD).
1,2-Dichlorobenzene-d4 (% @ 30-130%), 2-Fluorobiphenyl (% @ 30-130%), Nitrobenzene-d5 (% @ 30-130%), p-Terphenyl-d14 (% @ 30-130%)
CG21221-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
2-Methylnaphthalene (200%), Acenaphthylene (200%), Naphthalene (33%)

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

Client Sample ID: MW-339S

Date Sampled: 07/12/12 10:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: TAJ

Prepared: 7/17/12 15:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	0.83 (0.20)		1	07/18/12 0:32	CVG0128	CG21720
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl	108 %	40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 07/12/12 10:20

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.066 (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Acenaphthene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Acenaphthylene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Anthracene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Benzo(a)anthracene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Benzo(a)pyrene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Benzo(b)fluoranthene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Benzo(g,h,i)perylene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Benzo(k)fluoranthene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Chrysene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Dibenzo(a,h)Anthracene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Fluoranthene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Fluorene	0.002 (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Naphthalene	0.287 (0.020)		100	07/16/12 19:14	CVG0104	CG21221
Phenanthrene	0.003 (0.002)		10	07/16/12 15:23	CVG0104	CG21221
Pyrene	ND (0.002)		10	07/16/12 15:23	CVG0104	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	56 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	68 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	52 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	72 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-339S
Date Sampled: 07/12/12 10:20
Percent Solids: N/A

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.520 (0.0250)	9014		5	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 07/12/12 10:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,1-Dichloropropene	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2,4-Trimethylbenzene	0.0092 (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,3,5-Trimethylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
1,4-Dioxane	ND (2.50)		5	07/16/12 21:39	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
2-Butanone	ND (0.0500)		5	07/16/12 21:39	N2G0019	NG21604
2-Chlorotoluene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
2-Hexanone	ND (0.0500)		5	07/16/12 21:39	N2G0019	NG21604
4-Chlorotoluene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.0500)		5	07/16/12 21:39	N2G0019	NG21604
Acetone	ND (0.0500)		5	07/16/12 21:39	N2G0019	NG21604
Benzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Bromobenzene	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 07/12/12 10:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Bromodichloromethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Bromoform	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Bromomethane	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
Carbon Disulfide	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Chlorobenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Chloroethane	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
Chloroform	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Chloromethane	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Dibromochloromethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Dibromomethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
Diethyl Ether	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Di-isopropyl ether	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Ethylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Hexachloroethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Isopropylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Methylene Chloride	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
Naphthalene	0.350 (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
n-Butylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
n-Propylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
sec-Butylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Styrene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
tert-Butylbenzene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 07/12/12 10:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Tetrahydrofuran	ND (0.0250)		5	07/16/12 21:39	N2G0019	NG21604
Toluene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Trichloroethene	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Vinyl Acetate	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604
Vinyl Chloride	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Xylene O	ND (0.0050)		5	07/16/12 21:39	N2G0019	NG21604
Xylene P,M	ND (0.0100)		5	07/16/12 21:39	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	91 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	95 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



*The Microbiology Division
of Thielsch Engineering, Inc.*



All methods used are in accordance with 40 CFR 136.

Prepared: 7/17/12 15:30

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	8.40 (0.20)		1	07/18/12 1:15	CVG0128	CG21720
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl	109 %	40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 07/12/12 11:30

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.275 (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Acenaphthene	0.090 (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Acenaphthylene	0.105 (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Anthracene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Benzo(a)anthracene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Benzo(a)pyrene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Benzo(b)fluoranthene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Benzo(g,h,i)perylene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Benzo(k)fluoranthene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Chrysene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Dibenzo(a,h)Anthracene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Fluoranthene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Fluorene	0.040 (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Naphthalene	2.13 (0.200)		1000	07/17/12 13:59	CVG0104	CG21221
Phenanthrene	0.041 (0.020)		100	07/16/12 20:01	CVG0104	CG21221
Pyrene	ND (0.020)		100	07/16/12 20:01	CVG0104	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	SD	30-130
Surrogate: 2-Fluorobiphenyl	%	SD	30-130
Surrogate: Nitrobenzene-d5	%	SD	30-130
Surrogate: p-Terphenyl-d14	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-339D
Date Sampled: 07/12/12 11:30
Percent Solids: N/A

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-02
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.0925 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 07/12/12 11:30

Percent Solids: N/A

Initial Volume: 0.5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,1-Dichloropropene	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2,4-Trimethylbenzene	0.449 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,3,5-Trimethylbenzene	0.122 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
1,4-Dioxane	ND (25.0)		50	07/16/12 22:15	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
2-Butanone	ND (0.500)		50	07/16/12 22:15	N2G0019	NG21604
2-Chlorotoluene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
2-Hexanone	ND (0.500)		50	07/16/12 22:15	N2G0019	NG21604
4-Chlorotoluene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.500)		50	07/16/12 22:15	N2G0019	NG21604
Acetone	ND (0.500)		50	07/16/12 22:15	N2G0019	NG21604
Benzene	0.0660 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Bromobenzene	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 07/12/12 11:30

Percent Solids: N/A

Initial Volume: 0.5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Bromodichloromethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Bromoform	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Bromomethane	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
Carbon Disulfide	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Chlorobenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Chloroethane	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
Chloroform	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Chloromethane	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Dibromochloromethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Dibromomethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
Diethyl Ether	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Di-isopropyl ether	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Ethylbenzene	0.260 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Hexachloroethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Isopropylbenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Methylene Chloride	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
Naphthalene	3.13 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
n-Butylbenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
n-Propylbenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
sec-Butylbenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Styrene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
tert-Butylbenzene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 07/12/12 11:30

Percent Solids: N/A

Initial Volume: 0.5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Tetrahydrofuran	ND (0.250)		50	07/16/12 22:15	N2G0019	NG21604
Toluene	0.0500 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Trichloroethene	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Vinyl Acetate	ND (0.100)		50	07/16/12 22:15	N2G0019	NG21604
Vinyl Chloride	ND (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Xylene O	0.418 (0.0500)		50	07/16/12 22:15	N2G0019	NG21604
Xylene P,M	0.446 (0.100)		50	07/16/12 22:15	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	98 %		70-130
Surrogate: 4-Bromofluorobenzene	90 %		70-130
Surrogate: Dibromofluoromethane	97 %		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-312S

Date Sampled: 07/12/12 09:45

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: TAJ

Prepared: 7/17/12 15:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

		RI - GB				
<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	8.61 (0.20)		1	07/18/12 4:07	CVG0128	CG21720
		%Recovery	Qualifier	Limits		
Surrogate: O-Terphenyl	114 %			40-140		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 07/12/12 09:45

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.068 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Acenaphthene	0.214 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Acenaphthylene	0.026 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Anthracene	0.032 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Benzo(a)anthracene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Benzo(a)pyrene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Benzo(b)fluoranthene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Benzo(g,h,i)perylene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Benzo(k)fluoranthene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Chrysene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Dibenzo(a,h)Anthracene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Fluoranthene	0.022 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Fluorene	0.078 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Naphthalene	2.58 (0.200)		1000	07/17/12 14:50	CVG0104	CG21221
Phenanthrene	0.115 (0.020)		100	07/16/12 20:47	CVG0104	CG21221
Pyrene	0.031 (0.020)		100	07/16/12 20:47	CVG0104	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	%	SD	30-130
Surrogate: 2-Fluorobiphenyl	%	SD	30-130
Surrogate: Nitrobenzene-d5	%	SD	30-130
Surrogate: p-Terphenyl-d14	%	SD	30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-312S
Date Sampled: 07/12/12 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-03
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.319 (0.0250)	9014		5	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 07/12/12 09:45

Percent Solids: N/A

Initial Volume: 0.5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,1-Dichloropropene	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2,4-Trimethylbenzene	0.186 (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,3,5-Trimethylbenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
1,4-Dioxane	ND (25.0)		50	07/16/12 22:52	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
2-Butanone	ND (0.500)		50	07/16/12 22:52	N2G0019	NG21604
2-Chlorotoluene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
2-Hexanone	ND (0.500)		50	07/16/12 22:52	N2G0019	NG21604
4-Chlorotoluene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.500)		50	07/16/12 22:52	N2G0019	NG21604
Acetone	ND (0.500)		50	07/16/12 22:52	N2G0019	NG21604
Benzene	0.0685 (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Bromobenzene	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 07/12/12 09:45

Percent Solids: N/A

Initial Volume: 0.5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Bromodichloromethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Bromoform	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Bromomethane	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
Carbon Disulfide	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Chlorobenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Chloroethane	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
Chloroform	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Chloromethane	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Dibromochloromethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Dibromomethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
Diethyl Ether	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Di-isopropyl ether	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Ethylbenzene	0.856 (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Hexachloroethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Isopropylbenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Methylene Chloride	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
Naphthalene	2.85 (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
n-Butylbenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
n-Propylbenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
sec-Butylbenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Styrene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
tert-Butylbenzene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 07/12/12 09:45

Percent Solids: N/A

Initial Volume: 0.5

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Tetrahydrofuran	ND (0.250)		50	07/16/12 22:52	N2G0019	NG21604
Toluene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Trichloroethene	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Vinyl Acetate	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604
Vinyl Chloride	ND (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Xylene O	0.119 (0.0500)		50	07/16/12 22:52	N2G0019	NG21604
Xylene P,M	ND (0.100)		50	07/16/12 22:52	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	92 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	94 %		70-130
<i>Surrogate: Toluene-d8</i>	96 %		70-130



*The Microbiology Division
of Thielsch Engineering, Inc.*



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314S
Date Sampled: 07/12/12 09:05
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: IBM
Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	0.0003 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Acenaphthene	0.003 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Acenaphthylene	0.0006 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Anthracene	0.0005 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Benzo(a)anthracene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Benzo(a)pyrene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Benzo(b)fluoranthene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Benzo(g,h,i)perylene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Benzo(k)fluoranthene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Chrysene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Fluoranthene	0.0002 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Fluorene	0.001 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Naphthalene	0.004 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Phenanthrene	0.0005 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221
Pyrene	0.0003 (0.0002)		1	07/14/12 9:13	CVG0088	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	40 %		30-130
Surrogate: 2-Fluorobiphenyl	45 %		30-130
Surrogate: Nitrobenzene-d5	46 %		30-130
Surrogate: p-Terphenyl-d14	62 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314S
Date Sampled: 07/12/12 09:05
Percent Solids: N/A

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-04
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.0637 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 07/12/12 09:05

Percent Solids: N/A

Initial Volume: 10

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,1-Dichloropropene	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2,4-Trimethylbenzene	0.0053 (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,3,5-Trimethylbenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
1,4-Dioxane	ND (1.25)		3	07/16/12 23:28	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
2-Butanone	ND (0.0250)		3	07/16/12 23:28	N2G0019	NG21604
2-Chlorotoluene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
2-Hexanone	ND (0.0250)		3	07/16/12 23:28	N2G0019	NG21604
4-Chlorotoluene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.0250)		3	07/16/12 23:28	N2G0019	NG21604
Acetone	ND (0.0250)		3	07/16/12 23:28	N2G0019	NG21604
Benzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Bromobenzene	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 07/12/12 09:05

Percent Solids: N/A

Initial Volume: 10

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Bromodichloromethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Bromoform	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Bromomethane	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
Carbon Disulfide	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Chlorobenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Chloroethane	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
Chloroform	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Chloromethane	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Dibromochloromethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Dibromomethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
Diethyl Ether	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Di-isopropyl ether	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Ethylbenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Hexachloroethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Isopropylbenzene	0.0028 (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Methylene Chloride	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
Naphthalene	0.0083 (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
n-Butylbenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
n-Propylbenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
sec-Butylbenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Styrene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
tert-Butylbenzene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 07/12/12 09:05

Percent Solids: N/A

Initial Volume: 10

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Tetrahydrofuran	ND (0.0125)		3	07/16/12 23:28	N2G0019	NG21604
Toluene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Trichloroethene	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Vinyl Acetate	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604
Vinyl Chloride	ND (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Xylene O	0.0052 (0.0025)		3	07/16/12 23:28	N2G0019	NG21604
Xylene P,M	ND (0.0050)		3	07/16/12 23:28	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	93 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	90 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	93 %		70-130
<i>Surrogate: Toluene-d8</i>	98 %		70-130



*The Microbiology Division
of Thielsch Engineering, Inc.*



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 07/12/12 10:30

Percent Solids: N/A

Initial Volume: 980

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Acenaphthene	0.003 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Acenaphthylene	0.0003 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Anthracene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Benzo(a)anthracene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Benzo(a)pyrene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Benzo(b)fluoranthene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Benzo(g,h,i)perylene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Benzo(k)fluoranthene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Chrysene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Fluoranthene	0.0002 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Fluorene	0.0004 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Naphthalene	0.004 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Phenanthrene	0.0002 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221
Pyrene	0.0003 (0.0002)		1	07/14/12 10:34	CVG0088	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	40 %		30-130
Surrogate: 2-Fluorobiphenyl	30 %		30-130
Surrogate: Nitrobenzene-d5	42 %		30-130
Surrogate: p-Terphenyl-d14	72 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314D
Date Sampled: 07/12/12 10:30
Percent Solids: N/A

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-05
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	ND (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.144 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 07/12/12 10:30

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
1,4-Dioxane	ND (0.500)		1	07/17/12 0:04	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
2-Butanone	ND (0.0100)		1	07/17/12 0:04	N2G0019	NG21604
2-Chlorotoluene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
2-Hexanone	ND (0.0100)		1	07/17/12 0:04	N2G0019	NG21604
4-Chlorotoluene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.0100)		1	07/17/12 0:04	N2G0019	NG21604
Acetone	ND (0.0100)		1	07/17/12 0:04	N2G0019	NG21604
Benzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Bromobenzene	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 07/12/12 10:30

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Bromodichloromethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Bromoform	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Bromomethane	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
Carbon Disulfide	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Chlorobenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Chloroethane	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
Chloroform	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Chloromethane	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Dibromochloromethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Dibromomethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
Diethyl Ether	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Di-isopropyl ether	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Ethylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Hexachloroethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Isopropylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Methylene Chloride	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
Naphthalene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
n-Butylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
n-Propylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
sec-Butylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Styrene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
tert-Butylbenzene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 07/12/12 10:30

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Tetrahydrofuran	ND (0.0050)		1	07/17/12 0:04	N2G0019	NG21604
Toluene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Trichloroethene	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Vinyl Acetate	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604
Vinyl Chloride	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Xylene O	ND (0.0010)		1	07/17/12 0:04	N2G0019	NG21604
Xylene P,M	ND (0.0020)		1	07/17/12 0:04	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>95 %</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: M and E - 2

Date Sampled: 07/12/12 09:50

Percent Solids: N/A

Initial Volume: 950

Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: TAJ

Prepared: 7/17/12 15:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u> <u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	0.27 (0.21)		1	07/18/12 6:17	CVG0128	CG21720
	%Recovery	Qualifier	Limits			
Surrogate: O-Terphenyl	110 %		40-140			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E - 2

Date Sampled: 07/12/12 09:50

Percent Solids: N/A

Initial Volume: 980

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 7/12/12 12:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
2-Methylnaphthalene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Acenaphthene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Acenaphthylene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Anthracene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Benzo(a)anthracene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Benzo(a)pyrene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Benzo(b)fluoranthene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Benzo(g,h,i)perylene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Benzo(k)fluoranthene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Chrysene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Dibenzo(a,h)Anthracene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Fluoranthene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Fluorene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Naphthalene	0.001 (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Phenanthrene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221
Pyrene	ND (0.0002)		1	07/14/12 11:20	CVG0088	CG21221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	44 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	41 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	42 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: M and E - 2
Date Sampled: 07/12/12 09:50
Percent Solids: N/A

ESS Laboratory Work Order: 1207141
ESS Laboratory Sample ID: 1207141-06
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - GB</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>				
Dissolved Cyanide	0.0083 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712
Total Cyanide (LL)	0.0325 (0.0050)	9014		1	DPS	07/17/12 13:30	mg/L	CG21712



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E - 2

Date Sampled: 07/12/12 09:50

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
1,4-Dioxane	ND (0.500)		1	07/17/12 0:40	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
2-Butanone	ND (0.0100)		1	07/17/12 0:40	N2G0019	NG21604
2-Chlorotoluene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
2-Hexanone	ND (0.0100)		1	07/17/12 0:40	N2G0019	NG21604
4-Chlorotoluene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.0100)		1	07/17/12 0:40	N2G0019	NG21604
Acetone	ND (0.0100)		1	07/17/12 0:40	N2G0019	NG21604
Benzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Bromobenzene	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E - 2

Date Sampled: 07/12/12 09:50

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Bromodichloromethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Bromoform	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Bromomethane	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
Carbon Disulfide	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Chlorobenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Chloroethane	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
Chloroform	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Chloromethane	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Dibromochloromethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Dibromomethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
Diethyl Ether	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Di-isopropyl ether	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Ethylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Hexachloroethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Isopropylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Methylene Chloride	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
Naphthalene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
n-Butylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
n-Propylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
sec-Butylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Styrene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
tert-Butylbenzene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E - 2

Date Sampled: 07/12/12 09:50

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Tetrahydrofuran	ND (0.0050)		1	07/17/12 0:40	N2G0019	NG21604
Toluene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Trichloroethene	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Vinyl Acetate	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604
Vinyl Chloride	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Xylene O	ND (0.0010)		1	07/17/12 0:40	N2G0019	NG21604
Xylene P,M	ND (0.0020)		1	07/17/12 0:40	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>104 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank

Date Sampled: 07/12/12 00:00

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-07

Sample Matrix: Aqueous

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,1,1-Trichloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,1,2,2-Tetrachloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,1,2-Trichloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,1-Dichloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,1-Dichloroethene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,1-Dichloropropene	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
1,2,3-Trichlorobenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2,3-Trichloropropane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2,4-Trichlorobenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2,4-Trimethylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2-Dibromo-3-Chloropropane	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
1,2-Dibromoethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2-Dichlorobenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2-Dichloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,2-Dichloropropane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,3,5-Trimethylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,3-Dichlorobenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,3-Dichloropropane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,4-Dichlorobenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
1,4-Dioxane	ND (0.500)		1	07/17/12 1:15	N2G0019	NG21604
2,2-Dichloropropane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
2-Butanone	ND (0.0100)		1	07/17/12 1:15	N2G0019	NG21604
2-Chlorotoluene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
2-Hexanone	ND (0.0100)		1	07/17/12 1:15	N2G0019	NG21604
4-Chlorotoluene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
4-Isopropyltoluene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
4-Methyl-2-Pentanone	ND (0.0100)		1	07/17/12 1:15	N2G0019	NG21604
Acetone	ND (0.0100)		1	07/17/12 1:15	N2G0019	NG21604
Benzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Bromobenzene	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank

Date Sampled: 07/12/12 00:00

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-07

Sample Matrix: Aqueous

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromochloromethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Bromodichloromethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Bromoform	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Bromomethane	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
Carbon Disulfide	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Carbon Tetrachloride	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Chlorobenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Chloroethane	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
Chloroform	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Chloromethane	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
cis-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
cis-1,3-Dichloropropene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Dibromochloromethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Dibromomethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Dichlorodifluoromethane	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
Diethyl Ether	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Di-isopropyl ether	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Ethyl tertiary-butyl ether	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Ethylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Hexachlorobutadiene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Hexachloroethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Isopropylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Methyl tert-Butyl Ether	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Methylene Chloride	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
Naphthalene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
n-Butylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
n-Propylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
sec-Butylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Styrene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
tert-Butylbenzene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Tertiary-amyl methyl ether	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank

Date Sampled: 07/12/12 00:00

Percent Solids: N/A

Initial Volume: 25

Final Volume: 25

Extraction Method: 5030

ESS Laboratory Work Order: 1207141

ESS Laboratory Sample ID: 1207141-07

Sample Matrix: Aqueous

Units: mg/L

Analyst: MQS

All methods used are in accordance with 40 CFR 136.

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - GB</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Tetrahydrofuran	ND (0.0050)		1	07/17/12 1:15	N2G0019	NG21604
Toluene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
trans-1,2-Dichloroethene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
trans-1,3-Dichloropropene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Trichloroethene	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Trichlorofluoromethane	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Vinyl Acetate	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604
Vinyl Chloride	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Xylene O	ND (0.0010)		1	07/17/12 1:15	N2G0019	NG21604
Xylene P,M	ND (0.0020)		1	07/17/12 1:15	N2G0019	NG21604

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</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>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CG21720 - 3510C

Blank

Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							

<i>Surrogate: O-Terphenyl</i>	<i>0.111</i>		mg/L	<i>0.1000</i>		<i>111</i>	<i>40-140</i>			

LCS

Decane (C10)	0.035	0.005	mg/L	0.05000		70	40-140			
Docosane (C22)	0.050	0.005	mg/L	0.05000		100	40-140			
Dodecane (C12)	0.040	0.005	mg/L	0.05000		80	40-140			
Eicosane (C20)	0.049	0.005	mg/L	0.05000		98	40-140			
Hexacosane (C26)	0.049	0.005	mg/L	0.05000		97	40-140			
Hexadecane (C16)	0.046	0.005	mg/L	0.05000		92	40-140			
Nonadecane (C19)	0.042	0.005	mg/L	0.05000		84	40-140			
Nonane (C9)	0.026	0.005	mg/L	0.05000		52	30-140			
Octacosane (C28)	0.049	0.005	mg/L	0.05000		99	40-140			
Octadecane (C18)	0.048	0.005	mg/L	0.05000		96	40-140			
Tetracosane (C24)	0.050	0.005	mg/L	0.05000		100	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		87	40-140			
Triacontane (C30)	0.051	0.005	mg/L	0.05000		103	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>0.111</i>		mg/L	<i>0.1000</i>		<i>111</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	0.034	0.005	mg/L	0.05000		68	40-140	3	25	
Docosane (C22)	0.050	0.005	mg/L	0.05000		99	40-140	0.2	25	
Dodecane (C12)	0.040	0.005	mg/L	0.05000		80	40-140	0.07	25	
Eicosane (C20)	0.049	0.005	mg/L	0.05000		99	40-140	0.7	25	
Hexacosane (C26)	0.049	0.005	mg/L	0.05000		99	40-140	1	25	
Hexadecane (C16)	0.047	0.005	mg/L	0.05000		94	40-140	2	25	
Nonadecane (C19)	0.047	0.005	mg/L	0.05000		94	40-140	11	25	
Nonane (C9)	0.024	0.005	mg/L	0.05000		47	30-140	10	25	
Octacosane (C28)	0.049	0.005	mg/L	0.05000		99	40-140	0.4	25	
Octadecane (C18)	0.049	0.005	mg/L	0.05000		98	40-140	2	25	
Tetracosane (C24)	0.050	0.005	mg/L	0.05000		101	40-140	0.6	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CG21720 - 3510C

Tetradecane (C14)	0.045	0.005	mg/L	0.05000		90	40-140	3	25	
Triacotane (C30)	0.052	0.005	mg/L	0.05000		103	40-140	0.8	25	
Surrogate: O-Terphenyl	0.112		mg/L	0.1000		112	40-140			

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21221 - 3510C

Blank

2-Methylnaphthalene	ND	0.002	mg/L							
Acenaphthene	ND	0.002	mg/L							
Acenaphthylene	ND	0.002	mg/L							
Anthracene	ND	0.002	mg/L							
Benzo(a)anthracene	ND	0.002	mg/L							
Benzo(a)pyrene	ND	0.002	mg/L							
Benzo(b)fluoranthene	ND	0.002	mg/L							
Benzo(g,h,i)perylene	ND	0.002	mg/L							
Benzo(k)fluoranthene	ND	0.002	mg/L							
Chrysene	ND	0.002	mg/L							
Dibenzo(a,h)Anthracene	ND	0.002	mg/L							
Fluoranthene	ND	0.002	mg/L							
Fluorene	ND	0.002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L							
Naphthalene	ND	0.002	mg/L							
Phenanthrene	ND	0.002	mg/L							
Pyrene	ND	0.002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.000260		mg/L	0.0006250		42	30-130			
Surrogate: 2-Fluorobiphenyl	0.000278		mg/L	0.0006250		44	30-130			
Surrogate: Nitrobenzene-d5	0.000280		mg/L	0.0006250		45	30-130			
Surrogate: p-Terphenyl-d14	0.000318		mg/L	0.0006250		51	30-130			

LCS

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140			
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140			
Anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140			
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Chrysene	ND	0.002	mg/L	0.0005000			40-140			
Dibenzo(a,h)Anthracene	0.0005	0.002	mg/L	0.0005000		96	40-140			
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140			
Fluorene	ND	0.002	mg/L	0.0005000			40-140			
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Naphthalene	ND	0.002	mg/L	0.0005000			40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C Polynuclear Aromatic Hydrocarbons

Batch CG21221 - 3510C

Phenanthrene	ND	0.002	mg/L	0.0005000			40-140			
Pyrene	ND	0.002	mg/L	0.0005000			40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.000292		mg/L	0.0006250		47	30-130			
Surrogate: 2-Fluorobiphenyl	0.000320		mg/L	0.0006250		51	30-130			
Surrogate: Nitrobenzene-d5	0.000328		mg/L	0.0006250		52	30-130			
Surrogate: p-Terphenyl-d14	0.000415		mg/L	0.0006250		66	30-130			

LCS Dup

2-Methylnaphthalene	ND	0.002	mg/L	0.0005000			40-140	200	20	D+
Acenaphthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Acenaphthylene	ND	0.002	mg/L	0.0005000			40-140	200	20	D+
Anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)anthracene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(a)pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(b)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(g,h,i)perylene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Benzo(k)fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Chrysene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Dibenzo(a,h)Anthracene	0.0005	0.002	mg/L	0.0005000		93	40-140	4	20	
Fluoranthene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Fluorene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Indeno(1,2,3-cd)Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Naphthalene	0.0006	0.002	mg/L	0.0005000		122	40-140	33	20	D+
Phenanthrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Pyrene	ND	0.002	mg/L	0.0005000			40-140	200	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.000352		mg/L	0.0006250		56	30-130			
Surrogate: 2-Fluorobiphenyl	0.000370		mg/L	0.0006250		59	30-130			
Surrogate: Nitrobenzene-d5	0.000388		mg/L	0.0006250		62	30-130			
Surrogate: p-Terphenyl-d14	0.000430		mg/L	0.0006250		69	30-130			

Classical Chemistry

Batch CG21712 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0203	0.0050	mg/L	0.02006		101	90-110			
Total Cyanide (LL)	0.0203	0.0050	mg/L	0.02006		101	90-110			

LCS

Dissolved Cyanide	0.143	0.0050	mg/L	0.1504		95	90-110			
Total Cyanide (LL)	0.143	0.0050	mg/L	0.1504		95	90-110			

LCS Dup

Dissolved Cyanide	0.143	0.0050	mg/L	0.1504		95	90-110	0.2	20	
Total Cyanide (LL)	0.143	0.0050	mg/L	0.1504		95	90-110	0.2	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch NG21604 - 5030

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	0.0010	mg/L
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.0010	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	0.0020	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	ND	0.500	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	0.0100	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	0.0010	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	0.0010	mg/L



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch NG21604 - 5030

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	0.0010	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	0.0020	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	0.0010	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0020	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	ND		mg/L	0.01000		97	70-130			
Surrogate: 4-Bromofluorobenzene	ND		mg/L	0.01000		90	70-130			
Surrogate: Dibromofluoromethane	ND		mg/L	0.01000		95	70-130			
Surrogate: Toluene-d8	ND		mg/L	0.01000		96	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0196	0.0010	mg/L	0.02000		98	70-130			
1,1,1-Trichloroethane	0.0201	0.0010	mg/L	0.02000		100	70-130			
1,1,2,2-Tetrachloroethane	0.0177	0.0010	mg/L	0.02000		89	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0208	0.0010	mg/L	0.02000		104	70-130			
1,1,2-Trichloroethane	0.0186	0.0010	mg/L	0.02000		93	70-130			
1,1-Dichloroethane	0.0206	0.0010	mg/L	0.02000		103	70-130			
1,1-Dichloroethene	0.0208	0.0010	mg/L	0.02000		104	70-130			
1,1-Dichloropropene	0.0201	0.0020	mg/L	0.02000		100	70-130			
1,2,3-Trichlorobenzene	0.0191	0.0010	mg/L	0.02000		96	70-130			
1,2,3-Trichloropropane	0.0174	0.0010	mg/L	0.02000		87	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch NG21604 - 5030

1,2,4-Trichlorobenzene	0.0185	0.0010	mg/L	0.02000		93	70-130			
1,2,4-Trimethylbenzene	0.0205	0.0010	mg/L	0.02000		103	70-130			
1,2-Dibromo-3-Chloropropane	0.0176	0.0020	mg/L	0.02000		88	70-130			
1,2-Dibromoethane	0.0187	0.0010	mg/L	0.02000		94	70-130			
1,2-Dichlorobenzene	0.0193	0.0010	mg/L	0.02000		96	70-130			
1,2-Dichloroethane	0.0180	0.0010	mg/L	0.02000		90	70-130			
1,2-Dichloropropane	0.0203	0.0010	mg/L	0.02000		101	70-130			
1,3,5-Trimethylbenzene	0.0205	0.0010	mg/L	0.02000		103	70-130			
1,3-Dichlorobenzene	0.0201	0.0010	mg/L	0.02000		100	70-130			
1,3-Dichloropropane	0.0184	0.0010	mg/L	0.02000		92	70-130			
1,4-Dichlorobenzene	0.0196	0.0010	mg/L	0.02000		98	70-130			
2,2-Dichloropropane	0.0211	0.0010	mg/L	0.02000		106	70-130			
2-Butanone	0.177	0.0100	mg/L	0.2000		88	70-130			
2-Chlorotoluene	0.0199	0.0010	mg/L	0.02000		100	70-130			
2-Hexanone	0.187	0.0100	mg/L	0.2000		94	70-130			
4-Chlorotoluene	0.0193	0.0010	mg/L	0.02000		97	70-130			
4-Isopropyltoluene	0.0217	0.0010	mg/L	0.02000		108	70-130			
4-Methyl-2-Pentanone	0.177	0.0100	mg/L	0.2000		89	70-130			
Acetone	0.176	0.0100	mg/L	0.2000		88	70-130			
Benzene	0.0200	0.0010	mg/L	0.02000		100	70-130			
Bromobenzene	0.0189	0.0020	mg/L	0.02000		94	70-130			
Bromochloromethane	0.0194	0.0010	mg/L	0.02000		97	70-130			
Bromodichloromethane	0.0180	0.0010	mg/L	0.02000		90	70-130			
Bromoform	0.0186	0.0010	mg/L	0.02000		93	70-130			
Bromomethane	0.0223	0.0020	mg/L	0.02000		111	70-130			
Carbon Disulfide	0.0206	0.0010	mg/L	0.02000		103	70-130			
Carbon Tetrachloride	0.0209	0.0010	mg/L	0.02000		104	70-130			
Chlorobenzene	0.0213	0.0010	mg/L	0.02000		106	70-130			
Chloroethane	0.0225	0.0020	mg/L	0.02000		112	70-130			
Chloroform	0.0191	0.0010	mg/L	0.02000		96	70-130			
Chloromethane	0.0240	0.0020	mg/L	0.02000		120	70-130			
cis-1,2-Dichloroethene	0.0206	0.0010	mg/L	0.02000		103	70-130			
cis-1,3-Dichloropropene	0.0196	0.0010	mg/L	0.02000		98	70-130			
Dibromochloromethane	0.0201	0.0010	mg/L	0.02000		101	70-130			
Dibromomethane	0.0186	0.0010	mg/L	0.02000		93	70-130			
Dichlorodifluoromethane	0.0245	0.0020	mg/L	0.02000		123	70-130			
Diethyl Ether	0.0180	0.0010	mg/L	0.02000		90	70-130			
Di-isopropyl ether	0.0193	0.0010	mg/L	0.02000		96	70-130			
Ethyl tertiary-butyl ether	0.0151	0.0010	mg/L	0.02000		76	70-130			
Ethylbenzene	0.0217	0.0010	mg/L	0.02000		108	70-130			
Hexachlorobutadiene	0.0212	0.0010	mg/L	0.02000		106	70-130			
Hexachloroethane	0.0218	0.0010	mg/L	0.02000		109	70-130			
Isopropylbenzene	0.0208	0.0010	mg/L	0.02000		104	70-130			
Methyl tert-Butyl Ether	0.0155	0.0010	mg/L	0.02000		78	70-130			
Methylene Chloride	0.0181	0.0020	mg/L	0.02000		91	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch NG21604 - 5030

Naphthalene	0.0184	0.0010	mg/L	0.02000		92	70-130			
n-Butylbenzene	0.0215	0.0010	mg/L	0.02000		107	70-130			
n-Propylbenzene	0.0208	0.0010	mg/L	0.02000		104	70-130			
sec-Butylbenzene	0.0216	0.0010	mg/L	0.02000		108	70-130			
Styrene	0.0193	0.0010	mg/L	0.02000		96	70-130			
tert-Butylbenzene	0.0212	0.0010	mg/L	0.02000		106	70-130			
Tertiary-amyl methyl ether	0.0131	0.0020	mg/L	0.02000		66	70-130			B-
Tetrachloroethene	0.0212	0.0010	mg/L	0.02000		106	70-130			
Tetrahydrofuran	0.0182	0.0050	mg/L	0.02000		91	70-130			
Toluene	0.0208	0.0010	mg/L	0.02000		104	70-130			
trans-1,2-Dichloroethene	0.0211	0.0010	mg/L	0.02000		106	70-130			
trans-1,3-Dichloropropene	0.0165	0.0010	mg/L	0.02000		82	70-130			
Trichloroethene	0.0215	0.0010	mg/L	0.02000		108	70-130			
Trichlorofluoromethane	0.0223	0.0010	mg/L	0.02000		112	70-130			
Vinyl Acetate	0.0179	0.0020	mg/L	0.02000		89	70-130			
Vinyl Chloride	0.0224	0.0010	mg/L	0.02000		112	70-130			
Xylene O	0.0200	0.0010	mg/L	0.02000		100	70-130			
Xylene P,M	0.0417	0.0020	mg/L	0.04000		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.00920		mg/L	0.01000		92	70-130			
Surrogate: 4-Bromofluorobenzene	0.00947		mg/L	0.01000		95	70-130			
Surrogate: Dibromofluoromethane	0.00929		mg/L	0.01000		93	70-130			
Surrogate: Toluene-d8	0.00971		mg/L	0.01000		97	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0188	0.0010	mg/L	0.02000		94	70-130	4	25	
1,1,1-Trichloroethane	0.0199	0.0010	mg/L	0.02000		100	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	0.0188	0.0010	mg/L	0.02000		94	70-130	6	25	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0201	0.0010	mg/L	0.02000		101	70-130	4	25	
1,1,2-Trichloroethane	0.0189	0.0010	mg/L	0.02000		94	70-130	1	25	
1,1-Dichloroethane	0.0202	0.0010	mg/L	0.02000		101	70-130	2	25	
1,1-Dichloroethene	0.0198	0.0010	mg/L	0.02000		99	70-130	5	25	
1,1-Dichloropropene	0.0195	0.0020	mg/L	0.02000		98	70-130	3	25	
1,2,3-Trichlorobenzene	0.0191	0.0010	mg/L	0.02000		95	70-130	0.2	25	
1,2,3-Trichloropropane	0.0188	0.0010	mg/L	0.02000		94	70-130	8	25	
1,2,4-Trichlorobenzene	0.0187	0.0010	mg/L	0.02000		94	70-130	1	25	
1,2,4-Trimethylbenzene	0.0196	0.0010	mg/L	0.02000		98	70-130	4	25	
1,2-Dibromo-3-Chloropropane	0.0179	0.0020	mg/L	0.02000		90	70-130	2	25	
1,2-Dibromoethane	0.0192	0.0010	mg/L	0.02000		96	70-130	2	25	
1,2-Dichlorobenzene	0.0190	0.0010	mg/L	0.02000		95	70-130	2	25	
1,2-Dichloroethane	0.0190	0.0010	mg/L	0.02000		95	70-130	5	25	
1,2-Dichloropropane	0.0207	0.0010	mg/L	0.02000		104	70-130	2	25	
1,3,5-Trimethylbenzene	0.0198	0.0010	mg/L	0.02000		99	70-130	3	25	
1,3-Dichlorobenzene	0.0193	0.0010	mg/L	0.02000		96	70-130	4	25	
1,3-Dichloropropane	0.0186	0.0010	mg/L	0.02000		93	70-130	1	25	
1,4-Dichlorobenzene	0.0193	0.0010	mg/L	0.02000		96	70-130	2	25	
2,2-Dichloropropane	0.0205	0.0010	mg/L	0.02000		102	70-130	3	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch NG21604 - 5030

2-Butanone	0.196	0.0100	mg/L	0.2000		98	70-130	10	25	
2-Chlorotoluene	0.0191	0.0010	mg/L	0.02000		95	70-130	5	25	
2-Hexanone	0.198	0.0100	mg/L	0.2000		99	70-130	5	25	
4-Chlorotoluene	0.0188	0.0010	mg/L	0.02000		94	70-130	3	25	
4-Isopropyltoluene	0.0200	0.0010	mg/L	0.02000		100	70-130	8	25	
4-Methyl-2-Pentanone	0.200	0.0100	mg/L	0.2000		100	70-130	12	25	
Acetone	0.184	0.0100	mg/L	0.2000		92	70-130	4	25	
Benzene	0.0198	0.0010	mg/L	0.02000		99	70-130	1	25	
Bromobenzene	0.0188	0.0020	mg/L	0.02000		94	70-130	0.5	25	
Bromochloromethane	0.0197	0.0010	mg/L	0.02000		98	70-130	1	25	
Bromodichloromethane	0.0186	0.0010	mg/L	0.02000		93	70-130	4	25	
Bromoform	0.0190	0.0010	mg/L	0.02000		95	70-130	2	25	
Bromomethane	0.0218	0.0020	mg/L	0.02000		109	70-130	2	25	
Carbon Disulfide	0.0191	0.0010	mg/L	0.02000		96	70-130	7	25	
Carbon Tetrachloride	0.0199	0.0010	mg/L	0.02000		99	70-130	5	25	
Chlorobenzene	0.0200	0.0010	mg/L	0.02000		100	70-130	6	25	
Chloroethane	0.0204	0.0020	mg/L	0.02000		102	70-130	10	25	
Chloroform	0.0190	0.0010	mg/L	0.02000		95	70-130	0.6	25	
Chloromethane	0.0228	0.0020	mg/L	0.02000		114	70-130	5	25	
cis-1,2-Dichloroethene	0.0204	0.0010	mg/L	0.02000		102	70-130	0.9	25	
cis-1,3-Dichloropropene	0.0206	0.0010	mg/L	0.02000		103	70-130	5	25	
Dibromochloromethane	0.0202	0.0010	mg/L	0.02000		101	70-130	0.05	25	
Dibromomethane	0.0198	0.0010	mg/L	0.02000		99	70-130	6	25	
Dichlorodifluoromethane	0.0230	0.0020	mg/L	0.02000		115	70-130	6	25	
Diethyl Ether	0.0194	0.0010	mg/L	0.02000		97	70-130	7	25	
Di-isopropyl ether	0.0200	0.0010	mg/L	0.02000		100	70-130	4	25	
Ethyl tertiary-butyl ether	0.0176	0.0010	mg/L	0.02000		88	70-130	15	25	
Ethylbenzene	0.0202	0.0010	mg/L	0.02000		101	70-130	7	25	
Hexachlorobutadiene	0.0195	0.0010	mg/L	0.02000		98	70-130	8	25	
Hexachloroethane	0.0209	0.0010	mg/L	0.02000		105	70-130	4	25	
Isopropylbenzene	0.0197	0.0010	mg/L	0.02000		99	70-130	5	25	
Methyl tert-Butyl Ether	0.0176	0.0010	mg/L	0.02000		88	70-130	12	25	
Methylene Chloride	0.0182	0.0020	mg/L	0.02000		91	70-130	0.7	25	
Naphthalene	0.0193	0.0010	mg/L	0.02000		96	70-130	5	25	
n-Butylbenzene	0.0199	0.0010	mg/L	0.02000		100	70-130	7	25	
n-Propylbenzene	0.0195	0.0010	mg/L	0.02000		98	70-130	6	25	
sec-Butylbenzene	0.0202	0.0010	mg/L	0.02000		101	70-130	7	25	
Styrene	0.0191	0.0010	mg/L	0.02000		95	70-130	1	25	
tert-Butylbenzene	0.0196	0.0010	mg/L	0.02000		98	70-130	8	25	
Tertiary-amyl methyl ether	0.0170	0.0020	mg/L	0.02000		85	70-130	26	25	DB+
Tetrachloroethene	0.0194	0.0010	mg/L	0.02000		97	70-130	9	25	
Tetrahydrofuran	0.0188	0.0050	mg/L	0.02000		94	70-130	3	25	
Toluene	0.0203	0.0010	mg/L	0.02000		101	70-130	2	25	
trans-1,2-Dichloroethene	0.0201	0.0010	mg/L	0.02000		101	70-130	5	25	
trans-1,3-Dichloropropene	0.0175	0.0010	mg/L	0.02000		88	70-130	6	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch NG21604 - 5030										
Trichloroethene	0.0206	0.0010	mg/L	0.02000		103	70-130	4	25	
Trichlorofluoromethane	0.0209	0.0010	mg/L	0.02000		105	70-130	6	25	
Vinyl Acetate	0.0195	0.0020	mg/L	0.02000		97	70-130	9	25	
Vinyl Chloride	0.0212	0.0010	mg/L	0.02000		106	70-130	5	25	
Xylene O	0.0188	0.0010	mg/L	0.02000		94	70-130	6	25	
Xylene P,M	0.0391	0.0020	mg/L	0.04000		98	70-130	7	25	
Surrogate: 1,2-Dichloroethane-d4	0.00999		mg/L	0.01000		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.00937		mg/L	0.01000		94	70-130			
Surrogate: Dibromofluoromethane	0.00976		mg/L	0.01000		98	70-130			
Surrogate: Toluene-d8	0.00994		mg/L	0.01000		99	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1207141

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
EL	Elevated Method Reporting Limits due to sample matrix (EL).
DB+	Relative percent difference for Blank Spike Duplicate is outside of criteria (DB+).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
B-	Blank Spike recovery is below lower control limit (B-).
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: 1207141

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/labs/waterlabs-instate.php>

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: RI0002

http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

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://www4.egov.nh.gov/des/nhelap/namesearch.asp>

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

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

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301

http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Client Project ID: _____

Shipped/Delivered Via: ClientESS Project ID: 12070141Date Project Due: 7/19/12Days For Project: 5 Day**Items to be checked upon receipt:**

1. Air Bill Manifest Present?

☒ **No**

Air No.:

2. Were Custody Seals Present?

☐ **No**

3. Were Custody Seals Intact?

☐ **N/A**

4. Is Radiation count < 100 CPM?

☐ **Yes**

5. Is a cooler present?

☐ **Yes**Cooler Temp: 2.1Iced With: Ice

6. Was COC included with samples?

☐ **Yes**

7. Was COC signed and dated by client?

☐ **Yes**

8. Does the COC match the sample

☐ **Yes**

9. Is COC complete and correct?

☐ **Yes**

10. Are the samples properly preserved?

☐ **Yes**

11. Proper sample containers used?

☐ **Yes**

12. Any air bubbles in the VOA vials?

☐ **No**

13. Holding times exceeded?

☐ **No**

14. Sufficient sample volumes?

☐ **Yes**

15. Any Subcontracting needed?

☐ **No**

16. Are ESS labels on correct containers?

☒ **Yes** ☐ **No**

17. Were samples received intact?

☒ **Yes** ☐ **No**

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	H2SO4
1	Yes	1 L Glass	2	NP
1	Yes	250 ml Plastic	2	NaOH
1	Yes	40 ml - VOA	3	HCL
2	Yes	1 L Glass	2	H2SO4
2	Yes	1 L Glass	2	NP
2	Yes	250 ml Plastic	2	NaOH
2	Yes	40 ml - VOA	3	HCL
3	Yes	1 L Glass	2	H2SO4
3	Yes	1 L Glass	2	NP
3	Yes	250 ml Plastic	2	NaOH
3	Yes	40 ml - VOA	3	HCL
4	Yes	1 L Glass	2	H2SO4
4	Yes	1 L Glass	2	NP
4	Yes	250 ml Plastic	2	NaOH
4	Yes	40 ml - VOA	3	HCL
5	Yes	1 L Glass	2	H2SO4
5	Yes	1 L Glass	2	NP
5	Yes	250 ml Plastic	2	NaOH
5	Yes	40 ml - VOA	3	HCL
6	Yes	1 L Glass	2	H2SO4
6	Yes	1 L Glass	2	NP
6	Yes	250 ml Plastic	2	NaOH
6	Yes	40 ml - VOA	3	HCL
7	Yes	40 ml - VOA	3	HCL

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

ESS Project ID: 12070141

Completed By: [Signature]

Date/Time: 7/12/12 1520

Reviewed By: [Signature]

Date/Time: 7/12/12

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

Page 1 of 1

Co. Name GZA		Project # 4365400		Project Name (20 Char. or less) TIDEWATER		ESS LAB PROJECT ID 207141	
Contact Person Meg Kilpatrick		Address 530 Broadview		State RI		Zip 02909	
City Providence		Telephone # 401-421-4140		Fax #		PO #	
ESS LAB Sample #		Date		Collection Time		COMP	
7		7-12-12		0700		X	
1		7-12-12		1020		X	
2		7-12-12		1130		X	
3		7-12-12		0945		X	
4		7-12-12		0905		X	
5		7-12-12		1030		X	
6		7-12-12		0950		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Sample Identification (20 Char. or less)		Pres Code		Number of Containers		Type of Containers	
Trip Blank 0700-12		2		3		V	
MW-339S		12		9		V	
MW-339D		1		9		V	
MW-312S		1		9		V	
MW-314S		1		9		V	
MW-314D		1		9		V	
M+E-2		V		9		V	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X		X	
MW-312S		X		X		X	
MW-314S		X		X		X	
MW-314D		X		X		X	
M+E-2		X		X		X	
Matrix		GRAB		COMP		GRAB	
Trip Blank 0700-12		X		X		X	
MW-339S		X		X		X	
MW-339D		X		X			



CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (03.0043654)
ESS Laboratory Work Order Number: 1308084

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 5:55 pm, Aug 13, 2013

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: 1308084

SAMPLE RECEIPT

The following samples were received on August 06, 2013 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.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1308084-01	MW-109	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-02	M and E MW-2	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-03	MW-314S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-04	MW-314D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-05	BD-1	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-06	MW-310S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-07	MW-310D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-08	MW-312S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-09	MW-312D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308084-10	Trip Blank - 8613	Aqueous	8260B



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CH30905-BS1 Blank Spike recovery is below lower control limit (B-).
Bromomethane (69% @ 70-130%)

CH30905-BSD1 Blank Spike recovery is below lower control limit (B-).
Dichlorodifluoromethane (69% @ 70-130%)

CH31237-BLK1 Surrogate recovery(ies) above upper control limit (S+).
Dibromofluoromethane (134% @ 70-130%)

CH31329-BS1 Blank Spike recovery is below lower control limit (B-).
Dichlorodifluoromethane (69% @ 70-130%)

CWH0120-CCV1 Continuing Calibration recovery is above upper control limit (C+).
1,4-Dioxane - Screen (178% @ 70-130%)

CWH0120-CCV1 Continuing Calibration recovery is below lower control limit (C-).
Bromomethane (53% @ 70-130%)

CWH0154-CCV1 Continuing Calibration recovery is above upper control limit (C+).
1,4-Dioxane - Screen (152% @ 70-130%)

CWH0172-CCV1 Continuing Calibration recovery is above upper control limit (C+).
1,4-Dioxane - Screen (191% @ 70-130%)

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: 1308084

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
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-109
Date Sampled: 08/06/13 14:20
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	2.79 (0.19)		8100M		1	08/08/13 10:05	CWH0093	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		93 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 08/06/13 14:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2,4-Trimethylbenzene	0.126 (0.0100)	0.0010	8260B		10	08/13/13 12:05	CWH0154	CH31237
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,3,5-Trimethylbenzene	0.0057 (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/12/13 13:09	CWH0154	CH31237
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/12/13 13:09	CWH0154	CH31237
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/12/13 13:09	CWH0154	CH31237
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/12/13 13:09	CWH0154	CH31237
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
4-Isopropyltoluene	0.0046 (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/12/13 13:09	CWH0154	CH31237
Acetone	ND (0.0100)	0.0027	8260B		1	08/12/13 13:09	CWH0154	CH31237
Benzene	0.115 (0.0100)	0.0010	8260B		10	08/13/13 12:05	CWH0154	CH31237



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 08/06/13 14:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Bromoform	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/12/13 13:09	CWH0154	CH31237
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/12/13 13:09	CWH0154	CH31237
Chloroform	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Ethylbenzene	0.0404 (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Isopropylbenzene	0.0194 (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Naphthalene	0.163 (0.0100)	0.0020	8260B		10	08/13/13 12:05	CWH0154	CH31237
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
n-Propylbenzene	0.0101 (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Styrene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 08/06/13 14:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/12/13 13:09	CWH0154	CH31237
Toluene	0.0030 (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/12/13 13:09	CWH0154	CH31237
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/12/13 13:09	CWH0154	CH31237
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/12/13 13:09	CWH0154	CH31237
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Xylene O	0.0183 (0.0010)	0.0001	8260B		1	08/12/13 13:09	CWH0154	CH31237
Xylene P,M	0.0128 (0.0020)	0.0002	8260B		1	08/12/13 13:09	CWH0154	CH31237
Xylenes (Total)	0.0311 (0.0020)		8260B		1	08/12/13 13:09		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/12/13 13:09		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	110 %		70-130
Surrogate: 4-Bromofluorobenzene	120 %		70-130
Surrogate: Dibromofluoromethane	125 %		70-130
Surrogate: Toluene-d8	89 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-109

Date Sampled: 08/06/13 14:20

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0309 (0.0019)		8270C SIM		10	08/09/13 19:53	CWH0086	CH30609
Acenaphthene	0.0033 (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Acenaphthylene	0.0004 (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Anthracene	0.0004 (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Chrysene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Fluoranthene	ND (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Fluorene	0.0019 (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Naphthalene	0.0965 (0.0019)		8270C SIM		10	08/09/13 19:53	CWH0086	CH30609
Phenanthrene	0.0019 (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609
Pyrene	0.0002 (0.0002)		8270C SIM		1	08/07/13 16:06	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	34 %		30-130
Surrogate: 2-Fluorobiphenyl	49 %		30-130
Surrogate: Nitrobenzene-d5	40 %		30-130
Surrogate: p-Terphenyl-d14	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-109
Date Sampled: 08/06/13 14:20
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.132 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.143 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: M and E MW-2
Date Sampled: 08/06/13 12:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/12/13 14:57	CWH0160	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		115 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E MW-2

Date Sampled: 08/06/13 12:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/08/13 20:21	CWH0120	CH30905
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/08/13 20:21	CWH0120	CH30905
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/08/13 20:21	CWH0120	CH30905
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/08/13 20:21	CWH0120	CH30905
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/08/13 20:21	CWH0120	CH30905
Acetone	ND (0.0100)	0.0027	8260B		1	08/08/13 20:21	CWH0120	CH30905
Benzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E MW-2

Date Sampled: 08/06/13 12:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Bromoform	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/08/13 20:21	CWH0120	CH30905
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/08/13 20:21	CWH0120	CH30905
Chloroform	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Isopropylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Styrene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E MW-2

Date Sampled: 08/06/13 12:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/08/13 20:21	CWH0120	CH30905
Toluene	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 20:21	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/08/13 20:21	CWH0120	CH30905
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/08/13 20:21	CWH0120	CH30905
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Xylene O	ND (0.0010)	0.0001	8260B		1	08/08/13 20:21	CWH0120	CH30905
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/08/13 20:21	CWH0120	CH30905
Xylenes (Total)	ND (0.0020)		8260B		1	08/08/13 20:21		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/08/13 20:21		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>113 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>122 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>98 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: M and E MW-2

Date Sampled: 08/06/13 12:10

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Acenaphthene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Anthracene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Chrysene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Fluoranthene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Fluorene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Naphthalene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Phenanthrene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609
Pyrene	ND (0.0002)		8270C SIM		1	08/07/13 16:55	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	36 %		30-130
Surrogate: 2-Fluorobiphenyl	49 %		30-130
Surrogate: Nitrobenzene-d5	51 %		30-130
Surrogate: p-Terphenyl-d14	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: M and E MW-2
Date Sampled: 08/06/13 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-02
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0395 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.0450 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314S
Date Sampled: 08/06/13 13:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	2.08 (0.19)		8100M		1	08/08/13 12:08	CWH0093	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		69 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 08/06/13 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/08/13 22:35	CWH0120	CH30905
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/08/13 22:35	CWH0120	CH30905
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/08/13 22:35	CWH0120	CH30905
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/08/13 22:35	CWH0120	CH30905
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/08/13 22:35	CWH0120	CH30905
Acetone	ND (0.0100)	0.0027	8260B		1	08/08/13 22:35	CWH0120	CH30905
Benzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 08/06/13 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Bromoform	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/08/13 22:35	CWH0120	CH30905
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/08/13 22:35	CWH0120	CH30905
Chloroform	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Isopropylbenzene	J 0.0007 (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Styrene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 08/06/13 13:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/08/13 22:35	CWH0120	CH30905
Toluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 22:35	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/08/13 22:35	CWH0120	CH30905
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/08/13 22:35	CWH0120	CH30905
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Xylene O	ND (0.0010)	0.0001	8260B		1	08/08/13 22:35	CWH0120	CH30905
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/08/13 22:35	CWH0120	CH30905
Xylenes (Total)	ND (0.0020)		8260B		1	08/08/13 22:35		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/08/13 22:35		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>111 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>116 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>95 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314S

Date Sampled: 08/06/13 13:15

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Acenaphthene	0.0025 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Acenaphthylene	0.0004 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Anthracene	0.0004 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Chrysene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Fluoranthene	0.0003 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Fluorene	0.0008 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Naphthalene	0.0003 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Phenanthrene	ND (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609
Pyrene	0.0004 (0.0002)		8270C SIM		1	08/07/13 17:44	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	49 %		30-130
Surrogate: 2-Fluorobiphenyl	64 %		30-130
Surrogate: Nitrobenzene-d5	64 %		30-130
Surrogate: p-Terphenyl-d14	64 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314S
Date Sampled: 08/06/13 13:15
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-03
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0894 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.0902 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314D
Date Sampled: 08/06/13 12:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.53 (0.19)		8100M		1	08/12/13 15:31	CWH0160	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		123 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/08/13 22:08	CWH0120	CH30905
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/08/13 22:08	CWH0120	CH30905
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/08/13 22:08	CWH0120	CH30905
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/08/13 22:08	CWH0120	CH30905
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/08/13 22:08	CWH0120	CH30905
Acetone	ND (0.0100)	0.0027	8260B		1	08/08/13 22:08	CWH0120	CH30905
Benzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Bromoform	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/08/13 22:08	CWH0120	CH30905
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/08/13 22:08	CWH0120	CH30905
Chloroform	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Isopropylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Styrene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-314D

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	J 0.0004 (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/08/13 22:08	CWH0120	CH30905
Toluene	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 22:08	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/08/13 22:08	CWH0120	CH30905
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/08/13 22:08	CWH0120	CH30905
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Xylene O	ND (0.0010)	0.0001	8260B		1	08/08/13 22:08	CWH0120	CH30905
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/08/13 22:08	CWH0120	CH30905
Xylenes (Total)	ND (0.0020)		8260B		1	08/08/13 22:08		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/08/13 22:08		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	105 %		70-130
Surrogate: 4-Bromofluorobenzene	108 %		70-130
Surrogate: Dibromofluoromethane	121 %		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-314D

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Acenaphthene	0.0031 (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Acenaphthylene	0.0002 (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Anthracene	ND (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Chrysene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Fluoranthene	ND (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Fluorene	ND (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Naphthalene	0.0004 (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Phenanthrene	ND (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609
Pyrene	0.0002 (0.0002)		8270C SIM		1	08/07/13 18:34	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	51 %		30-130
Surrogate: 2-Fluorobiphenyl	65 %		30-130
Surrogate: Nitrobenzene-d5	69 %		30-130
Surrogate: p-Terphenyl-d14	76 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-314D
Date Sampled: 08/06/13 12:45
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-04
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.154 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.317 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD-1
Date Sampled: 08/06/13 12:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/9/13 16:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.89 (0.19)		8100M		1	08/09/13 20:30	CWH0130	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		106 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/08/13 21:41	CWH0120	CH30905
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/08/13 21:41	CWH0120	CH30905
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/08/13 21:41	CWH0120	CH30905
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/08/13 21:41	CWH0120	CH30905
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/08/13 21:41	CWH0120	CH30905
Acetone	ND (0.0100)	0.0027	8260B		1	08/08/13 21:41	CWH0120	CH30905
Benzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Bromoform	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/08/13 21:41	CWH0120	CH30905
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/08/13 21:41	CWH0120	CH30905
Chloroform	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Isopropylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Styrene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/08/13 21:41	CWH0120	CH30905
Toluene	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 21:41	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/08/13 21:41	CWH0120	CH30905
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/08/13 21:41	CWH0120	CH30905
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Xylene O	ND (0.0010)	0.0001	8260B		1	08/08/13 21:41	CWH0120	CH30905
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/08/13 21:41	CWH0120	CH30905
Xylenes (Total)	ND (0.0020)		8260B		1	08/08/13 21:41		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/08/13 21:41		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>121 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>95 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-1

Date Sampled: 08/06/13 12:45

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Acenaphthene	0.0024 (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Anthracene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Chrysene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Fluoranthene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Fluorene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Naphthalene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Phenanthrene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609
Pyrene	ND (0.0002)		8270C SIM		1	08/07/13 19:23	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	41 %		30-130
Surrogate: 2-Fluorobiphenyl	49 %		30-130
Surrogate: Nitrobenzene-d5	53 %		30-130
Surrogate: p-Terphenyl-d14	67 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD-1
Date Sampled: 08/06/13 12:45
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-05
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.333 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.337 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310S
Date Sampled: 08/06/13 12:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/12/13 16:10	CWH0160	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		98 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 08/06/13 12:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/13/13 11:38	CWH0172	CH31329
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/13/13 11:38	CWH0172	CH31329
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/13/13 11:38	CWH0172	CH31329
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/13/13 11:38	CWH0172	CH31329
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/13/13 11:38	CWH0172	CH31329
Acetone	ND (0.0100)	0.0027	8260B		1	08/13/13 11:38	CWH0172	CH31329
Benzene	0.0035 (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 08/06/13 12:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Bromoform	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/13/13 11:38	CWH0172	CH31329
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/13/13 11:38	CWH0172	CH31329
Chloroform	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Ethylbenzene	J 0.0004 (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Isopropylbenzene	J 0.0004 (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Styrene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 08/06/13 12:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/13/13 11:38	CWH0172	CH31329
Toluene	ND (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/13/13 11:38	CWH0172	CH31329
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/13/13 11:38	CWH0172	CH31329
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/13/13 11:38	CWH0172	CH31329
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Xylene O	J 0.0006 (0.0010)	0.0001	8260B		1	08/13/13 11:38	CWH0172	CH31329
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/13/13 11:38	CWH0172	CH31329
Xylenes (Total)	ND (0.0020)		8260B		1	08/13/13 11:38		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/13/13 11:38		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	114 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	112 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	127 %		70-130
<i>Surrogate: Toluene-d8</i>	89 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310S

Date Sampled: 08/06/13 12:15

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Acenaphthene	0.0008 (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Anthracene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Chrysene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Fluoranthene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Fluorene	0.0002 (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Naphthalene	0.0002 (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Phenanthrene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609
Pyrene	ND (0.0002)		8270C SIM		1	08/07/13 20:12	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	43 %		30-130
Surrogate: 2-Fluorobiphenyl	51 %		30-130
Surrogate: Nitrobenzene-d5	52 %		30-130
Surrogate: p-Terphenyl-d14	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310S
Date Sampled: 08/06/13 12:15
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-06
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0414 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.0548 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310D
Date Sampled: 08/06/13 12:37
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	13.5 (0.19)		8100M		1	08/08/13 14:43	CWH0093	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		82 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 08/06/13 12:37

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	0.130 (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0500)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,1-Dichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,1-Dichloroethene	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,1-Dichloropropene	ND (0.200)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2,4-Trimethylbenzene	0.473 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.500)	0.100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2-Dibromoethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2-Dichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,2-Dichloropropane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,3,5-Trimethylbenzene	0.102 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,3-Dichloropropane	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
1,4-Dioxane - Screen	ND (50.0)	19.0	8260B		100	08/08/13 23:55	CWH0120	CH30905
1-Chlorohexane	ND (0.100)	0.0400	8260B		100	08/08/13 23:55	CWH0120	CH30905
2,2-Dichloropropane	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
2-Butanone	ND (1.00)	0.340	8260B		100	08/08/13 23:55	CWH0120	CH30905
2-Chlorotoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
2-Hexanone	ND (1.00)	0.150	8260B		100	08/08/13 23:55	CWH0120	CH30905
4-Chlorotoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
4-Isopropyltoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (2.50)	0.160	8260B		100	08/08/13 23:55	CWH0120	CH30905
Acetone	ND (1.00)	0.270	8260B		100	08/08/13 23:55	CWH0120	CH30905
Benzene	0.678 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 08/06/13 12:37

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.200)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Bromochloromethane	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
Bromodichloromethane	ND (0.0600)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Bromoform	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Bromomethane	ND (0.200)	0.0400	8260B		100	08/08/13 23:55	CWH0120	CH30905
Carbon Disulfide	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Carbon Tetrachloride	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Chlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Chloroethane	ND (0.200)	0.0400	8260B		100	08/08/13 23:55	CWH0120	CH30905
Chloroform	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Chloromethane	ND (0.200)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0400)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Dibromochloromethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Dibromomethane	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.200)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
Diethyl Ether	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
Di-isopropyl ether	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Ethylbenzene	0.720 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0600)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Hexachloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Isopropylbenzene	J 0.0630 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
Methylene Chloride	ND (0.200)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Naphthalene	6.60 (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
n-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
n-Propylbenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
sec-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Styrene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
tert-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 08/06/13 12:37

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Tetrachloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Tetrahydrofuran	ND (0.500)	0.160	8260B		100	08/08/13 23:55	CWH0120	CH30905
Toluene	0.174 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.100)	0.0300	8260B		100	08/08/13 23:55	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0400)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Trichloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Trichlorofluoromethane	ND (0.100)	0.0400	8260B		100	08/08/13 23:55	CWH0120	CH30905
Vinyl Acetate	ND (0.500)	0.0500	8260B		100	08/08/13 23:55	CWH0120	CH30905
Vinyl Chloride	ND (0.100)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Xylene O	0.489 (0.100)	0.0100	8260B		100	08/08/13 23:55	CWH0120	CH30905
Xylene P,M	0.478 (0.200)	0.0200	8260B		100	08/08/13 23:55	CWH0120	CH30905
Xylenes (Total)	0.967 (0.200)		8260B		100	08/08/13 23:55		[CALC]
Trihalomethanes (Total)	ND (0.360)		8260B			08/08/13 23:55		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	108 %		70-130
Surrogate: 4-Bromofluorobenzene	110 %		70-130
Surrogate: Dibromofluoromethane	118 %		70-130
Surrogate: Toluene-d8	94 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-310D

Date Sampled: 08/06/13 12:37

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.403 (0.0187)		8270C SIM		100	08/09/13 18:13	CWH0129	CH30609
Acenaphthene	0.0914 (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Acenaphthylene	0.0454 (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Anthracene	0.0024 (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Benzo(a)anthracene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Benzo(a)pyrene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Benzo(b)fluoranthene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Benzo(g,h,i)perylene	ND (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Benzo(k)fluoranthene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Chrysene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Dibenzo(a,h)Anthracene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Fluoranthene	ND (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Fluorene	0.0311 (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.0005)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Naphthalene	4.57 (0.187)		8270C SIM		1000	08/09/13 19:03	CWH0129	CH30609
Phenanthrene	0.0207 (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609
Pyrene	ND (0.0019)		8270C SIM		10	08/09/13 17:21	CWH0129	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	54 %		30-130
Surrogate: 2-Fluorobiphenyl	65 %		30-130
Surrogate: Nitrobenzene-d5	117 %		30-130
Surrogate: p-Terphenyl-d14	91 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-310D
Date Sampled: 08/06/13 12:37
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-07
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.133 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.139 (0.0050)		9014		1	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-312S
Date Sampled: 08/06/13 14:31
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	8.84 (0.20)		8100M		1	08/08/13 15:22	CWH0093	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		100 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 08/06/13 14:31

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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 (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0500)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,1-Dichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,1-Dichloroethene	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,1-Dichloropropene	ND (0.200)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2,4-Trimethylbenzene	0.104 (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.500)	0.100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2-Dibromoethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2-Dichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,2-Dichloropropane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,3,5-Trimethylbenzene	J 0.0240 (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,3-Dichloropropane	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
1,4-Dioxane - Screen	ND (50.0)	19.0	8260B		100	08/08/13 23:28	CWH0120	CH30905
1-Chlorohexane	ND (0.100)	0.0400	8260B		100	08/08/13 23:28	CWH0120	CH30905
2,2-Dichloropropane	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
2-Butanone	ND (1.00)	0.340	8260B		100	08/08/13 23:28	CWH0120	CH30905
2-Chlorotoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
2-Hexanone	ND (1.00)	0.150	8260B		100	08/08/13 23:28	CWH0120	CH30905
4-Chlorotoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
4-Isopropyltoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (2.50)	0.160	8260B		100	08/08/13 23:28	CWH0120	CH30905
Acetone	ND (1.00)	0.270	8260B		100	08/08/13 23:28	CWH0120	CH30905
Benzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 08/06/13 14:31

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.200)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Bromochloromethane	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
Bromodichloromethane	ND (0.0600)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Bromoform	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Bromomethane	ND (0.200)	0.0400	8260B		100	08/08/13 23:28	CWH0120	CH30905
Carbon Disulfide	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Carbon Tetrachloride	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Chlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Chloroethane	ND (0.200)	0.0400	8260B		100	08/08/13 23:28	CWH0120	CH30905
Chloroform	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Chloromethane	ND (0.200)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0400)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Dibromochloromethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Dibromomethane	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.200)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
Diethyl Ether	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
Di-isopropyl ether	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Ethylbenzene	0.546 (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0600)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Hexachloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Isopropylbenzene	J 0.0220 (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
Methylene Chloride	ND (0.200)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Naphthalene	2.03 (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
n-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
n-Propylbenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
sec-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Styrene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
tert-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 08/06/13 14:31

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Tetrachloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Tetrahydrofuran	ND (0.500)	0.160	8260B		100	08/08/13 23:28	CWH0120	CH30905
Toluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.100)	0.0300	8260B		100	08/08/13 23:28	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0400)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Trichloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Trichlorofluoromethane	ND (0.100)	0.0400	8260B		100	08/08/13 23:28	CWH0120	CH30905
Vinyl Acetate	ND (0.500)	0.0500	8260B		100	08/08/13 23:28	CWH0120	CH30905
Vinyl Chloride	ND (0.100)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Xylene O	J 0.0880 (0.100)	0.0100	8260B		100	08/08/13 23:28	CWH0120	CH30905
Xylene P,M	J 0.0270 (0.200)	0.0200	8260B		100	08/08/13 23:28	CWH0120	CH30905
Xylenes (Total)	ND (0.200)		8260B		100	08/08/13 23:28		[CALC]
Trihalomethanes (Total)	ND (0.360)		8260B			08/08/13 23:28		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	109 %		70-130
Surrogate: 4-Bromofluorobenzene	112 %		70-130
Surrogate: Dibromofluoromethane	122 %		70-130
Surrogate: Toluene-d8	94 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312S

Date Sampled: 08/06/13 14:31

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.101 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Acenaphthene	0.221 (0.0187)		8270C SIM		100	08/07/13 22:40	CWH0086	CH30609
Acenaphthylene	0.0336 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Anthracene	0.0377 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Benzo(a)anthracene	0.0145 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Benzo(a)pyrene	0.0123 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Benzo(b)fluoranthene	0.0090 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Benzo(g,h,i)perylene	0.0043 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Benzo(k)fluoranthene	0.0033 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Chrysene	0.0137 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Dibenzo(a,h)Anthracene	0.0012 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Fluoranthene	0.0327 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Fluorene	0.0811 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	0.0045 (0.0005)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Naphthalene	1.78 (0.187)		8270C SIM		1000	08/09/13 20:42	CWH0086	CH30609
Phenanthrene	0.114 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609
Pyrene	0.0439 (0.0019)		8270C SIM		10	08/07/13 21:51	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	52 %		30-130
Surrogate: 2-Fluorobiphenyl	75 %		30-130
Surrogate: Nitrobenzene-d5	73 %		30-130
Surrogate: p-Terphenyl-d14	85 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-312S
Date Sampled: 08/06/13 14:31
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-08
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.300 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.307 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-312D
Date Sampled: 08/06/13 13:51
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/7/13 12:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	9.42 (0.19)		8100M		1	08/08/13 16:02	CWH0093	CH30610
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		78 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 08/06/13 13:51

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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 (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0500)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,1-Dichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,1-Dichloroethene	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,1-Dichloropropene	ND (0.200)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2,4-Trimethylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.500)	0.100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2-Dibromoethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2-Dichloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,2-Dichloropropane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,3,5-Trimethylbenzene	J 0.0260 (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,3-Dichloropropane	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
1,4-Dioxane - Screen	ND (50.0)	19.0	8260B		100	08/08/13 23:01	CWH0120	CH30905
1-Chlorohexane	ND (0.100)	0.0400	8260B		100	08/08/13 23:01	CWH0120	CH30905
2,2-Dichloropropane	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
2-Butanone	ND (1.00)	0.340	8260B		100	08/08/13 23:01	CWH0120	CH30905
2-Chlorotoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
2-Hexanone	ND (1.00)	0.150	8260B		100	08/08/13 23:01	CWH0120	CH30905
4-Chlorotoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
4-Isopropyltoluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (2.50)	0.160	8260B		100	08/08/13 23:01	CWH0120	CH30905
Acetone	ND (1.00)	0.270	8260B		100	08/08/13 23:01	CWH0120	CH30905
Benzene	3.56 (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 08/06/13 13:51

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.200)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Bromochloromethane	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
Bromodichloromethane	ND (0.0600)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Bromoform	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Bromomethane	ND (0.200)	0.0400	8260B		100	08/08/13 23:01	CWH0120	CH30905
Carbon Disulfide	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Carbon Tetrachloride	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Chlorobenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Chloroethane	ND (0.200)	0.0400	8260B		100	08/08/13 23:01	CWH0120	CH30905
Chloroform	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Chloromethane	ND (0.200)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0400)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Dibromochloromethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Dibromomethane	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.200)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
Diethyl Ether	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
Di-isopropyl ether	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Ethylbenzene	1.26 (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0600)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Hexachloroethane	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Isopropylbenzene	J 0.0540 (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
Methylene Chloride	ND (0.200)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Naphthalene	4.30 (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
n-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
n-Propylbenzene	J 0.0220 (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
sec-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Styrene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
tert-Butylbenzene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 08/06/13 13:51

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Tetrachloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Tetrahydrofuran	ND (0.500)	0.160	8260B		100	08/08/13 23:01	CWH0120	CH30905
Toluene	ND (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.100)	0.0300	8260B		100	08/08/13 23:01	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0400)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Trichloroethene	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Trichlorofluoromethane	ND (0.100)	0.0400	8260B		100	08/08/13 23:01	CWH0120	CH30905
Vinyl Acetate	ND (0.500)	0.0500	8260B		100	08/08/13 23:01	CWH0120	CH30905
Vinyl Chloride	ND (0.100)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Xylene O	0.309 (0.100)	0.0100	8260B		100	08/08/13 23:01	CWH0120	CH30905
Xylene P,M	J 0.0300 (0.200)	0.0200	8260B		100	08/08/13 23:01	CWH0120	CH30905
Xylenes (Total)	0.339 (0.200)		8260B		100	08/08/13 23:01		[CALC]
Trihalomethanes (Total)	ND (0.360)		8260B			08/08/13 23:01		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	107 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	107 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	122 %		70-130
<i>Surrogate: Toluene-d8</i>	93 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-312D

Date Sampled: 08/06/13 13:51

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/7/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.189 (0.0187)		8270C SIM		100	08/08/13 0:19	CWH0086	CH30609
Acenaphthene	0.0771 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Acenaphthylene	0.0033 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Anthracene	0.0050 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Benzo(a)anthracene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Benzo(a)pyrene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Benzo(b)fluoranthene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Benzo(g,h,i)perylene	ND (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Benzo(k)fluoranthene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Chrysene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Dibenzo(a,h)Anthracene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Fluoranthene	0.0023 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Fluorene	0.0255 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Indeno(1,2,3-cd)Pyrene	ND (0.0005)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Naphthalene	2.98 (0.187)		8270C SIM		1000	08/09/13 21:31	CWH0086	CH30609
Phenanthrene	0.0246 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609
Pyrene	0.0028 (0.0019)		8270C SIM		10	08/07/13 23:30	CWH0086	CH30609

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	47 %		30-130
Surrogate: 2-Fluorobiphenyl	58 %		30-130
Surrogate: Nitrobenzene-d5	75 %		30-130
Surrogate: p-Terphenyl-d14	73 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-312D
Date Sampled: 08/06/13 13:51
Percent Solids: N/A

ESS Laboratory Work Order: 1308084
ESS Laboratory Sample ID: 1308084-09
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.523 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908
Total Cyanide (LL)	0.531 (0.0250)		9014		5	JLK	08/09/13 11:42	mg/L	CH30908



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank - 8613

Date Sampled: 08/06/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-10

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/08/13 19:01	CWH0120	CH30905
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/08/13 19:01	CWH0120	CH30905
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/08/13 19:01	CWH0120	CH30905
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/08/13 19:01	CWH0120	CH30905
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/08/13 19:01	CWH0120	CH30905
Acetone	ND (0.0100)	0.0027	8260B		1	08/08/13 19:01	CWH0120	CH30905
Benzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank - 8613

Date Sampled: 08/06/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-10

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Bromoform	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/08/13 19:01	CWH0120	CH30905
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/08/13 19:01	CWH0120	CH30905
Chloroform	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Isopropylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Styrene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: Trip Blank - 8613

Date Sampled: 08/06/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308084

ESS Laboratory Sample ID: 1308084-10

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/08/13 19:01	CWH0120	CH30905
Toluene	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/08/13 19:01	CWH0120	CH30905
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/08/13 19:01	CWH0120	CH30905
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/08/13 19:01	CWH0120	CH30905
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905
Xylene O	ND (0.0010)	0.0001	8260B		1	08/08/13 19:01	CWH0120	CH30905
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/08/13 19:01	CWH0120	CH30905

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	105 %		70-130
Surrogate: 4-Bromofluorobenzene	110 %		70-130
Surrogate: Dibromofluoromethane	119 %		70-130
Surrogate: Toluene-d8	92 %		70-130



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CH30610 - 3510C

Blank

Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacotane (C30)	ND	0.005	mg/L							

<i>Surrogate: O-Terphenyl</i>	<i>0.115</i>		mg/L	<i>0.1000</i>		<i>115</i>	<i>40-140</i>			

LCS

Decane (C10)	0.036	0.005	mg/L	0.05000		72	40-140			
Docosane (C22)	0.059	0.005	mg/L	0.05000		118	40-140			
Dodecane (C12)	0.047	0.005	mg/L	0.05000		95	40-140			
Eicosane (C20)	0.058	0.005	mg/L	0.05000		116	40-140			
Hexacosane (C26)	0.058	0.005	mg/L	0.05000		116	40-140			
Hexadecane (C16)	0.058	0.005	mg/L	0.05000		116	40-140			
Nonadecane (C19)	0.058	0.005	mg/L	0.05000		116	40-140			
Nonane (C9)	0.028	0.005	mg/L	0.05000		56	30-140			
Octacosane (C28)	0.057	0.005	mg/L	0.05000		114	40-140			
Octadecane (C18)	0.058	0.005	mg/L	0.05000		116	40-140			
Tetracosane (C24)	0.060	0.005	mg/L	0.05000		120	40-140			
Tetradecane (C14)	0.056	0.005	mg/L	0.05000		113	40-140			
Total Petroleum Hydrocarbons	0.786	0.20	mg/L	0.7000		112	40-140			
Triacotane (C30)	0.055	0.005	mg/L	0.05000		110	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>0.116</i>		mg/L	<i>0.1000</i>		<i>116</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	0.040	0.005	mg/L	0.05000		80	40-140	10	25	
Docosane (C22)	0.062	0.005	mg/L	0.05000		123	40-140	5	25	
Dodecane (C12)	0.050	0.005	mg/L	0.05000		101	40-140	6	25	
Eicosane (C20)	0.061	0.005	mg/L	0.05000		121	40-140	5	25	
Hexacosane (C26)	0.060	0.005	mg/L	0.05000		120	40-140	4	25	
Hexadecane (C16)	0.060	0.005	mg/L	0.05000		121	40-140	4	25	
Nonadecane (C19)	0.061	0.005	mg/L	0.05000		122	40-140	5	25	
Nonane (C9)	0.031	0.005	mg/L	0.05000		62	30-140	11	25	
Octacosane (C28)	0.059	0.005	mg/L	0.05000		119	40-140	4	25	
Octadecane (C18)	0.061	0.005	mg/L	0.05000		121	40-140	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CH30610 - 3510C										
Tetracosane (C24)	0.062	0.005	mg/L	0.05000		125	40-140	4	25	
Tetradecane (C14)	0.059	0.005	mg/L	0.05000		118	40-140	4	25	
Total Petroleum Hydrocarbons	0.836	0.20	mg/L	0.7000		119	40-140	6	25	
Triacontane (C30)	0.057	0.005	mg/L	0.05000		114	40-140	3	25	
<i>Surrogate: O-Terphenyl</i>	<i>0.119</i>		mg/L	<i>0.1000</i>		<i>119</i>	<i>40-140</i>			
Batch CH30927 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
<i>Surrogate: O-Terphenyl</i>	<i>0.108</i>		mg/L	<i>0.1000</i>		<i>108</i>	<i>40-140</i>			
LCS										
Decane (C10)	0.044	0.005	mg/L	0.05000		87	40-140			
Docosane (C22)	0.054	0.005	mg/L	0.05000		108	40-140			
Dodecane (C12)	0.048	0.005	mg/L	0.05000		96	40-140			
Eicosane (C20)	0.053	0.005	mg/L	0.05000		106	40-140			
Hexacosane (C26)	0.054	0.005	mg/L	0.05000		108	40-140			
Hexadecane (C16)	0.052	0.005	mg/L	0.05000		104	40-140			
Nonadecane (C19)	0.053	0.005	mg/L	0.05000		107	40-140			
Nonane (C9)	0.037	0.005	mg/L	0.05000		73	30-140			
Octacosane (C28)	0.054	0.005	mg/L	0.05000		107	40-140			
Octadecane (C18)	0.053	0.005	mg/L	0.05000		106	40-140			
Tetracosane (C24)	0.055	0.005	mg/L	0.05000		110	40-140			
Tetradecane (C14)	0.051	0.005	mg/L	0.05000		101	40-140			
Total Petroleum Hydrocarbons	0.780	0.20	mg/L	0.7000		111	40-140			
Triacontane (C30)	0.054	0.005	mg/L	0.05000		107	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>0.0474</i>		mg/L	<i>0.1000</i>		<i>47</i>	<i>40-140</i>			
LCS Dup										
Decane (C10)	0.045	0.005	mg/L	0.05000		90	40-140	3	25	
Docosane (C22)	0.054	0.005	mg/L	0.05000		109	40-140	1	25	
Dodecane (C12)	0.049	0.005	mg/L	0.05000		98	40-140	3	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CH30927 - 3510C

Eicosane (C20)	0.053	0.005	mg/L	0.05000		107	40-140	1	25	
Hexacosane (C26)	0.054	0.005	mg/L	0.05000		108	40-140	0.5	25	
Hexadecane (C16)	0.053	0.005	mg/L	0.05000		106	40-140	1	25	
Nonadecane (C19)	0.054	0.005	mg/L	0.05000		107	40-140	0.6	25	
Nonane (C9)	0.038	0.005	mg/L	0.05000		75	30-140	3	25	
Octacosane (C28)	0.054	0.005	mg/L	0.05000		109	40-140	1	25	
Octadecane (C18)	0.053	0.005	mg/L	0.05000		107	40-140	1	25	
Tetracosane (C24)	0.055	0.005	mg/L	0.05000		111	40-140	0.5	25	
Tetradecane (C14)	0.052	0.005	mg/L	0.05000		103	40-140	2	25	
Total Petroleum Hydrocarbons	0.785	0.20	mg/L	0.7000		112	40-140	0.7	25	
Triacotane (C30)	0.054	0.005	mg/L	0.05000		108	40-140	0.3	25	

Surrogate: O-Terphenyl

0.0477

mg/L

0.1000

48

40-140

8260B Volatile Organic Compounds

Batch CH30905 - 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: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH30905 - 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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ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH30905 - 5030B

Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	25.3		ug/L	25.00		101	70-130			
Surrogate: 4-Bromofluorobenzene	27.4		ug/L	25.00		110	70-130			
Surrogate: Dibromofluoromethane	29.6		ug/L	25.00		118	70-130			
Surrogate: Toluene-d8	23.8		ug/L	25.00		95	70-130			

LCS

1,1,1,2-Tetrachloroethane	10.3		ug/L	10.00		103	70-130			
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2,2-Tetrachloroethane	11.0		ug/L	10.00		110	70-130			
1,1,2-Trichloroethane	9.36		ug/L	10.00		94	70-130			
1,1-Dichloroethane	9.69		ug/L	10.00		97	70-130			
1,1-Dichloroethene	10.8		ug/L	10.00		108	70-130			
1,1-Dichloropropene	11.7		ug/L	10.00		117	70-130			
1,2,3-Trichlorobenzene	12.4		ug/L	10.00		124	70-130			
1,2,3-Trichloropropane	9.24		ug/L	10.00		92	70-130			
1,2,4-Trichlorobenzene	12.7		ug/L	10.00		127	70-130			
1,2,4-Trimethylbenzene	11.4		ug/L	10.00		114	70-130			
1,2-Dibromo-3-Chloropropane	9.90		ug/L	10.00		99	70-130			
1,2-Dibromoethane	10.6		ug/L	10.00		106	70-130			
1,2-Dichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,2-Dichloroethane	9.93		ug/L	10.00		99	70-130			
1,2-Dichloropropane	9.79		ug/L	10.00		98	70-130			
1,3,5-Trimethylbenzene	11.8		ug/L	10.00		118	70-130			
1,3-Dichlorobenzene	11.1		ug/L	10.00		111	70-130			
1,3-Dichloropropane	10.7		ug/L	10.00		107	70-130			
1,4-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,4-Dioxane - Screen	488		ug/L	200.0		244	0-332			
1-Chlorohexane	9.44		ug/L	10.00		94	70-130			
2,2-Dichloropropane	10.8		ug/L	10.00		108	70-130			
2-Butanone	51.0		ug/L	50.00		102	70-130			
2-Chlorotoluene	11.7		ug/L	10.00		117	70-130			
2-Hexanone	50.6		ug/L	50.00		101	70-130			
4-Chlorotoluene	10.5		ug/L	10.00		105	70-130			
4-Isopropyltoluene	11.6		ug/L	10.00		116	70-130			
4-Methyl-2-Pentanone	50.6		ug/L	50.00		101	70-130			
Acetone	50.5		ug/L	50.00		101	70-130			
Benzene	10.3		ug/L	10.00		103	70-130			
Bromobenzene	11.6		ug/L	10.00		116	70-130			
Bromochloromethane	10.1		ug/L	10.00		101	70-130			
Bromodichloromethane	10.3		ug/L	10.00		103	70-130			
Bromoform	10.1		ug/L	10.00		101	70-130			
Bromomethane	6.88		ug/L	10.00		69	70-130			B-
Carbon Disulfide	10.0		ug/L	10.00		100	70-130			
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130			
Chlorobenzene	11.1		ug/L	10.00		111	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH30905 - 5030B

Chloroethane	9.78		ug/L	10.00		98	70-130			
Chloroform	10.6		ug/L	10.00		106	70-130			
Chloromethane	8.39		ug/L	10.00		84	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	10.8		ug/L	10.00		108	70-130			
Dibromochloromethane	9.06		ug/L	10.00		91	70-130			
Dibromomethane	10.4		ug/L	10.00		104	70-130			
Dichlorodifluoromethane	7.30		ug/L	10.00		73	70-130			
Diethyl Ether	10.3		ug/L	10.00		103	70-130			
Di-isopropyl ether	10.0		ug/L	10.00		100	70-130			
Ethyl tertiary-butyl ether	7.84		ug/L	10.00		78	70-130			
Ethylbenzene	10.8		ug/L	10.00		108	70-130			
Hexachlorobutadiene	11.5		ug/L	10.00		115	70-130			
Hexachloroethane	10.6		ug/L	10.00		106	70-130			
Isopropylbenzene	11.1		ug/L	10.00		111	70-130			
Methyl tert-Butyl Ether	8.77		ug/L	10.00		88	70-130			
Methylene Chloride	9.36		ug/L	10.00		94	70-130			
Naphthalene	11.3		ug/L	10.00		113	70-130			
n-Butylbenzene	12.0		ug/L	10.00		120	70-130			
n-Propylbenzene	10.8		ug/L	10.00		108	70-130			
sec-Butylbenzene	11.8		ug/L	10.00		118	70-130			
Styrene	10.5		ug/L	10.00		105	70-130			
tert-Butylbenzene	11.5		ug/L	10.00		115	70-130			
Tertiary-amyl methyl ether	7.51		ug/L	10.00		75	70-130			
Tetrachloroethene	8.85		ug/L	10.00		88	70-130			
Tetrahydrofuran	11.2		ug/L	10.00		112	70-130			
Toluene	10.3		ug/L	10.00		103	70-130			
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
trans-1,3-Dichloropropene	9.21		ug/L	10.00		92	70-130			
Trichloroethene	10.5		ug/L	10.00		105	70-130			
Trichlorofluoromethane	9.55		ug/L	10.00		96	70-130			
Vinyl Acetate	12.3		ug/L	10.00		123	70-130			
Vinyl Chloride	9.91		ug/L	10.00		99	70-130			
Xylene O	10.9		ug/L	10.00		109	70-130			
Xylene P,M	23.2		ug/L	20.00		116	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.2		ug/L	25.00		93	70-130			
Surrogate: 4-Bromofluorobenzene	25.1		ug/L	25.00		101	70-130			
Surrogate: Dibromofluoromethane	24.4		ug/L	25.00		97	70-130			
Surrogate: Toluene-d8	26.3		ug/L	25.00		105	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.60		ug/L	10.00		96	70-130	7	25	
1,1,1-Trichloroethane	10.0		ug/L	10.00		100	70-130	1	25	
1,1,2,2-Tetrachloroethane	9.99		ug/L	10.00		100	70-130	10	25	
1,1,2-Trichloroethane	9.85		ug/L	10.00		98	70-130	5	25	
1,1-Dichloroethane	10.4		ug/L	10.00		104	70-130	7	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH30905 - 5030B

1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	6	25	
1,1-Dichloropropene	11.2		ug/L	10.00		112	70-130	4	25	
1,2,3-Trichlorobenzene	11.2		ug/L	10.00		112	70-130	11	25	
1,2,3-Trichloropropane	9.04		ug/L	10.00		90	70-130	2	25	
1,2,4-Trichlorobenzene	11.8		ug/L	10.00		118	70-130	7	25	
1,2,4-Trimethylbenzene	11.1		ug/L	10.00		111	70-130	3	25	
1,2-Dibromo-3-Chloropropane	10.8		ug/L	10.00		108	70-130	9	25	
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130	5	25	
1,2-Dichlorobenzene	10.8		ug/L	10.00		108	70-130	4	25	
1,2-Dichloroethane	10.2		ug/L	10.00		102	70-130	3	25	
1,2-Dichloropropane	9.89		ug/L	10.00		99	70-130	1	25	
1,3,5-Trimethylbenzene	11.7		ug/L	10.00		117	70-130	1	25	
1,3-Dichlorobenzene	10.9		ug/L	10.00		109	70-130	2	25	
1,3-Dichloropropane	10.2		ug/L	10.00		102	70-130	5	25	
1,4-Dichlorobenzene	10.0		ug/L	10.00		100	70-130	7	25	
1,4-Dioxane - Screen	432		ug/L	200.0		216	0-332	12	200	
1-Chlorohexane	9.54		ug/L	10.00		95	70-130	1	25	
2,2-Dichloropropane	10.9		ug/L	10.00		109	70-130	1	25	
2-Butanone	50.6		ug/L	50.00		101	70-130	0.7	25	
2-Chlorotoluene	11.6		ug/L	10.00		116	70-130	0.7	25	
2-Hexanone	47.1		ug/L	50.00		94	70-130	7	25	
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130	3	25	
4-Isopropyltoluene	10.9		ug/L	10.00		109	70-130	6	25	
4-Methyl-2-Pentanone	50.0		ug/L	50.00		100	70-130	1	25	
Acetone	44.0		ug/L	50.00		88	70-130	14	25	
Benzene	10.6		ug/L	10.00		106	70-130	3	25	
Bromobenzene	10.8		ug/L	10.00		108	70-130	8	25	
Bromochloromethane	10.8		ug/L	10.00		108	70-130	6	25	
Bromodichloromethane	10.7		ug/L	10.00		107	70-130	4	25	
Bromoform	9.50		ug/L	10.00		95	70-130	6	25	
Bromomethane	7.67		ug/L	10.00		77	70-130	11	25	
Carbon Disulfide	10.2		ug/L	10.00		102	70-130	2	25	
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130	0.3	25	
Chlorobenzene	10.3		ug/L	10.00		103	70-130	7	25	
Chloroethane	8.67		ug/L	10.00		87	70-130	12	25	
Chloroform	10.4		ug/L	10.00		104	70-130	1	25	
Chloromethane	8.45		ug/L	10.00		84	70-130	0.7	25	
cis-1,2-Dichloroethene	11.0		ug/L	10.00		110	70-130	7	25	
cis-1,3-Dichloropropene	11.2		ug/L	10.00		112	70-130	4	25	
Dibromochloromethane	8.95		ug/L	10.00		90	70-130	1	25	
Dibromomethane	10.3		ug/L	10.00		103	70-130	0.8	25	
Dichlorodifluoromethane	6.87		ug/L	10.00		69	70-130	6	25	B-
Diethyl Ether	9.38		ug/L	10.00		94	70-130	9	25	
Di-isopropyl ether	10.1		ug/L	10.00		101	70-130	1	25	
Ethyl tertiary-butyl ether	8.28		ug/L	10.00		83	70-130	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH30905 - 5030B

Ethylbenzene	10.4		ug/L	10.00		104	70-130	4	25	
Hexachlorobutadiene	10.6		ug/L	10.00		106	70-130	8	25	
Hexachloroethane	10.8		ug/L	10.00		108	70-130	2	25	
Isopropylbenzene	11.1		ug/L	10.00		111	70-130	0.2	25	
Methyl tert-Butyl Ether	9.26		ug/L	10.00		93	70-130	5	25	
Methylene Chloride	9.76		ug/L	10.00		98	70-130	4	25	
Naphthalene	10.5		ug/L	10.00		105	70-130	8	25	
n-Butylbenzene	11.0		ug/L	10.00		110	70-130	9	25	
n-Propylbenzene	10.6		ug/L	10.00		106	70-130	2	25	
sec-Butylbenzene	11.5		ug/L	10.00		115	70-130	2	25	
Styrene	10.2		ug/L	10.00		102	70-130	3	25	
tert-Butylbenzene	10.7		ug/L	10.00		107	70-130	7	25	
Tertiary-amyl methyl ether	7.52		ug/L	10.00		75	70-130	0.1	25	
Tetrachloroethene	8.00		ug/L	10.00		80	70-130	10	25	
Tetrahydrofuran	9.97		ug/L	10.00		100	70-130	12	25	
Toluene	10.5		ug/L	10.00		105	70-130	2	25	
trans-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.8	25	
trans-1,3-Dichloropropene	9.12		ug/L	10.00		91	70-130	1	25	
Trichloroethene	10.1		ug/L	10.00		101	70-130	3	25	
Trichlorofluoromethane	8.97		ug/L	10.00		90	70-130	6	25	
Vinyl Acetate	12.0		ug/L	10.00		120	70-130	2	25	
Vinyl Chloride	10.2		ug/L	10.00		102	70-130	3	25	
Xylene O	10.1		ug/L	10.00		101	70-130	8	25	
Xylene P,M	21.8		ug/L	20.00		109	70-130	6	25	
Surrogate: 1,2-Dichloroethane-d4	23.8		ug/L	25.00		95	70-130			
Surrogate: 4-Bromofluorobenzene	23.8		ug/L	25.00		95	70-130			
Surrogate: Dibromofluoromethane	26.0		ug/L	25.00		104	70-130			
Surrogate: Toluene-d8	25.1		ug/L	25.00		100	70-130			

Batch CH31237 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31237 - 5030B

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
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



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

8260B Volatile Organic Compounds

Batch CH31237 - 5030B

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							
Surrogate: 1,2-Dichloroethane-d4	0.0289		mg/L	0.02500		116	70-130			
Surrogate: 4-Bromofluorobenzene	0.0286		mg/L	0.02500		114	70-130			
Surrogate: Dibromofluoromethane	0.0334		mg/L	0.02500		134	70-130			S+
Surrogate: Toluene-d8	0.0229		mg/L	0.02500		92	70-130			

LCS

1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130			
1,1,1-Trichloroethane	10.6		ug/L	10.00		106	70-130			
1,1,2,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2-Trichloroethane	10.0		ug/L	10.00		100	70-130			
1,1-Dichloroethane	10.3		ug/L	10.00		103	70-130			
1,1-Dichloroethene	11.0		ug/L	10.00		110	70-130			
1,1-Dichloropropene	11.4		ug/L	10.00		114	70-130			
1,2,3-Trichlorobenzene	11.5		ug/L	10.00		115	70-130			
1,2,3-Trichloropropane	9.47		ug/L	10.00		95	70-130			
1,2,4-Trichlorobenzene	12.3		ug/L	10.00		123	70-130			
1,2,4-Trimethylbenzene	11.1		ug/L	10.00		111	70-130			
1,2-Dibromo-3-Chloropropane	9.82		ug/L	10.00		98	70-130			
1,2-Dibromoethane	10.5		ug/L	10.00		105	70-130			
1,2-Dichlorobenzene	11.0		ug/L	10.00		110	70-130			
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130			
1,2-Dichloropropane	10.2		ug/L	10.00		102	70-130			
1,3,5-Trimethylbenzene	12.0		ug/L	10.00		120	70-130			
1,3-Dichlorobenzene	11.4		ug/L	10.00		114	70-130			
1,3-Dichloropropane	10.7		ug/L	10.00		107	70-130			
1,4-Dichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,4-Dioxane - Screen	376		ug/L	200.0		188	0-332			
1-Chlorohexane	9.93		ug/L	10.00		99	70-130			
2,2-Dichloropropane	11.9		ug/L	10.00		119	70-130			
2-Butanone	52.7		ug/L	50.00		105	70-130			
2-Chlorotoluene	12.0		ug/L	10.00		120	70-130			
2-Hexanone	51.5		ug/L	50.00		103	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31237 - 5030B

4-Chlorotoluene	11.1		ug/L	10.00		111	70-130			
4-Isopropyltoluene	11.5		ug/L	10.00		115	70-130			
4-Methyl-2-Pentanone	53.5		ug/L	50.00		107	70-130			
Acetone	49.2		ug/L	50.00		98	70-130			
Benzene	11.2		ug/L	10.00		112	70-130			
Bromobenzene	11.4		ug/L	10.00		114	70-130			
Bromochloromethane	10.5		ug/L	10.00		105	70-130			
Bromodichloromethane	10.7		ug/L	10.00		107	70-130			
Bromoform	10.6		ug/L	10.00		106	70-130			
Bromomethane	10.6		ug/L	10.00		106	70-130			
Carbon Disulfide	11.1		ug/L	10.00		111	70-130			
Carbon Tetrachloride	11.1		ug/L	10.00		111	70-130			
Chlorobenzene	11.0		ug/L	10.00		110	70-130			
Chloroethane	9.45		ug/L	10.00		94	70-130			
Chloroform	10.5		ug/L	10.00		105	70-130			
Chloromethane	8.75		ug/L	10.00		88	70-130			
cis-1,2-Dichloroethene	10.8		ug/L	10.00		108	70-130			
cis-1,3-Dichloropropene	11.4		ug/L	10.00		114	70-130			
Dibromochloromethane	9.70		ug/L	10.00		97	70-130			
Dibromomethane	10.4		ug/L	10.00		104	70-130			
Dichlorodifluoromethane	7.37		ug/L	10.00		74	70-130			
Diethyl Ether	10.6		ug/L	10.00		106	70-130			
Di-isopropyl ether	10.6		ug/L	10.00		106	70-130			
Ethyl tertiary-butyl ether	9.79		ug/L	10.00		98	70-130			
Ethylbenzene	10.6		ug/L	10.00		106	70-130			
Hexachlorobutadiene	11.1		ug/L	10.00		111	70-130			
Hexachloroethane	12.0		ug/L	10.00		120	70-130			
Isopropylbenzene	11.5		ug/L	10.00		115	70-130			
Methyl tert-Butyl Ether	10.6		ug/L	10.00		106	70-130			
Methylene Chloride	10.4		ug/L	10.00		104	70-130			
Naphthalene	10.6		ug/L	10.00		106	70-130			
n-Butylbenzene	11.6		ug/L	10.00		116	70-130			
n-Propylbenzene	11.0		ug/L	10.00		110	70-130			
sec-Butylbenzene	12.0		ug/L	10.00		120	70-130			
Styrene	10.7		ug/L	10.00		107	70-130			
tert-Butylbenzene	11.2		ug/L	10.00		112	70-130			
Tertiary-amyl methyl ether	9.57		ug/L	10.00		96	70-130			
Tetrachloroethene	7.69		ug/L	10.00		77	70-130			
Tetrahydrofuran	9.97		ug/L	10.00		100	70-130			
Toluene	11.0		ug/L	10.00		110	70-130			
trans-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
trans-1,3-Dichloropropene	9.55		ug/L	10.00		96	70-130			
Trichloroethene	10.5		ug/L	10.00		105	70-130			
Trichlorofluoromethane	9.55		ug/L	10.00		96	70-130			
Vinyl Acetate	11.8		ug/L	10.00		118	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31237 - 5030B

Vinyl Chloride	11.2		ug/L	10.00		112	70-130			
Xylene O	10.9		ug/L	10.00		109	70-130			
Xylene P,M	22.3		ug/L	20.00		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0240		mg/L	0.02500		96	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0251		mg/L	0.02500		101	70-130			
Surrogate: Toluene-d8	0.0261		mg/L	0.02500		104	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130	0.1	25	
1,1,1-Trichloroethane	10.3		ug/L	10.00		103	70-130	3	25	
1,1,2,2-Tetrachloroethane	10.5		ug/L	10.00		105	70-130	1	25	
1,1,2-Trichloroethane	9.83		ug/L	10.00		98	70-130	2	25	
1,1-Dichloroethane	10.1		ug/L	10.00		101	70-130	3	25	
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130	6	25	
1,1-Dichloropropene	11.8		ug/L	10.00		118	70-130	4	25	
1,2,3-Trichlorobenzene	11.0		ug/L	10.00		110	70-130	4	25	
1,2,3-Trichloropropane	9.67		ug/L	10.00		97	70-130	2	25	
1,2,4-Trichlorobenzene	11.0		ug/L	10.00		110	70-130	11	25	
1,2,4-Trimethylbenzene	11.5		ug/L	10.00		115	70-130	3	25	
1,2-Dibromo-3-Chloropropane	9.45		ug/L	10.00		94	70-130	4	25	
1,2-Dibromoethane	10.3		ug/L	10.00		103	70-130	2	25	
1,2-Dichlorobenzene	11.0		ug/L	10.00		110	70-130	0.2	25	
1,2-Dichloroethane	9.98		ug/L	10.00		100	70-130	1	25	
1,2-Dichloropropane	9.75		ug/L	10.00		98	70-130	4	25	
1,3,5-Trimethylbenzene	11.8		ug/L	10.00		118	70-130	2	25	
1,3-Dichlorobenzene	11.2		ug/L	10.00		112	70-130	2	25	
1,3-Dichloropropane	11.0		ug/L	10.00		110	70-130	3	25	
1,4-Dichlorobenzene	10.4		ug/L	10.00		104	70-130	4	25	
1,4-Dioxane - Screen	289		ug/L	200.0		144	0-332	26	200	
1-Chlorohexane	10.3		ug/L	10.00		103	70-130	4	25	
2,2-Dichloropropane	11.2		ug/L	10.00		112	70-130	6	25	
2-Butanone	52.7		ug/L	50.00		105	70-130	0.04	25	
2-Chlorotoluene	12.1		ug/L	10.00		121	70-130	0.9	25	
2-Hexanone	50.3		ug/L	50.00		101	70-130	2	25	
4-Chlorotoluene	11.0		ug/L	10.00		110	70-130	1	25	
4-Isopropyltoluene	11.1		ug/L	10.00		111	70-130	4	25	
4-Methyl-2-Pentanone	49.6		ug/L	50.00		99	70-130	8	25	
Acetone	48.1		ug/L	50.00		96	70-130	2	25	
Benzene	11.3		ug/L	10.00		113	70-130	0.09	25	
Bromobenzene	11.1		ug/L	10.00		111	70-130	3	25	
Bromochloromethane	10.9		ug/L	10.00		109	70-130	4	25	
Bromodichloromethane	10.6		ug/L	10.00		106	70-130	1	25	
Bromoform	10.2		ug/L	10.00		102	70-130	4	25	
Bromomethane	10.3		ug/L	10.00		103	70-130	2	25	
Carbon Disulfide	11.0		ug/L	10.00		110	70-130	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31237 - 5030B

Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130	4	25	
Chlorobenzene	10.6		ug/L	10.00		106	70-130	4	25	
Chloroethane	9.31		ug/L	10.00		93	70-130	1	25	
Chloroform	10.5		ug/L	10.00		105	70-130	0	25	
Chloromethane	9.46		ug/L	10.00		95	70-130	8	25	
cis-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	3	25	
cis-1,3-Dichloropropene	11.4		ug/L	10.00		114	70-130	0.4	25	
Dibromochloromethane	9.23		ug/L	10.00		92	70-130	5	25	
Dibromomethane	10.3		ug/L	10.00		103	70-130	1	25	
Dichlorodifluoromethane	7.15		ug/L	10.00		72	70-130	3	25	
Diethyl Ether	10.0		ug/L	10.00		100	70-130	5	25	
Di-isopropyl ether	9.88		ug/L	10.00		99	70-130	7	25	
Ethyl tertiary-butyl ether	10.0		ug/L	10.00		100	70-130	2	25	
Ethylbenzene	10.6		ug/L	10.00		106	70-130	0.5	25	
Hexachlorobutadiene	11.9		ug/L	10.00		119	70-130	7	25	
Hexachloroethane	12.1		ug/L	10.00		121	70-130	0.2	25	
Isopropylbenzene	11.4		ug/L	10.00		114	70-130	2	25	
Methyl tert-Butyl Ether	10.2		ug/L	10.00		102	70-130	4	25	
Methylene Chloride	10.6		ug/L	10.00		106	70-130	3	25	
Naphthalene	9.89		ug/L	10.00		99	70-130	7	25	
n-Butylbenzene	11.6		ug/L	10.00		116	70-130	0.5	25	
n-Propylbenzene	11.1		ug/L	10.00		111	70-130	1	25	
sec-Butylbenzene	11.6		ug/L	10.00		116	70-130	3	25	
Styrene	10.4		ug/L	10.00		104	70-130	2	25	
tert-Butylbenzene	11.4		ug/L	10.00		114	70-130	2	25	
Tertiary-amyl methyl ether	9.55		ug/L	10.00		96	70-130	0.2	25	
Tetrachloroethene	7.61		ug/L	10.00		76	70-130	1	25	
Tetrahydrofuran	10.4		ug/L	10.00		104	70-130	4	25	
Toluene	10.8		ug/L	10.00		108	70-130	2	25	
trans-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	2	25	
trans-1,3-Dichloropropene	8.81		ug/L	10.00		88	70-130	8	25	
Trichloroethene	10.4		ug/L	10.00		104	70-130	1	25	
Trichlorofluoromethane	10.2		ug/L	10.00		102	70-130	6	25	
Vinyl Acetate	11.6		ug/L	10.00		116	70-130	2	25	
Vinyl Chloride	10.8		ug/L	10.00		108	70-130	3	25	
Xylene O	11.1		ug/L	10.00		111	70-130	1	25	
Xylene P,M	21.8		ug/L	20.00		109	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	0.0235		mg/L	0.02500		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0238		mg/L	0.02500		95	70-130			
Surrogate: Dibromofluoromethane	0.0252		mg/L	0.02500		101	70-130			
Surrogate: Toluene-d8	0.0261		mg/L	0.02500		104	70-130			

Batch CH31329 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31329 - 5030B

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
Dibromochloromethane	ND	0.0010	mg/L
Dibromomethane	ND	0.0010	mg/L
Dichlorodifluoromethane	ND	0.0020	mg/L



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31329 - 5030B

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							
Surrogate: 1,2-Dichloroethane-d4	29.3		ug/L	25.00		117	70-130			
Surrogate: 4-Bromofluorobenzene	28.7		ug/L	25.00		115	70-130			
Surrogate: Dibromofluoromethane	33.4		ug/L	25.00		133	70-130			
Surrogate: Toluene-d8	22.1		ug/L	25.00		88	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.52		ug/L	10.00		95	70-130			
1,1,1-Trichloroethane	10.6		ug/L	10.00		106	70-130			
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130			
1,1,2-Trichloroethane	9.74		ug/L	10.00		97	70-130			
1,1-Dichloroethane	10.8		ug/L	10.00		108	70-130			
1,1-Dichloroethene	10.5		ug/L	10.00		105	70-130			
1,1-Dichloropropene	11.2		ug/L	10.00		112	70-130			
1,2,3-Trichlorobenzene	11.9		ug/L	10.00		119	70-130			
1,2,3-Trichloropropane	9.17		ug/L	10.00		92	70-130			
1,2,4-Trichlorobenzene	12.2		ug/L	10.00		122	70-130			
1,2,4-Trimethylbenzene	11.2		ug/L	10.00		112	70-130			
1,2-Dibromo-3-Chloropropane	9.95		ug/L	10.00		100	70-130			
1,2-Dibromoethane	9.35		ug/L	10.00		94	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31329 - 5030B

1,2-Dichlorobenzene	11.1		ug/L	10.00		111	70-130			
1,2-Dichloroethane	10.5		ug/L	10.00		105	70-130			
1,2-Dichloropropane	10.2		ug/L	10.00		102	70-130			
1,3,5-Trimethylbenzene	12.3		ug/L	10.00		123	70-130			
1,3-Dichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,3-Dichloropropane	10.2		ug/L	10.00		102	70-130			
1,4-Dichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,4-Dioxane - Screen	399		ug/L	200.0		199	0-332			
1-Chlorohexane	9.44		ug/L	10.00		94	70-130			
2,2-Dichloropropane	11.5		ug/L	10.00		115	70-130			
2-Butanone	53.2		ug/L	50.00		106	70-130			
2-Chlorotoluene	11.6		ug/L	10.00		116	70-130			
2-Hexanone	51.5		ug/L	50.00		103	70-130			
4-Chlorotoluene	10.6		ug/L	10.00		106	70-130			
4-Isopropyltoluene	12.0		ug/L	10.00		120	70-130			
4-Methyl-2-Pentanone	53.1		ug/L	50.00		106	70-130			
Acetone	51.3		ug/L	50.00		103	70-130			
Benzene	11.6		ug/L	10.00		116	70-130			
Bromobenzene	11.5		ug/L	10.00		115	70-130			
Bromochloromethane	10.4		ug/L	10.00		104	70-130			
Bromodichloromethane	10.5		ug/L	10.00		105	70-130			
Bromoform	9.61		ug/L	10.00		96	70-130			
Bromomethane	8.11		ug/L	10.00		81	70-130			
Carbon Disulfide	10.4		ug/L	10.00		104	70-130			
Carbon Tetrachloride	11.0		ug/L	10.00		110	70-130			
Chlorobenzene	10.3		ug/L	10.00		103	70-130			
Chloroethane	9.98		ug/L	10.00		100	70-130			
Chloroform	10.5		ug/L	10.00		105	70-130			
Chloromethane	8.27		ug/L	10.00		83	70-130			
cis-1,2-Dichloroethene	10.9		ug/L	10.00		109	70-130			
cis-1,3-Dichloropropene	10.8		ug/L	10.00		108	70-130			
Dibromochloromethane	8.99		ug/L	10.00		90	70-130			
Dibromomethane	10.3		ug/L	10.00		103	70-130			
Dichlorodifluoromethane	6.87		ug/L	10.00		69	70-130			
Diethyl Ether	10.0		ug/L	10.00		100	70-130			
Di-isopropyl ether	10.4		ug/L	10.00		104	70-130			
Ethyl tertiary-butyl ether	9.80		ug/L	10.00		98	70-130			
Ethylbenzene	10.2		ug/L	10.00		102	70-130			
Hexachlorobutadiene	11.2		ug/L	10.00		112	70-130			
Hexachloroethane	11.6		ug/L	10.00		116	70-130			
Isopropylbenzene	11.3		ug/L	10.00		113	70-130			
Methyl tert-Butyl Ether	10.2		ug/L	10.00		102	70-130			
Methylene Chloride	10.4		ug/L	10.00		104	70-130			
Naphthalene	10.2		ug/L	10.00		102	70-130			
n-Butylbenzene	11.6		ug/L	10.00		116	70-130			

B-



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31329 - 5030B

n-Propylbenzene	10.9		ug/L	10.00		109	70-130			
sec-Butylbenzene	11.8		ug/L	10.00		118	70-130			
Styrene	9.56		ug/L	10.00		96	70-130			
tert-Butylbenzene	10.9		ug/L	10.00		109	70-130			
Tertiary-amyl methyl ether	9.49		ug/L	10.00		95	70-130			
Tetrachloroethene	7.21		ug/L	10.00		72	70-130			
Tetrahydrofuran	10.8		ug/L	10.00		108	70-130			
Toluene	10.6		ug/L	10.00		106	70-130			
trans-1,2-Dichloroethene	9.91		ug/L	10.00		99	70-130			
trans-1,3-Dichloropropene	8.88		ug/L	10.00		89	70-130			
Trichloroethene	10.9		ug/L	10.00		109	70-130			
Trichlorofluoromethane	9.73		ug/L	10.00		97	70-130			
Vinyl Acetate	12.4		ug/L	10.00		124	70-130			
Vinyl Chloride	10.5		ug/L	10.00		105	70-130			
Xylene O	10.2		ug/L	10.00		102	70-130			
Xylene P,M	21.5		ug/L	20.00		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	24.4		ug/L	25.00		98	70-130			
Surrogate: 4-Bromofluorobenzene	23.4		ug/L	25.00		93	70-130			
Surrogate: Dibromofluoromethane	26.4		ug/L	25.00		105	70-130			
Surrogate: Toluene-d8	24.7		ug/L	25.00		99	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	10.0		ug/L	10.00		100	70-130	5	25	
1,1,1-Trichloroethane	10.5		ug/L	10.00		105	70-130	0.6	25	
1,1,2,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130	2	25	
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130	4	25	
1,1-Dichloroethane	10.2		ug/L	10.00		102	70-130	5	25	
1,1-Dichloroethene	10.6		ug/L	10.00		106	70-130	0.7	25	
1,1-Dichloropropene	10.7		ug/L	10.00		107	70-130	5	25	
1,2,3-Trichlorobenzene	10.5		ug/L	10.00		105	70-130	13	25	
1,2,3-Trichloropropane	9.24		ug/L	10.00		92	70-130	0.8	25	
1,2,4-Trichlorobenzene	11.5		ug/L	10.00		115	70-130	6	25	
1,2,4-Trimethylbenzene	10.6		ug/L	10.00		106	70-130	6	25	
1,2-Dibromo-3-Chloropropane	9.57		ug/L	10.00		96	70-130	4	25	
1,2-Dibromoethane	10.0		ug/L	10.00		100	70-130	7	25	
1,2-Dichlorobenzene	11.2		ug/L	10.00		112	70-130	1	25	
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130	3	25	
1,2-Dichloropropane	10.8		ug/L	10.00		108	70-130	5	25	
1,3,5-Trimethylbenzene	11.6		ug/L	10.00		116	70-130	6	25	
1,3-Dichlorobenzene	11.0		ug/L	10.00		110	70-130	1	25	
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130	3	25	
1,4-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	4	25	
1,4-Dioxane - Screen	388		ug/L	200.0		194	0-332	3	200	
1-Chlorohexane	9.91		ug/L	10.00		99	70-130	5	25	
2,2-Dichloropropane	11.1		ug/L	10.00		111	70-130	3	25	
2-Butanone	51.2		ug/L	50.00		102	70-130	4	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31329 - 5030B

2-Chlorotoluene	11.6		ug/L	10.00		116	70-130	0.2	25	
2-Hexanone	51.0		ug/L	50.00		102	70-130	1	25	
4-Chlorotoluene	10.6		ug/L	10.00		106	70-130	0.3	25	
4-Isopropyltoluene	10.2		ug/L	10.00		102	70-130	16	25	
4-Methyl-2-Pentanone	52.5		ug/L	50.00		105	70-130	1	25	
Acetone	46.0		ug/L	50.00		92	70-130	11	25	
Benzene	10.9		ug/L	10.00		109	70-130	6	25	
Bromobenzene	11.1		ug/L	10.00		111	70-130	4	25	
Bromochloromethane	10.4		ug/L	10.00		104	70-130	0.6	25	
Bromodichloromethane	10.3		ug/L	10.00		103	70-130	2	25	
Bromoform	9.76		ug/L	10.00		98	70-130	2	25	
Bromomethane	7.95		ug/L	10.00		80	70-130	2	25	
Carbon Disulfide	10.3		ug/L	10.00		103	70-130	0.6	25	
Carbon Tetrachloride	10.5		ug/L	10.00		105	70-130	5	25	
Chlorobenzene	10.5		ug/L	10.00		105	70-130	2	25	
Chloroethane	9.94		ug/L	10.00		99	70-130	0.4	25	
Chloroform	10.0		ug/L	10.00		100	70-130	4	25	
Chloromethane	8.30		ug/L	10.00		83	70-130	0.4	25	
cis-1,2-Dichloroethene	10.6		ug/L	10.00		106	70-130	3	25	
cis-1,3-Dichloropropene	11.0		ug/L	10.00		110	70-130	2	25	
Dibromochloromethane	8.96		ug/L	10.00		90	70-130	0.3	25	
Dibromomethane	10.7		ug/L	10.00		107	70-130	3	25	
Dichlorodifluoromethane	7.25		ug/L	10.00		72	70-130	5	25	
Diethyl Ether	10.2		ug/L	10.00		102	70-130	2	25	
Di-isopropyl ether	10.3		ug/L	10.00		103	70-130	1	25	
Ethyl tertiary-butyl ether	9.61		ug/L	10.00		96	70-130	2	25	
Ethylbenzene	10.2		ug/L	10.00		102	70-130	1	25	
Hexachlorobutadiene	10.6		ug/L	10.00		106	70-130	6	25	
Hexachloroethane	10.6		ug/L	10.00		106	70-130	9	25	
Isopropylbenzene	11.2		ug/L	10.00		112	70-130	2	25	
Methyl tert-Butyl Ether	10.2		ug/L	10.00		102	70-130	0.4	25	
Methylene Chloride	10.1		ug/L	10.00		101	70-130	2	25	
Naphthalene	9.66		ug/L	10.00		97	70-130	6	25	
n-Butylbenzene	10.7		ug/L	10.00		107	70-130	8	25	
n-Propylbenzene	10.6		ug/L	10.00		106	70-130	3	25	
sec-Butylbenzene	11.6		ug/L	10.00		116	70-130	2	25	
Styrene	9.93		ug/L	10.00		99	70-130	4	25	
tert-Butylbenzene	10.4		ug/L	10.00		104	70-130	5	25	
Tertiary-amyl methyl ether	9.15		ug/L	10.00		92	70-130	4	25	
Tetrachloroethene	7.64		ug/L	10.00		76	70-130	6	25	
Tetrahydrofuran	10.8		ug/L	10.00		108	70-130	0.5	25	
Toluene	10.3		ug/L	10.00		103	70-130	3	25	
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	2	25	
trans-1,3-Dichloropropene	8.84		ug/L	10.00		88	70-130	0.5	25	
Trichloroethene	11.2		ug/L	10.00		112	70-130	3	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31329 - 5030B

Trichlorofluoromethane	9.64		ug/L	10.00		96	70-130	0.9	25	
Vinyl Acetate	11.4		ug/L	10.00		114	70-130	8	25	
Vinyl Chloride	11.0		ug/L	10.00		110	70-130	5	25	
Xylene O	10.9		ug/L	10.00		109	70-130	7	25	
Xylene P,M	21.9		ug/L	20.00		109	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	24.3		ug/L	25.00		97	70-130			
Surrogate: 4-Bromofluorobenzene	24.9		ug/L	25.00		99	70-130			
Surrogate: Dibromofluoromethane	25.3		ug/L	25.00		101	70-130			
Surrogate: Toluene-d8	26.2		ug/L	25.00		105	70-130			

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH30609 - 3510C

Blank										
2-Methylnaphthalene	ND	0.0002	mg/L							
Acenaphthene	ND	0.0002	mg/L							
Acenaphthylene	ND	0.0002	mg/L							
Anthracene	ND	0.0002	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.0002	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.0002	mg/L							
Fluorene	ND	0.0002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.0002	mg/L							
Phenanthrene	ND	0.0002	mg/L							
Pyrene	ND	0.0002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.00141		mg/L	0.002500		56	30-130			
Surrogate: 2-Fluorobiphenyl	0.00190		mg/L	0.002500		76	30-130			
Surrogate: Nitrobenzene-d5	0.00192		mg/L	0.002500		77	30-130			
Surrogate: p-Terphenyl-d14	0.00190		mg/L	0.002500		76	30-130			

LCS										
2-Methylnaphthalene	0.0024	0.0002	mg/L	0.004000		60	40-140			
Acenaphthene	0.0026	0.0002	mg/L	0.004000		65	40-140			
Acenaphthylene	0.0024	0.0002	mg/L	0.004000		59	40-140			
Anthracene	0.0027	0.0002	mg/L	0.004000		68	40-140			
Benzo(a)anthracene	0.0030	0.00005	mg/L	0.004000		74	40-140			
Benzo(a)pyrene	0.0027	0.00005	mg/L	0.004000		67	40-140			
Benzo(b)fluoranthene	0.0028	0.00005	mg/L	0.004000		69	40-140			
Benzo(g,h,i)perylene	0.0028	0.0002	mg/L	0.004000		71	40-140			
Benzo(k)fluoranthene	0.0028	0.00005	mg/L	0.004000		69	40-140			
Chrysene	0.0029	0.00005	mg/L	0.004000		73	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH30609 - 3510C

Dibenzo(a,h)Anthracene	0.0030	0.00005	mg/L	0.004000		76	40-140			
Fluoranthene	0.0029	0.0002	mg/L	0.004000		71	40-140			
Fluorene	0.0028	0.0002	mg/L	0.004000		70	40-140			
Indeno(1,2,3-cd)Pyrene	0.0030	0.00005	mg/L	0.004000		75	40-140			
Naphthalene	0.0024	0.0002	mg/L	0.004000		59	40-140			
Phenanthrene	0.0027	0.0002	mg/L	0.004000		67	40-140			
Pyrene	0.0030	0.0002	mg/L	0.004000		76	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.00165		mg/L	0.002500		66	30-130			
Surrogate: 2-Fluorobiphenyl	0.00205		mg/L	0.002500		82	30-130			
Surrogate: Nitrobenzene-d5	0.00207		mg/L	0.002500		83	30-130			
Surrogate: p-Terphenyl-d14	0.00249		mg/L	0.002500		100	30-130			

LCS Dup

2-Methylnaphthalene	0.0025	0.0002	mg/L	0.004000		62	40-140	3	20	
Acenaphthene	0.0027	0.0002	mg/L	0.004000		67	40-140	3	20	
Acenaphthylene	0.0025	0.0002	mg/L	0.004000		62	40-140	4	20	
Anthracene	0.0028	0.0002	mg/L	0.004000		71	40-140	4	20	
Benzo(a)anthracene	0.0029	0.00005	mg/L	0.004000		73	40-140	1	20	
Benzo(a)pyrene	0.0027	0.00005	mg/L	0.004000		68	40-140	0.8	20	
Benzo(b)fluoranthene	0.0027	0.00005	mg/L	0.004000		68	40-140	2	20	
Benzo(g,h,i)perylene	0.0029	0.0002	mg/L	0.004000		73	40-140	3	20	
Benzo(k)fluoranthene	0.0028	0.00005	mg/L	0.004000		70	40-140	0.5	20	
Chrysene	0.0029	0.00005	mg/L	0.004000		72	40-140	1	20	
Dibenzo(a,h)Anthracene	0.0032	0.00005	mg/L	0.004000		80	40-140	5	20	
Fluoranthene	0.0029	0.0002	mg/L	0.004000		73	40-140	2	20	
Fluorene	0.0029	0.0002	mg/L	0.004000		73	40-140	5	20	
Indeno(1,2,3-cd)Pyrene	0.0030	0.00005	mg/L	0.004000		76	40-140	2	20	
Naphthalene	0.0024	0.0002	mg/L	0.004000		61	40-140	4	20	
Phenanthrene	0.0028	0.0002	mg/L	0.004000		70	40-140	4	20	
Pyrene	0.0031	0.0002	mg/L	0.004000		76	40-140	1	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.00170		mg/L	0.002500		68	30-130			
Surrogate: 2-Fluorobiphenyl	0.00210		mg/L	0.002500		84	30-130			
Surrogate: Nitrobenzene-d5	0.00214		mg/L	0.002500		85	30-130			
Surrogate: p-Terphenyl-d14	0.00246		mg/L	0.002500		98	30-130			

Classical Chemistry

Batch CH30908 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0216	0.0050	mg/L	0.02006		108	90-110			
Total Cyanide (LL)	0.0216	0.0050	mg/L	0.02006		108	90-110			

LCS

Dissolved Cyanide	0.147	0.0050	mg/L	0.1504		98	90-110			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

Classical Chemistry

Batch CH30908 - TCN Prep

Total Cyanide (LL)	0.147	0.0050	mg/L	0.1504		98	90-110			

LCS Dup

Dissolved Cyanide	0.149	0.0050	mg/L	0.1504		99	90-110	1	20	
Total Cyanide (LL)	0.149	0.0050	mg/L	0.1504		99	90-110	1	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308084

Notes and Definitions

U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
J	Reported between MDL and MRL; Estimated value.
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit (C+).
C-	Continuing Calibration recovery is below lower control limit (C-).
B-	Blank Spike recovery is below lower control limit (B-).
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: 1308084

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/labs/waterlabs-instate.php>

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: RI0002

http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

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://www4.egov.nh.gov/des/nhelap/namesearch.asp>

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/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301

http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Client Project ID: _____

Shipped/Delivered Via: ClientESS Project ID: 13080084Date Project Due: 8/13/13Days For Project: 5 Day**Items to be checked upon receipt:**

1. Air Bill Manifest Present?

☒ No

Air No.:

2. Were Custody Seals Present?

☐ No

3. Were Custody Seals Intact?

☐ N/A

4. Is Radiation count < 100 CPM?

☐ Yes

5. Is a cooler present?

☐ YesCooler Temp: 5.9Iced With: Ice

6. Was COC included with samples?

☐ Yes

7. Was COC signed and dated by client?

☐ Yes

8. Does the COC match the sample

☐ Yes

9. Is COC complete and correct?

☐ Yes

10. Are the samples properly preserved?

☐ Yes

11. Proper sample containers used?

☐ Yes

12. Any air bubbles in the VOA vials?

☒ N/A

13. Holding times exceeded?

☐ No

14. Sufficient sample volumes?

☐ Yes

15. Any Subcontracting needed?

☐ No16. Are ESS labels on correct containers? ☒ Yes ☐ No17. Were samples received intact? ☒ Yes ☐ No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

/ Vial of Sample 2 (came in same bag)
has no label 8/16/13

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	plt	time
1	Yes	1 L Glass	2	HCL		
1	Yes	1 L Glass	2	NP		
1	Yes	250 ml Plastic	2	NaOH		
1	Yes	40 ml - VOA	3	HCL		
2	Yes	1 L Glass	2	HCL		
2	Yes	1 L Glass	2	NP		
2	Yes	250 ml Plastic	2	NaOH		
2	Yes	40 ml - VOA	3	HCL		
3	Yes	1 L Glass	2	HCL		
3	Yes	1 L Glass	2	NP		
3	Yes	250 ml Plastic	2	NaOH		
3	Yes	40 ml - VOA	3	HCL		
4	Yes	1 L Glass	2	HCL		
4	Yes	1 L Glass	2	NP		
4	Yes	250 ml Plastic	2	NaOH		
4	Yes	40 ml - VOA	3	HCL		
5	Yes	1 L Glass	2	HCL		
5	Yes	1 L Glass	2	NP		
5	Yes	250 ml Plastic	2	NaOH		
5	Yes	40 ml - VOA	3	HCL		
6	Yes	1 L Glass	2	HCL		
6	Yes	1 L Glass	2	NP		
6	Yes	250 ml Plastic	2	NaOH		
6	Yes	40 ml - VOA	3	HCL		
7	Yes	1 L Glass	2	HCL		

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

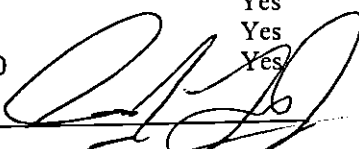
ESS Project ID: 13080084

7	Yes	1 L Glass	2
7	Yes	250 ml Plastic	2
7	Yes	40 ml - VOA	3
8	Yes	1 L Glass	2
8	Yes	1 L Glass	2
8	Yes	250 ml Plastic	2
8	Yes	40 ml - VOA	3
9	Yes	1 L Glass	2
9	Yes	1 L Glass	2
9	Yes	250 ml Plastic	2
9	Yes	40 ml - VOA	3
10	Yes	40 ml - VOA	1

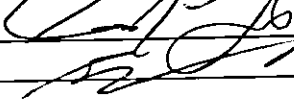
NP
NaOH
HCL
HCL
NP
NaOH
HCL
HCL
NP
NaOH
HCL
HCL

plt time

712 1755

Completed By: 

Date/Time: 8/6/13 1757

Reviewed By: 

Date/Time: 8/4/13 18:40

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

Page 1 of 1

Turn Time If faster than 5 days, prior approval by laboratory is required #		Reporting Limits		ESS LAB PROJECT ID	
Standard		Other		1308084	
State where samples were collected from:		Electronic Deliverable		Yes ☒ No ☐	
MA (R) CT NH NJ NY ME		Format: Excel ☒ Access ☐ PDF ☒ Other ☐			
Is this project for any of the following:		USACE		Other	
MA-MCP		Navy			
Project #		Project Name (20 Char. or less)		Write Required Analysis	
43654		TIDENATEC			
Address		PO#			
530 BROOKWAY		02909			
City		State			
PROVIDENCE		RI			
Telephone #		Fax #			
401-447-0161					
ESS LAB Sample #		Date		Collection Time	
10		8/6/13		800	
1				1420	
2				1210	
3				1315	
4				1245	
5				1245	
6				1215	
7				1237	
8				1431	
9				1351	
MATRIX		GRAB		COMP	
GW TAP BLANK - 0613					
GW MW-109					
GW MDE MW-2					
GW MW-3145					
GW MW-3140					
GW BD #1					
GW MW-3105					
GW MW-3104					
GW MW-3125					
GW MW-3121					
Container Type: P-Poly G-Glass S-Sterile V-VOA		Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters			
Cooler Present ☒ Yes ☐ No		Internal Use Only ☐ [] Pickup			
Seals Intact ☐ Yes ☐ No		NA: ☐ [] Technicians			
Cooler Temp: 5.9, 3.4 + 69° WJ 3 coolers ice 8/6/13					
Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
8/6/13 1605		8/6/13 1400		8/6/13 1400	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
8/6/13 1605		8/6/13 1400		8/6/13 1400	
Sampled by: SOPHIA NAPIEWICZ + MATT BERGEN		Comments: DISSOLVED CYANIDE SAMPLES ARE FIELD FILTERED.		Email: SOPHIA.NAPIEWICZ@GZL.COM ALSO	
Preservation Code 1- NP, 2- HCL, 3- H2SO4, 4- HNO3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9-					



CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (03.0043654)
ESS Laboratory Work Order Number: 1308127

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 2:52 pm, Aug 19, 2013

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: 1308127

SAMPLE RECEIPT

The following samples were received on August 07, 2013 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.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1308127-01	MW-326S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-02	MW-326D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-03	MW-339D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-04	MW-339S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-05	MW-333S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-06	MW-333D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-07	MW-201	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-08	MW-6	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-09	MW-337	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-10	MW-316D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-11	MW-334D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-12	MW-318S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-13	MW-334S	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-14	MW-107	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-15	MW-318D	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-16	BD-2	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308127-17	MW-316S	Ground Water	8260B
1308127-18	TB-8713	Aqueous	8260B



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CH31238-BS1 Blank Spike recovery is below lower control limit (B-).
Dichlorodifluoromethane (67% @ 70-130%)

CH31238-BSD1 Blank Spike recovery is below lower control limit (B-).
Dichlorodifluoromethane (65% @ 70-130%)

CWH0189-CCV1 Continuing Calibration recovery is below lower control limit (C-).
1,4-Dioxane - Screen (46% @ 70-130%), Naphthalene (69% @ 70-130%)

8270C(SIM) Polynuclear Aromatic Hydrocarbons

1308127-01 Present in Method Blank (B).
Naphthalene

1308127-02 Present in Method Blank (B).
Naphthalene

1308127-03 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-03 Present in Method Blank (B).
Naphthalene

1308127-04 Present in Method Blank (B).
Naphthalene

1308127-05 Present in Method Blank (B).
Naphthalene

1308127-06 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-06 Present in Method Blank (B).
Naphthalene

1308127-07 Present in Method Blank (B).
Naphthalene

1308127-08 Present in Method Blank (B).
Naphthalene

1308127-09 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-09 Present in Method Blank (B).
Naphthalene

1308127-10 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-11 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-11 Present in Method Blank (B).
Naphthalene

1308127-12 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-12 Present in Method Blank (B).
Naphthalene

1308127-13 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-13 Present in Method Blank (B).
Naphthalene

1308127-14 Elevated Method Reporting Limits due to sample matrix (EL).

1308127-15 Elevated Method Reporting Limits due to sample matrix (EL).



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1308127

1308127-16 [Elevated Method Reporting Limits due to sample matrix \(EL\).](#)

1308127-16 [Present in Method Blank \(B\).](#)

Naphthalene

CWH0213-TUN1 [Pentachlorophenol tailing factor > 2.](#)

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: 1308127

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
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-326S
Date Sampled: 08/07/13 11:46
Percent Solids: N/A
Initial Volume: 1050
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/9/13 16:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	11.1 (0.19)		8100M		1	08/10/13 4:16	CWH0130	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		114 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 08/07/13 11:46

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 21:34	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0478 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,3,5-Trimethylbenzene	0.0112 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 21:34	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 21:34	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 21:34	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Benzene	0.444 (0.0100)		8260B		10	08/12/13 15:41	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 08/07/13 11:46

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Ethylbenzene	0.154 (0.0100)		8260B		10	08/12/13 15:41	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Isopropylbenzene	0.0370 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Naphthalene	0.0516 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
n-Propylbenzene	0.0128 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Styrene	0.0018 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 08/07/13 11:46

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Toluene	0.0025 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Xylene O	0.0509 (0.0010)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Xylene P,M	0.0132 (0.0020)		8260B		1	08/09/13 21:34	CWH0146	CH31204
Xylenes (Total)	0.0641 (0.0020)		8260B		1	08/09/13 21:34		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 21:34		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	82 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	81 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	93 %		70-130
<i>Surrogate: Toluene-d8</i>	94 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326S

Date Sampled: 08/07/13 11:46

Percent Solids: N/A

Initial Volume: 990

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/8/13 17:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0407 (0.0020)		8270C SIM		10	08/15/13 23:06	CWH0195	CH30842
Acenaphthene	0.0545 (0.0020)		8270C SIM		10	08/15/13 23:06	CWH0195	CH30842
Acenaphthylene	0.0006 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Anthracene	0.0018 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Benzo(a)anthracene	0.0014 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Benzo(a)pyrene	0.0012 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Benzo(b)fluoranthene	0.0009 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Benzo(g,h,i)perylene	0.0006 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Benzo(k)fluoranthene	0.0009 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Chrysene	0.0013 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Dibenzo(a,h)Anthracene	0.0002 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Fluoranthene	0.0027 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Fluorene	0.0058 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Indeno(1,2,3-cd)Pyrene	0.0006 (0.00005)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Naphthalene	B 0.0068 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Phenanthrene	0.0031 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842
Pyrene	0.0037 (0.0002)		8270C SIM		1	08/15/13 5:44	CWH0195	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	30 %		30-130
Surrogate: 2-Fluorobiphenyl	42 %		30-130
Surrogate: Nitrobenzene-d5	37 %		30-130
Surrogate: p-Terphenyl-d14	69 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-326S
Date Sampled: 08/07/13 11:46
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.337 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214
Total Cyanide (LL)	0.339 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-326D
Date Sampled: 08/07/13 11:22
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/9/13 16:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.66 (0.19)		8100M		1	08/10/13 4:55	CWH0130	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		89 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 08/07/13 11:22

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 14:46	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0086 (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 14:46	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 14:46	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 14:46	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Benzene	0.0809 (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 08/07/13 11:22

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Ethylbenzene	0.0401 (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Isopropylbenzene	0.0026 (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Naphthalene	0.123 (0.0100)		8260B		10	08/12/13 16:06	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 08/07/13 11:22

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Xylene O	0.0100 (0.0010)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 14:46	CWH0146	CH31204
Xylenes (Total)	0.0100 (0.0020)		8260B		1	08/09/13 14:46		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 14:46		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-326D

Date Sampled: 08/07/13 11:22

Percent Solids: N/A

Initial Volume: 940

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/8/13 17:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0009 (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Acenaphthene	0.0016 (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Anthracene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Chrysene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Fluoranthene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Fluorene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Naphthalene	B 0.0644 (0.0021)		8270C SIM		10	08/15/13 23:55	CWH0194	CH30842
Phenanthrene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842
Pyrene	ND (0.0002)		8270C SIM		1	08/15/13 2:33	CWH0194	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	49 %		30-130
Surrogate: 2-Fluorobiphenyl	52 %		30-130
Surrogate: Nitrobenzene-d5	61 %		30-130
Surrogate: p-Terphenyl-d14	82 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-326D
Date Sampled: 08/07/13 11:22
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-02
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.766 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214
Total Cyanide (LL)	0.808 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-339D
Date Sampled: 08/07/13 13:35
Percent Solids: N/A
Initial Volume: 1050
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/9/13 16:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	9.78 (0.19)		8100M		1	08/10/13 5:34	CWH0130	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		106 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 08/07/13 13:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 21:09	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.437 (0.0500)		8260B		50	08/12/13 16:57	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,3,5-Trimethylbenzene	0.100 (0.0500)		8260B		50	08/12/13 16:57	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 21:09	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 21:09	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 21:09	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
4-Isopropyltoluene	0.0087 (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Benzene	0.0232 (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 08/07/13 13:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Ethylbenzene	0.190 (0.0500)		8260B		50	08/12/13 16:57	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Isopropylbenzene	0.0472 (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Naphthalene	3.91 (0.0500)		8260B		50	08/12/13 16:57	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
n-Propylbenzene	0.0340 (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Styrene	0.0342 (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 08/07/13 13:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Toluene	0.0471 (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 21:09	CWH0146	CH31204
Xylene O	0.344 (0.0500)		8260B		50	08/12/13 16:57	CWH0146	CH31204
Xylene P,M	0.330 (0.100)		8260B		50	08/12/13 16:57	CWH0146	CH31204
Xylenes (Total)	0.674 (0.100)		8260B		50	08/12/13 16:57		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 21:09		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	80 %		70-130
Surrogate: 4-Bromofluorobenzene	87 %		70-130
Surrogate: Dibromofluoromethane	92 %		70-130
Surrogate: Toluene-d8	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339D

Date Sampled: 08/07/13 13:35

Percent Solids: N/A

Initial Volume: 960

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-03

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/8/13 17:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.303 (0.0417)		8270C SIM		200	08/16/13 13:04	CWH0212	CH30842
Acenaphthene	0.0591 (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Acenaphthylene	0.0789 (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Anthracene	0.0041 (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Chrysene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Fluoranthene	ND (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Fluorene	0.0314 (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0005)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Naphthalene	B 1.63 (0.0417)		8270C SIM		200	08/16/13 13:04	CWH0212	CH30842
Phenanthrene	0.0271 (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842
Pyrene	ND (0.0021)		8270C SIM		10	08/16/13 0:44	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	52 %		30-130
Surrogate: 2-Fluorobiphenyl	53 %		30-130
Surrogate: Nitrobenzene-d5	66 %		30-130
Surrogate: p-Terphenyl-d14	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-339D
Date Sampled: 08/07/13 13:35
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-03
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0761 (0.0050)		9014		1	JLK	08/12/13 11:23	mg/L	CH31214
Total Cyanide (LL)	0.0777 (0.0050)		9014		1	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-339S
Date Sampled: 08/07/13 13:10
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/9/13 16:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.61 (0.19)		8100M		1	08/10/13 6:12	CWH0130	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		89 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 08/07/13 13:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 15:12	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0092 (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,3,5-Trimethylbenzene	0.0032 (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 15:12	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 15:12	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 15:12	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Benzene	0.0011 (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 08/07/13 13:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Naphthalene	0.286 (0.0200)		8260B		20	08/12/13 16:32	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Styrene	0.0016 (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 08/07/13 13:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Xylene O	0.0013 (0.0010)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Xylene P,M	0.0021 (0.0020)		8260B		1	08/09/13 15:12	CWH0146	CH31204
Xylenes (Total)	0.0034 (0.0020)		8260B		1	08/09/13 15:12		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 15:12		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	103 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	84 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	100 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-339S

Date Sampled: 08/07/13 13:10

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-04

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0323 (0.0037)		8270C SIM		20	08/16/13 2:25	CWH0195	CH30842
Acenaphthene	0.0004 (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Anthracene	0.0003 (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Chrysene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Fluoranthene	0.0002 (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Fluorene	0.0009 (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Naphthalene	B 0.129 (0.0037)		8270C SIM		20	08/16/13 2:25	CWH0195	CH30842
Phenanthrene	0.0014 (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842
Pyrene	0.0002 (0.0002)		8270C SIM		1	08/15/13 7:22	CWH0195	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	42 %		30-130
Surrogate: 2-Fluorobiphenyl	45 %		30-130
Surrogate: Nitrobenzene-d5	62 %		30-130
Surrogate: p-Terphenyl-d14	79 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-339S
Date Sampled: 08/07/13 13:10
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-04
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.335 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214
Total Cyanide (LL)	0.364 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333S
Date Sampled: 08/07/13 09:39
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/9/13 16:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/10/13 6:51	CWH0130	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		91 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 08/07/13 09:39

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/12/13 14:11	CWH0155	CH31238
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/12/13 14:11	CWH0155	CH31238
1-Chlorohexane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
2-Butanone	ND (0.0100)		8260B		1	08/12/13 14:11	CWH0155	CH31238
2-Chlorotoluene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
2-Hexanone	ND (0.0100)		8260B		1	08/12/13 14:11	CWH0155	CH31238
4-Chlorotoluene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Acetone	ND (0.0100)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Benzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 08/07/13 09:39

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Bromochloromethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Bromodichloromethane	ND (0.0006)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Bromoform	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Bromomethane	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Carbon Disulfide	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Chlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Chloroethane	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Chloroform	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Chloromethane	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Dibromochloromethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Dibromomethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Diethyl Ether	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Di-isopropyl ether	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Ethylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Hexachloroethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Isopropylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Methylene Chloride	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Naphthalene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
n-Butylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
n-Propylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
sec-Butylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Styrene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
tert-Butylbenzene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 08/07/13 09:39

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Tetrachloroethene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Tetrahydrofuran	ND (0.0050)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Toluene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Trichloroethene	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Vinyl Acetate	ND (0.0050)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Vinyl Chloride	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Xylene O	ND (0.0010)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Xylene P,M	ND (0.0020)		8260B		1	08/12/13 14:11	CWH0155	CH31238
Xylenes (Total)	ND (0.0020)		8260B		1	08/12/13 14:11		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/12/13 14:11		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	94 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	83 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	97 %		70-130
<i>Surrogate: Toluene-d8</i>	97 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333S

Date Sampled: 08/07/13 09:39

Percent Solids: N/A

Initial Volume: 1000

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-05

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Acenaphthene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Anthracene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Chrysene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Fluoranthene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Fluorene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Naphthalene	B 0.0012 (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Phenanthrene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842
Pyrene	ND (0.0002)		8270C SIM		1	08/15/13 8:12	CWH0195	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	44 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	48 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	60 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	84 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333S
Date Sampled: 08/07/13 09:39
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-05
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0137 (0.0050)		9014		1	JLK	08/12/13 15:08	mg/L	CH31214
Total Cyanide (LL)	0.0140 (0.0050)		9014		1	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333D
Date Sampled: 08/07/13 09:52
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	6.60 (0.20)		8100M		1	08/13/13 20:07	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		81 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 08/07/13 09:52

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 20:43	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.353 (0.100)		8260B		100	08/12/13 17:48	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 20:43	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 20:43	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 20:43	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Benzene	2.67 (0.100)		8260B		100	08/12/13 17:48	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 08/07/13 09:52

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Ethylbenzene	1.14 (0.100)		8260B		100	08/12/13 17:48	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Isopropylbenzene	0.0900 (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Naphthalene	3.96 (0.100)		8260B		100	08/12/13 17:48	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
n-Propylbenzene	0.0346 (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Styrene	0.0039 (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 08/07/13 09:52

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Toluene	0.0152 (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Xylene O	0.163 (0.100)		8260B		100	08/12/13 17:48	CWH0146	CH31204
Xylene P,M	0.0393 (0.0020)		8260B		1	08/09/13 20:43	CWH0146	CH31204
Xylenes (Total)	0.202 (0.100)		8260B		100	08/12/13 17:48		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 20:43		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	87 %		70-130
Surrogate: 4-Bromofluorobenzene	88 %		70-130
Surrogate: Dibromofluoromethane	95 %		70-130
Surrogate: Toluene-d8	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-333D

Date Sampled: 08/07/13 09:52

Percent Solids: N/A

Initial Volume: 960

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-06

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0755 (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Acenaphthene	0.0584 (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Acenaphthylene	0.0024 (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Anthracene	0.0037 (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Benzo(a)anthracene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Benzo(a)pyrene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Benzo(b)fluoranthene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Benzo(g,h,i)perylene	ND (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Benzo(k)fluoranthene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Chrysene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Dibenzo(a,h)Anthracene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Fluoranthene	ND (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Fluorene	0.0153 (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0005)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Naphthalene	B 1.98 (0.0417)		8270C SIM		200	08/16/13 13:53	CWH0213	CH30842
Phenanthrene	0.0169 (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842
Pyrene	ND (0.0021)		8270C SIM		10	08/16/13 8:07	CWH0213	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	54 %		30-130
Surrogate: 2-Fluorobiphenyl	60 %		30-130
Surrogate: Nitrobenzene-d5	87 %		30-130
Surrogate: p-Terphenyl-d14	86 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-333D
Date Sampled: 08/07/13 09:52
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-06
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	3.95 (0.125)		9014		25	JLK	08/12/13 15:08	mg/L	CH31214
Total Cyanide (LL)	4.05 (0.125)		9014		25	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-201
Date Sampled: 08/07/13 14:40
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	1.86 (0.20)		8100M		1	08/13/13 22:43	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		85 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 08/07/13 14:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 20:17	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0248 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,3,5-Trimethylbenzene	0.0024 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 20:17	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 20:17	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 20:17	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Benzene	0.0948 (0.0100)		8260B		10	08/12/13 15:15	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 08/07/13 14:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Ethylbenzene	0.0658 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Isopropylbenzene	0.0274 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Naphthalene	0.0781 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
n-Butylbenzene	0.0068 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
n-Propylbenzene	0.0227 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
sec-Butylbenzene	0.0026 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Styrene	0.0043 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-201

Date Sampled: 08/07/13 14:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Xylene O	0.0252 (0.0010)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Xylene P,M	0.0051 (0.0020)		8260B		1	08/09/13 20:17	CWH0146	CH31204
Xylenes (Total)	0.0303 (0.0020)		8260B		1	08/09/13 20:17		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 20:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	91 %		70-130
Surrogate: 4-Bromofluorobenzene	87 %		70-130
Surrogate: Dibromofluoromethane	96 %		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-201

Date Sampled: 08/07/13 14:40

Percent Solids: N/A

Initial Volume: 980

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-07

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0004 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Acenaphthene	0.0061 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Acenaphthylene	0.0019 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Anthracene	0.0030 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Benzo(a)anthracene	0.0005 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Benzo(a)pyrene	0.0003 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Benzo(b)fluoranthene	0.0003 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Benzo(k)fluoranthene	0.0001 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Chrysene	0.0005 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Dibenzo(a,h)Anthracene	0.00006 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Fluoranthene	0.0014 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Fluorene	0.0108 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Indeno(1,2,3-cd)Pyrene	0.0002 (0.00005)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Naphthalene	B 0.0306 (0.0020)		8270C SIM		10	08/16/13 9:45	CWH0195	CH30842
Phenanthrene	0.0094 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842
Pyrene	0.0024 (0.0002)		8270C SIM		1	08/15/13 9:50	CWH0195	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	45 %		30-130
Surrogate: 2-Fluorobiphenyl	46 %		30-130
Surrogate: Nitrobenzene-d5	53 %		30-130
Surrogate: p-Terphenyl-d14	69 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-201
Date Sampled: 08/07/13 14:40
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-07
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	2.37 (0.125)		9014		25	JLK	08/12/13 15:08	mg/L	CH31214
Total Cyanide (LL)	3.68 (0.125)		9014		25	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-6
Date Sampled: 08/07/13 16:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	2.98 (0.19)		8100M		1	08/13/13 23:22	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		87 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 08/07/13 16:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/12/13 14:37	CWH0155	CH31238
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2,4-Trimethylbenzene	0.0012 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/12/13 14:37	CWH0155	CH31238
1-Chlorohexane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
2-Butanone	ND (0.0100)		8260B		1	08/12/13 14:37	CWH0155	CH31238
2-Chlorotoluene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
2-Hexanone	ND (0.0100)		8260B		1	08/12/13 14:37	CWH0155	CH31238
4-Chlorotoluene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Acetone	ND (0.0100)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Benzene	0.0263 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 08/07/13 16:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Bromochloromethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Bromodichloromethane	ND (0.0006)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Bromoform	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Bromomethane	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Carbon Disulfide	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Chlorobenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Chloroethane	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Chloroform	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Chloromethane	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Dibromochloromethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Dibromomethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Diethyl Ether	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Di-isopropyl ether	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Ethylbenzene	0.0193 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Hexachloroethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Isopropylbenzene	0.0037 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Methylene Chloride	ND (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Naphthalene	0.0045 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
n-Butylbenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
n-Propylbenzene	0.0027 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
sec-Butylbenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Styrene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
tert-Butylbenzene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 08/07/13 16:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Tetrachloroethene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Tetrahydrofuran	ND (0.0050)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Toluene	0.0012 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Trichloroethene	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Vinyl Acetate	ND (0.0050)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Vinyl Chloride	ND (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Xylene O	0.0186 (0.0010)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Xylene P,M	0.0028 (0.0020)		8260B		1	08/12/13 14:37	CWH0155	CH31238
Xylenes (Total)	0.0213 (0.0020)		8260B		1	08/12/13 14:37		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/12/13 14:37		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>96 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-6

Date Sampled: 08/07/13 16:00

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-08

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Acenaphthene	0.0067 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Acenaphthylene	0.0414 (0.0019)		8270C SIM		10	08/16/13 10:34	CWH0195	CH30842
Anthracene	0.0005 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Chrysene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Fluoranthene	0.0004 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Fluorene	0.0063 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Naphthalene	B 0.0018 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Phenanthrene	0.0037 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842
Pyrene	0.0003 (0.0002)		8270C SIM		1	08/15/13 10:41	CWH0195	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	42 %		30-130
Surrogate: 2-Fluorobiphenyl	46 %		30-130
Surrogate: Nitrobenzene-d5	50 %		30-130
Surrogate: p-Terphenyl-d14	71 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-6
Date Sampled: 08/07/13 16:00
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-08
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.263 (0.0250)		9014		5	JLK	08/12/13 15:08	mg/L	CH31214
Total Cyanide (LL)	0.271 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-337
Date Sampled: 08/07/13 15:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	1.36 (0.19)		8100M		1	08/14/13 0:01	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		106 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 08/07/13 15:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/14/13 13:17	CWH0189	CH31430
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/14/13 13:17	CWH0189	CH31430
1-Chlorohexane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
2-Butanone	ND (0.0100)		8260B		1	08/14/13 13:17	CWH0189	CH31430
2-Chlorotoluene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
2-Hexanone	ND (0.0100)		8260B		1	08/14/13 13:17	CWH0189	CH31430
4-Chlorotoluene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Acetone	ND (0.0100)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Benzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 08/07/13 15:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Bromochloromethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Bromodichloromethane	ND (0.0006)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Bromoform	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Bromomethane	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Carbon Disulfide	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Chlorobenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Chloroethane	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Chloroform	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Chloromethane	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Dibromochloromethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Dibromomethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Diethyl Ether	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Di-isopropyl ether	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Ethylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Hexachloroethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Isopropylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Methylene Chloride	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Naphthalene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
n-Butylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
n-Propylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
sec-Butylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Styrene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
tert-Butylbenzene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-337

Date Sampled: 08/07/13 15:35

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Tetrachloroethene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Tetrahydrofuran	ND (0.0050)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Toluene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Trichloroethene	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Vinyl Acetate	ND (0.0050)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Vinyl Chloride	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Xylene O	ND (0.0010)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Xylene P,M	ND (0.0020)		8260B		1	08/14/13 13:17	CWH0189	CH31430
Xylenes (Total)	ND (0.0020)		8260B		1	08/14/13 13:17		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/14/13 13:17		[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>95 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>92 %</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-337

Date Sampled: 08/07/13 15:35

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-09

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Acenaphthene	0.0009 (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Acenaphthylene	0.0010 (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Anthracene	ND (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Fluoranthene	0.0012 (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Fluorene	0.0016 (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Naphthalene	B 0.0014 (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Phenanthrene	ND (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842
Pyrene	0.0012 (0.0009)		8270C SIM		5	08/15/13 16:28	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	64 %		30-130
Surrogate: 2-Fluorobiphenyl	54 %		30-130
Surrogate: Nitrobenzene-d5	60 %		30-130
Surrogate: p-Terphenyl-d14	83 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-337
Date Sampled: 08/07/13 15:35
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-09
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.267 (0.0250)		9014		5	JLK	08/12/13 15:08	mg/L	CH31214
Total Cyanide (LL)	0.282 (0.0250)		9014		5	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-316D
Date Sampled: 08/07/13 14:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-10
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/14/13 0:40	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		90 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 08/07/13 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 16:03	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 16:03	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 16:03	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 16:03	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Benzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 08/07/13 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Naphthalene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 08/07/13 14:15

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 16:03	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 16:03		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 16:03		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>111 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>96 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316D

Date Sampled: 08/07/13 14:15

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-10

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Acenaphthene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Acenaphthylene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Anthracene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Fluoranthene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Fluorene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Naphthalene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Phenanthrene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842
Pyrene	ND (0.0009)		8270C SIM		5	08/15/13 17:17	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	50 %		30-130
Surrogate: 2-Fluorobiphenyl	42 %		30-130
Surrogate: Nitrobenzene-d5	45 %		30-130
Surrogate: p-Terphenyl-d14	62 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-316D
Date Sampled: 08/07/13 14:15
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-10
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0129 (0.0050)		9014		1	JLK	08/12/13 15:08	mg/L	CH31214
Total Cyanide (LL)	0.0129 (0.0050)		9014		1	JLK	08/12/13 11:23	mg/L	CH31214



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334D
Date Sampled: 08/07/13 12:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-11
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.33 (0.19)		8100M		1	08/14/13 1:19	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		90 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 08/07/13 12:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 16:28	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 16:28	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 16:28	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 16:28	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Benzene	0.0015 (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 08/07/13 12:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
cis-1,2-Dichloroethene	0.0012 (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Naphthalene	0.0132 (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334D

Date Sampled: 08/07/13 12:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Trichloroethene	0.0021 (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 16:28	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 16:28		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 16:28		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>109 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>82 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</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: 08/07/13 12:50

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-11

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0013 (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Acenaphthene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Acenaphthylene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Anthracene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Fluoranthene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Fluorene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Naphthalene	B 0.0067 (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Phenanthrene	0.0029 (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842
Pyrene	ND (0.0009)		8270C SIM		5	08/15/13 18:06	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	41 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	47 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	47 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	74 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334D
Date Sampled: 08/07/13 12:50
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-11
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0245 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0256 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318S
Date Sampled: 08/07/13 10:40
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-12
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	3.42 (0.19)		8100M		1	08/14/13 1:58	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		84 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 19:26	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0430 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,3,5-Trimethylbenzene	0.0177 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 19:26	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 19:26	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 19:26	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
4-Isopropyltoluene	0.0012 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Benzene	0.0733 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Ethylbenzene	0.0099 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Naphthalene	0.988 (0.100)		8260B		100	08/12/13 18:13	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
n-Propylbenzene	0.0020 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Styrene	0.0051 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Toluene	0.0659 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Xylene O	0.0374 (0.0010)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Xylene P,M	0.0830 (0.0020)		8260B		1	08/09/13 19:26	CWH0146	CH31204
Xylenes (Total)	0.120 (0.0020)		8260B		1	08/09/13 19:26		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 19:26		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	87 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	102 %		70-130
<i>Surrogate: Toluene-d8</i>	95 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318S

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-12

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0397 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Acenaphthene	0.0046 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Acenaphthylene	0.0129 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Anthracene	0.0036 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Fluoranthene	0.0010 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Fluorene	0.0111 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Naphthalene	B 0.351 (0.0093)		8270C SIM		50	08/16/13 11:24	CWH0212	CH30842
Phenanthrene	0.0106 (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842
Pyrene	ND (0.0009)		8270C SIM		5	08/15/13 18:56	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	37 %		30-130
Surrogate: 2-Fluorobiphenyl	38 %		30-130
Surrogate: Nitrobenzene-d5	44 %		30-130
Surrogate: p-Terphenyl-d14	62 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318S
Date Sampled: 08/07/13 10:40
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-12
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0119 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0125 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334S
Date Sampled: 08/07/13 11:30
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-13
Sample Matrix: Ground Water
Units: mg/L
Analyst: DPS
Prepared: 8/10/13 9:45

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.52 (0.19)		8100M		1	08/14/13 2:37	CWH0182	CH30927
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		108 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 08/07/13 11:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 16:53	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0011 (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 16:53	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 16:53	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 16:53	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Benzene	0.0020 (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 08/07/13 11:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Naphthalene	0.0334 (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-334S

Date Sampled: 08/07/13 11:30

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Toluene	0.0010 (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 16:53	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 16:53		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 16:53		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	110 %		70-130
Surrogate: 4-Bromofluorobenzene	84 %		70-130
Surrogate: Dibromofluoromethane	108 %		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-334S

Date Sampled: 08/07/13 11:30

Percent Solids: N/A

Initial Volume: 1040

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-13

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0019 (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Acenaphthene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Acenaphthylene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Anthracene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Fluoranthene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Fluorene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Naphthalene	B 0.0142 (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Phenanthrene	0.0027 (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842
Pyrene	ND (0.0010)		8270C SIM		5	08/15/13 19:45	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	50 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	54 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	58 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	81 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-334S
Date Sampled: 08/07/13 11:30
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-13
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0286 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0352 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-107
Date Sampled: 08/07/13 09:20
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-14
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/10/13 13:15

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/13/13 16:52	CWH0182	CH31006
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		88 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 08/07/13 09:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 17:19	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 17:19	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 17:19	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 17:19	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Benzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 08/07/13 09:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Naphthalene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 08/07/13 09:20

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 17:19	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 17:19		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 17:19		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>96 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-107

Date Sampled: 08/07/13 09:20

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-14

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Acenaphthene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Acenaphthylene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Anthracene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Fluoranthene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Fluorene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Naphthalene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Phenanthrene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842
Pyrene	ND (0.0009)		8270C SIM		5	08/15/13 20:35	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	49 %		30-130
Surrogate: 2-Fluorobiphenyl	51 %		30-130
Surrogate: Nitrobenzene-d5	55 %		30-130
Surrogate: p-Terphenyl-d14	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-107
Date Sampled: 08/07/13 09:20
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-14
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0445 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0472 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318D
Date Sampled: 08/07/13 12:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-15
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/10/13 13:15

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/13/13 17:31	CWH0182	CH31006
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		85 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 08/07/13 12:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 17:44	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 17:44	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 17:44	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 17:44	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Benzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 08/07/13 12:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Naphthalene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-318D

Date Sampled: 08/07/13 12:10

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 17:44	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 17:44		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 17:44		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>112 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>83 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</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-318D

Date Sampled: 08/07/13 12:10

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-15

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Acenaphthene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Acenaphthylene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Anthracene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Fluoranthene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Fluorene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Naphthalene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Phenanthrene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842
Pyrene	ND (0.0009)		8270C SIM		5	08/15/13 21:26	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	60 %		30-130
Surrogate: 2-Fluorobiphenyl	49 %		30-130
Surrogate: Nitrobenzene-d5	57 %		30-130
Surrogate: p-Terphenyl-d14	77 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-318D
Date Sampled: 08/07/13 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-15
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0138 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0163 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD-2
Date Sampled: 08/07/13 10:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-16
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/10/13 13:15

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	3.64 (0.19)		8100M		1	08/13/13 18:10	CWH0182	CH31006
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		94 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-2

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 19:01	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2,4-Trimethylbenzene	0.0452 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,3,5-Trimethylbenzene	0.0182 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 19:01	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 19:01	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 19:01	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
4-Isopropyltoluene	0.0012 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Benzene	0.0772 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-2

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Ethylbenzene	0.0097 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Naphthalene	0.998 (0.100)		8260B		100	08/12/13 18:39	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
n-Propylbenzene	0.0018 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Styrene	0.0049 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-2

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Toluene	0.0658 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Xylene O	0.0390 (0.0010)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Xylene P,M	0.0869 (0.0020)		8260B		1	08/09/13 19:01	CWH0146	CH31204
Xylenes (Total)	0.126 (0.0020)		8260B		1	08/09/13 19:01		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 19:01		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	115 %		70-130
Surrogate: 4-Bromofluorobenzene	94 %		70-130
Surrogate: Dibromofluoromethane	111 %		70-130
Surrogate: Toluene-d8	95 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: BD-2

Date Sampled: 08/07/13 10:40

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-16

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/9/13 10:00

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	0.0514 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Acenaphthene	0.0063 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Acenaphthylene	0.0168 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Anthracene	0.0043 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Benzo(a)anthracene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Benzo(a)pyrene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Benzo(b)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Benzo(g,h,i)perylene	ND (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Benzo(k)fluoranthene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Chrysene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Dibenzo(a,h)Anthracene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Fluoranthene	0.0012 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Fluorene	0.0147 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Indeno(1,2,3-cd)Pyrene	ND (0.0002)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Naphthalene	B 0.434 (0.0093)		8270C SIM		50	08/16/13 12:14	CWH0212	CH30842
Phenanthrene	0.0133 (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842
Pyrene	ND (0.0009)		8270C SIM		5	08/15/13 22:16	CWH0212	CH30842

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	44 %		30-130
Surrogate: 2-Fluorobiphenyl	48 %		30-130
Surrogate: Nitrobenzene-d5	53 %		30-130
Surrogate: p-Terphenyl-d14	75 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: BD-2
Date Sampled: 08/07/13 10:40
Percent Solids: N/A

ESS Laboratory Work Order: 1308127
ESS Laboratory Sample ID: 1308127-16
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0119 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0122 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316S

Date Sampled: 08/07/13 13:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-17

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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	08/09/13 18:35	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 18:35	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 18:35	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 18:35	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Benzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316S

Date Sampled: 08/07/13 13:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-17

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Naphthalene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-316S

Date Sampled: 08/07/13 13:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-17

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 18:35	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 18:35		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 18:35		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>113 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>83 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</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: TB-8713

Date Sampled: 08/07/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-18

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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	08/09/13 14:21	CWH0146	CH31204
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,1-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,1-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,1-Dichloropropene	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2-Dibromoethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2-Dichloroethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,3-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1,4-Dioxane - Screen	ND (0.500)		8260B		1	08/09/13 14:21	CWH0146	CH31204
1-Chlorohexane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
2,2-Dichloropropane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
2-Butanone	ND (0.0100)		8260B		1	08/09/13 14:21	CWH0146	CH31204
2-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
2-Hexanone	ND (0.0100)		8260B		1	08/09/13 14:21	CWH0146	CH31204
4-Chlorotoluene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
4-Isopropyltoluene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Acetone	ND (0.0100)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Benzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TB-8713

Date Sampled: 08/07/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-18

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Bromochloromethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Bromodichloromethane	ND (0.0006)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Bromoform	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Bromomethane	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Carbon Disulfide	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Carbon Tetrachloride	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Chlorobenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Chloroethane	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Chloroform	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Chloromethane	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Dibromochloromethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Dibromomethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Dichlorodifluoromethane	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Diethyl Ether	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Di-isopropyl ether	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Ethylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Hexachlorobutadiene	ND (0.0006)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Hexachloroethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Isopropylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Methylene Chloride	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Naphthalene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
n-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
n-Propylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
sec-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Styrene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
tert-Butylbenzene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TB-8713

Date Sampled: 08/07/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308127

ESS Laboratory Sample ID: 1308127-18

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Tetrachloroethene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Tetrahydrofuran	ND (0.0050)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Toluene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Trichloroethene	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Trichlorofluoromethane	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Vinyl Acetate	ND (0.0050)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Vinyl Chloride	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Xylene O	ND (0.0010)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Xylene P,M	ND (0.0020)		8260B		1	08/09/13 14:21	CWH0146	CH31204
Xylenes (Total)	ND (0.0020)		8260B		1	08/09/13 14:21		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/09/13 14:21		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>83 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>98 %</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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CH30927 - 3510C

Blank

Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							

<i>Surrogate: O-Terphenyl</i>	<i>0.108</i>		mg/L	<i>0.1000</i>		<i>108</i>	<i>40-140</i>			

LCS

Decane (C10)	0.044	0.005	mg/L	0.05000		87	40-140			
Docosane (C22)	0.054	0.005	mg/L	0.05000		108	40-140			
Dodecane (C12)	0.048	0.005	mg/L	0.05000		96	40-140			
Eicosane (C20)	0.053	0.005	mg/L	0.05000		106	40-140			
Hexacosane (C26)	0.054	0.005	mg/L	0.05000		108	40-140			
Hexadecane (C16)	0.052	0.005	mg/L	0.05000		104	40-140			
Nonadecane (C19)	0.053	0.005	mg/L	0.05000		107	40-140			
Nonane (C9)	0.037	0.005	mg/L	0.05000		73	30-140			
Octacosane (C28)	0.054	0.005	mg/L	0.05000		107	40-140			
Octadecane (C18)	0.053	0.005	mg/L	0.05000		106	40-140			
Tetracosane (C24)	0.055	0.005	mg/L	0.05000		110	40-140			
Tetradecane (C14)	0.051	0.005	mg/L	0.05000		101	40-140			
Total Petroleum Hydrocarbons	0.780	0.20	mg/L	0.7000		111	40-140			
Triacontane (C30)	0.054	0.005	mg/L	0.05000		107	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>0.106</i>		mg/L	<i>0.1000</i>		<i>106</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	0.045	0.005	mg/L	0.05000		90	40-140	3	25	
Docosane (C22)	0.054	0.005	mg/L	0.05000		109	40-140	1	25	
Dodecane (C12)	0.049	0.005	mg/L	0.05000		98	40-140	3	25	
Eicosane (C20)	0.053	0.005	mg/L	0.05000		107	40-140	1	25	
Hexacosane (C26)	0.054	0.005	mg/L	0.05000		108	40-140	0.5	25	
Hexadecane (C16)	0.053	0.005	mg/L	0.05000		106	40-140	1	25	
Nonadecane (C19)	0.054	0.005	mg/L	0.05000		107	40-140	0.6	25	
Nonane (C9)	0.038	0.005	mg/L	0.05000		75	30-140	3	25	
Octacosane (C28)	0.054	0.005	mg/L	0.05000		109	40-140	1	25	
Octadecane (C18)	0.053	0.005	mg/L	0.05000		107	40-140	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CH30927 - 3510C										
Tetracosane (C24)	0.055	0.005	mg/L	0.05000		111	40-140	0.5	25	
Tetradecane (C14)	0.052	0.005	mg/L	0.05000		103	40-140	2	25	
Total Petroleum Hydrocarbons	0.785	0.20	mg/L	0.7000		112	40-140	0.7	25	
Triacontane (C30)	0.054	0.005	mg/L	0.05000		108	40-140	0.3	25	
<i>Surrogate: O-Terphenyl</i>	<i>0.105</i>		mg/L	<i>0.1000</i>		<i>105</i>	<i>40-140</i>			
Batch CH31006 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
<i>Surrogate: O-Terphenyl</i>	<i>0.104</i>		mg/L	<i>0.1000</i>		<i>104</i>	<i>40-140</i>			
LCS										
Decane (C10)	0.039	0.005	mg/L	0.05000		77	40-140			
Docosane (C22)	0.046	0.005	mg/L	0.05000		93	40-140			
Dodecane (C12)	0.042	0.005	mg/L	0.05000		83	40-140			
Eicosane (C20)	0.046	0.005	mg/L	0.05000		91	40-140			
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		92	40-140			
Hexadecane (C16)	0.045	0.005	mg/L	0.05000		89	40-140			
Nonadecane (C19)	0.046	0.005	mg/L	0.05000		93	40-140			
Nonane (C9)	0.031	0.005	mg/L	0.05000		63	30-140			
Octacosane (C28)	0.046	0.005	mg/L	0.05000		93	40-140			
Octadecane (C18)	0.045	0.005	mg/L	0.05000		91	40-140			
Tetracosane (C24)	0.047	0.005	mg/L	0.05000		94	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140			
Total Petroleum Hydrocarbons	0.606	0.20	mg/L	0.7000		87	40-140			
Triacontane (C30)	0.046	0.005	mg/L	0.05000		92	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>0.0900</i>		mg/L	<i>0.1000</i>		<i>90</i>	<i>40-140</i>			
LCS Dup										
Decane (C10)	0.035	0.005	mg/L	0.05000		70	40-140	10	25	
Docosane (C22)	0.042	0.005	mg/L	0.05000		85	40-140	9	25	
Dodecane (C12)	0.038	0.005	mg/L	0.05000		76	40-140	9	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CH31006 - 3510C

Eicosane (C20)	0.042	0.005	mg/L	0.05000		83	40-140	9	25	
Hexacosane (C26)	0.042	0.005	mg/L	0.05000		85	40-140	8	25	
Hexadecane (C16)	0.041	0.005	mg/L	0.05000		81	40-140	9	25	
Nonadecane (C19)	0.042	0.005	mg/L	0.05000		84	40-140	10	25	
Nonane (C9)	0.028	0.005	mg/L	0.05000		57	30-140	10	25	
Octacosane (C28)	0.043	0.005	mg/L	0.05000		85	40-140	8	25	
Octadecane (C18)	0.042	0.005	mg/L	0.05000		83	40-140	9	25	
Tetracosane (C24)	0.043	0.005	mg/L	0.05000		86	40-140	9	25	
Tetradecane (C14)	0.040	0.005	mg/L	0.05000		79	40-140	9	25	
Total Petroleum Hydrocarbons	0.555	0.20	mg/L	0.7000		79	40-140	9	25	
Triacotane (C30)	0.042	0.005	mg/L	0.05000		84	40-140	8	25	

Surrogate: O-Terphenyl

0.0806

mg/L

0.1000

81

40-140

8260B Volatile Organic Compounds

Batch CH31204 - 5030B

LCS

1,1,1,2-Tetrachloroethane	9.52		ug/L	10.00		95	70-130			
1,1,1-Trichloroethane	10.5		ug/L	10.00		105	70-130			
1,1,2,2-Tetrachloroethane	10.0		ug/L	10.00		100	70-130			
1,1,2-Trichloroethane	9.61		ug/L	10.00		96	70-130			
1,1-Dichloroethane	9.67		ug/L	10.00		97	70-130			
1,1-Dichloroethene	9.78		ug/L	10.00		98	70-130			
1,1-Dichloropropene	11.0		ug/L	10.00		110	70-130			
1,2,3-Trichlorobenzene	9.77		ug/L	10.00		98	70-130			
1,2,3-Trichloropropane	9.40		ug/L	10.00		94	70-130			
1,2,4-Trichlorobenzene	9.44		ug/L	10.00		94	70-130			
1,2,4-Trimethylbenzene	10.8		ug/L	10.00		108	70-130			
1,2-Dibromo-3-Chloropropane	10.2		ug/L	10.00		102	70-130			
1,2-Dibromoethane	9.88		ug/L	10.00		99	70-130			
1,2-Dichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dichloroethane	10.9		ug/L	10.00		109	70-130			
1,2-Dichloropropane	9.18		ug/L	10.00		92	70-130			
1,3,5-Trimethylbenzene	11.2		ug/L	10.00		112	70-130			
1,3-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,3-Dichloropropane	10.2		ug/L	10.00		102	70-130			
1,4-Dichlorobenzene	9.92		ug/L	10.00		99	70-130			
1,4-Dioxane - Screen	187		ug/L	200.0		93	0-332			
1-Chlorohexane	9.14		ug/L	10.00		91	70-130			
2,2-Dichloropropane	9.48		ug/L	10.00		95	70-130			
2-Butanone	48.9		ug/L	50.00		98	70-130			
2-Chlorotoluene	10.9		ug/L	10.00		109	70-130			
2-Hexanone	52.2		ug/L	50.00		104	70-130			
4-Chlorotoluene	10.8		ug/L	10.00		108	70-130			
4-Isopropyltoluene	10.8		ug/L	10.00		108	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31204 - 5030B

4-Methyl-2-Pentanone	47.1		ug/L	50.00		94	70-130			
Acetone	49.8		ug/L	50.00		100	70-130			
Benzene	10.2		ug/L	10.00		102	70-130			
Bromobenzene	10.3		ug/L	10.00		103	70-130			
Bromochloromethane	10.2		ug/L	10.00		102	70-130			
Bromodichloromethane	9.15		ug/L	10.00		92	70-130			
Bromoform	9.11		ug/L	10.00		91	70-130			
Bromomethane	9.43		ug/L	10.00		94	70-130			
Carbon Disulfide	9.05		ug/L	10.00		90	70-130			
Carbon Tetrachloride	9.61		ug/L	10.00		96	70-130			
Chlorobenzene	9.39		ug/L	10.00		94	70-130			
Chloroethane	9.33		ug/L	10.00		93	70-130			
Chloroform	10.0		ug/L	10.00		100	70-130			
Chloromethane	9.42		ug/L	10.00		94	70-130			
cis-1,2-Dichloroethene	9.43		ug/L	10.00		94	70-130			
cis-1,3-Dichloropropene	8.75		ug/L	10.00		88	70-130			
Dibromochloromethane	8.82		ug/L	10.00		88	70-130			
Dibromomethane	10.1		ug/L	10.00		101	70-130			
Dichlorodifluoromethane	9.10		ug/L	10.00		91	70-130			
Diethyl Ether	9.11		ug/L	10.00		91	70-130			
Di-isopropyl ether	8.90		ug/L	10.00		89	70-130			
Ethyl tertiary-butyl ether	9.15		ug/L	10.00		92	70-130			
Ethylbenzene	10.5		ug/L	10.00		105	70-130			
Hexachlorobutadiene	8.49		ug/L	10.00		85	70-130			
Hexachloroethane	9.05		ug/L	10.00		90	70-130			
Isopropylbenzene	10.7		ug/L	10.00		107	70-130			
Methyl tert-Butyl Ether	9.19		ug/L	10.00		92	70-130			
Methylene Chloride	9.71		ug/L	10.00		97	70-130			
Naphthalene	9.59		ug/L	10.00		96	70-130			
n-Butylbenzene	10.7		ug/L	10.00		107	70-130			
n-Propylbenzene	10.7		ug/L	10.00		107	70-130			
sec-Butylbenzene	10.9		ug/L	10.00		109	70-130			
Styrene	9.40		ug/L	10.00		94	70-130			
tert-Butylbenzene	11.0		ug/L	10.00		110	70-130			
Tertiary-amyl methyl ether	8.62		ug/L	10.00		86	70-130			
Tetrachloroethene	9.60		ug/L	10.00		96	70-130			
Tetrahydrofuran	8.73		ug/L	10.00		87	70-130			
Toluene	10.2		ug/L	10.00		102	70-130			
trans-1,2-Dichloroethene	9.69		ug/L	10.00		97	70-130			
trans-1,3-Dichloropropene	7.65		ug/L	10.00		76	70-130			
Trichloroethene	10.4		ug/L	10.00		104	70-130			
Trichlorofluoromethane	10.4		ug/L	10.00		104	70-130			
Vinyl Acetate	8.36		ug/L	10.00		84	70-130			
Vinyl Chloride	12.1		ug/L	10.00		121	70-130			
Xylene O	10.5		ug/L	10.00		105	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31204 - 5030B

Xylene P,M	21.1		ug/L	20.00		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	25.0		ug/L	25.00		100	70-130			
Surrogate: 4-Bromofluorobenzene	22.2		ug/L	25.00		89	70-130			
Surrogate: Dibromofluoromethane	25.3		ug/L	25.00		101	70-130			
Surrogate: Toluene-d8	24.0		ug/L	25.00		96	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130	6	25	
1,1,1-Trichloroethane	11.0		ug/L	10.00		110	70-130	4	25	
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130	5	25	
1,1,2-Trichloroethane	10.0		ug/L	10.00		100	70-130	4	25	
1,1-Dichloroethane	10.2		ug/L	10.00		102	70-130	6	25	
1,1-Dichloroethene	10.0		ug/L	10.00		100	70-130	2	25	
1,1-Dichloropropene	11.5		ug/L	10.00		115	70-130	5	25	
1,2,3-Trichlorobenzene	10.3		ug/L	10.00		103	70-130	5	25	
1,2,3-Trichloropropane	9.96		ug/L	10.00		100	70-130	6	25	
1,2,4-Trichlorobenzene	9.98		ug/L	10.00		100	70-130	6	25	
1,2,4-Trimethylbenzene	11.3		ug/L	10.00		113	70-130	5	25	
1,2-Dibromo-3-Chloropropane	10.7		ug/L	10.00		107	70-130	5	25	
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130	2	25	
1,2-Dichlorobenzene	10.6		ug/L	10.00		106	70-130	4	25	
1,2-Dichloroethane	11.0		ug/L	10.00		110	70-130	1	25	
1,2-Dichloropropane	9.69		ug/L	10.00		97	70-130	5	25	
1,3,5-Trimethylbenzene	11.9		ug/L	10.00		119	70-130	6	25	
1,3-Dichlorobenzene	11.0		ug/L	10.00		110	70-130	5	25	
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130	3	25	
1,4-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	4	25	
1,4-Dioxane - Screen	179		ug/L	200.0		89	0-332	4	200	
1-Chlorohexane	9.86		ug/L	10.00		99	70-130	8	25	
2,2-Dichloropropane	9.68		ug/L	10.00		97	70-130	2	25	
2-Butanone	49.0		ug/L	50.00		98	70-130	0.06	25	
2-Chlorotoluene	11.4		ug/L	10.00		114	70-130	4	25	
2-Hexanone	52.3		ug/L	50.00		105	70-130	0.2	25	
4-Chlorotoluene	11.4		ug/L	10.00		114	70-130	6	25	
4-Isopropyltoluene	11.3		ug/L	10.00		113	70-130	4	25	
4-Methyl-2-Pentanone	48.4		ug/L	50.00		97	70-130	3	25	
Acetone	47.1		ug/L	50.00		94	70-130	5	25	
Benzene	10.6		ug/L	10.00		106	70-130	4	25	
Bromobenzene	10.7		ug/L	10.00		107	70-130	4	25	
Bromochloromethane	10.3		ug/L	10.00		103	70-130	2	25	
Bromodichloromethane	9.61		ug/L	10.00		96	70-130	5	25	
Bromoform	9.50		ug/L	10.00		95	70-130	4	25	
Bromomethane	10.2		ug/L	10.00		102	70-130	7	25	
Carbon Disulfide	9.72		ug/L	10.00		97	70-130	7	25	
Carbon Tetrachloride	10.4		ug/L	10.00		104	70-130	8	25	
Chlorobenzene	9.85		ug/L	10.00		98	70-130	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31204 - 5030B

Chloroethane	9.51		ug/L	10.00		95	70-130	2	25	
Chloroform	10.6		ug/L	10.00		106	70-130	5	25	
Chloromethane	9.89		ug/L	10.00		99	70-130	5	25	
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130	6	25	
cis-1,3-Dichloropropene	9.26		ug/L	10.00		93	70-130	6	25	
Dibromochloromethane	9.29		ug/L	10.00		93	70-130	5	25	
Dibromomethane	10.5		ug/L	10.00		105	70-130	3	25	
Dichlorodifluoromethane	9.19		ug/L	10.00		92	70-130	1	25	
Diethyl Ether	9.49		ug/L	10.00		95	70-130	4	25	
Di-isopropyl ether	9.47		ug/L	10.00		95	70-130	6	25	
Ethyl tertiary-butyl ether	9.52		ug/L	10.00		95	70-130	4	25	
Ethylbenzene	11.0		ug/L	10.00		110	70-130	5	25	
Hexachlorobutadiene	9.30		ug/L	10.00		93	70-130	9	25	
Hexachloroethane	9.45		ug/L	10.00		94	70-130	4	25	
Isopropylbenzene	11.4		ug/L	10.00		114	70-130	6	25	
Methyl tert-Butyl Ether	9.61		ug/L	10.00		96	70-130	4	25	
Methylene Chloride	10.2		ug/L	10.00		102	70-130	5	25	
Naphthalene	9.94		ug/L	10.00		99	70-130	4	25	
n-Butylbenzene	11.3		ug/L	10.00		113	70-130	6	25	
n-Propylbenzene	11.3		ug/L	10.00		113	70-130	5	25	
sec-Butylbenzene	11.6		ug/L	10.00		116	70-130	6	25	
Styrene	9.79		ug/L	10.00		98	70-130	4	25	
tert-Butylbenzene	11.5		ug/L	10.00		115	70-130	5	25	
Tertiary-amyl methyl ether	9.05		ug/L	10.00		90	70-130	5	25	
Tetrachloroethene	9.85		ug/L	10.00		98	70-130	3	25	
Tetrahydrofuran	8.64		ug/L	10.00		86	70-130	1	25	
Toluene	10.8		ug/L	10.00		108	70-130	6	25	
trans-1,2-Dichloroethene	9.84		ug/L	10.00		98	70-130	2	25	
trans-1,3-Dichloropropene	8.10		ug/L	10.00		81	70-130	6	25	
Trichloroethene	10.7		ug/L	10.00		107	70-130	4	25	
Trichlorofluoromethane	10.7		ug/L	10.00		107	70-130	3	25	
Vinyl Acetate	8.78		ug/L	10.00		88	70-130	5	25	
Vinyl Chloride	12.8		ug/L	10.00		128	70-130	5	25	
Xylene O	10.9		ug/L	10.00		109	70-130	4	25	
Xylene P,M	22.1		ug/L	20.00		110	70-130	5	25	
Surrogate: 1,2-Dichloroethane-d4	24.7		ug/L	25.00		99	70-130			
Surrogate: 4-Bromofluorobenzene	22.5		ug/L	25.00		90	70-130			
Surrogate: Dibromofluoromethane	25.4		ug/L	25.00		101	70-130			
Surrogate: Toluene-d8	24.3		ug/L	25.00		97	70-130			

Batch CH31238 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

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
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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

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							
Surrogate: 1,2-Dichloroethane-d4	0.0218		mg/L	0.02500		87	70-130			
Surrogate: 4-Bromofluorobenzene	0.0204		mg/L	0.02500		82	70-130			
Surrogate: Dibromofluoromethane	0.0235		mg/L	0.02500		94	70-130			
Surrogate: Toluene-d8	0.0241		mg/L	0.02500		96	70-130			

LCS

1,1,1,2-Tetrachloroethane	10.0		ug/L	10.00		100	70-130			
1,1,1-Trichloroethane	9.40		ug/L	10.00		94	70-130			
1,1,2,2-Tetrachloroethane	11.1		ug/L	10.00		111	70-130			
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1-Dichloroethane	9.65		ug/L	10.00		96	70-130			
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130			
1,1-Dichloropropene	10.8		ug/L	10.00		108	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	11.2		ug/L	10.00		112	70-130			
1,2-Dibromo-3-Chloropropane	10.8		ug/L	10.00		108	70-130			
1,2-Dibromoethane	10.7		ug/L	10.00		107	70-130			
1,2-Dichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,2-Dichloroethane	8.98		ug/L	10.00		90	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

1,2-Dichloropropane	9.81		ug/L	10.00		98	70-130			
1,3,5-Trimethylbenzene	11.7		ug/L	10.00		117	70-130			
1,3-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,3-Dichloropropane	10.8		ug/L	10.00		108	70-130			
1,4-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,4-Dioxane - Screen	197		ug/L	200.0		99	0-332			
1-Chlorohexane	10.8		ug/L	10.00		108	70-130			
2,2-Dichloropropane	9.03		ug/L	10.00		90	70-130			
2-Butanone	50.2		ug/L	50.00		100	70-130			
2-Chlorotoluene	11.4		ug/L	10.00		114	70-130			
2-Hexanone	57.6		ug/L	50.00		115	70-130			
4-Chlorotoluene	11.2		ug/L	10.00		112	70-130			
4-Isopropyltoluene	11.0		ug/L	10.00		110	70-130			
4-Methyl-2-Pentanone	51.0		ug/L	50.00		102	70-130			
Acetone	48.7		ug/L	50.00		97	70-130			
Benzene	10.5		ug/L	10.00		105	70-130			
Bromobenzene	11.3		ug/L	10.00		113	70-130			
Bromochloromethane	10.1		ug/L	10.00		101	70-130			
Bromodichloromethane	8.76		ug/L	10.00		88	70-130			
Bromoform	10.0		ug/L	10.00		100	70-130			
Bromomethane	8.23		ug/L	10.00		82	70-130			
Carbon Disulfide	10.1		ug/L	10.00		101	70-130			
Carbon Tetrachloride	8.93		ug/L	10.00		89	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	9.68		ug/L	10.00		97	70-130			
Chloroform	9.21		ug/L	10.00		92	70-130			
Chloromethane	8.88		ug/L	10.00		89	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	9.55		ug/L	10.00		96	70-130			
Dibromochloromethane	9.47		ug/L	10.00		95	70-130			
Dibromomethane	9.86		ug/L	10.00		99	70-130			
Dichlorodifluoromethane	6.66		ug/L	10.00		67	70-130			
Diethyl Ether	10.3		ug/L	10.00		103	70-130			
Di-isopropyl ether	9.92		ug/L	10.00		99	70-130			
Ethyl tertiary-butyl ether	9.82		ug/L	10.00		98	70-130			
Ethylbenzene	11.2		ug/L	10.00		112	70-130			
Hexachlorobutadiene	8.69		ug/L	10.00		87	70-130			
Hexachloroethane	9.78		ug/L	10.00		98	70-130			
Isopropylbenzene	11.7		ug/L	10.00		117	70-130			
Methyl tert-Butyl Ether	9.76		ug/L	10.00		98	70-130			
Methylene Chloride	10.5		ug/L	10.00		105	70-130			
Naphthalene	10.9		ug/L	10.00		109	70-130			
n-Butylbenzene	10.8		ug/L	10.00		108	70-130			
n-Propylbenzene	11.4		ug/L	10.00		114	70-130			
sec-Butylbenzene	11.5		ug/L	10.00		115	70-130			

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CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

Styrene	10.2		ug/L	10.00		102	70-130			
tert-Butylbenzene	11.6		ug/L	10.00		116	70-130			
Tertiary-amyl methyl ether	9.45		ug/L	10.00		94	70-130			
Tetrachloroethene	9.94		ug/L	10.00		99	70-130			
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130			
Toluene	10.6		ug/L	10.00		106	70-130			
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
trans-1,3-Dichloropropene	8.18		ug/L	10.00		82	70-130			
Trichloroethene	9.83		ug/L	10.00		98	70-130			
Trichlorofluoromethane	8.40		ug/L	10.00		84	70-130			
Vinyl Acetate	9.53		ug/L	10.00		95	70-130			
Vinyl Chloride	10.5		ug/L	10.00		105	70-130			
Xylene O	11.4		ug/L	10.00		114	70-130			
Xylene P,M	23.0		ug/L	20.00		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0196		mg/L	0.02500		78	70-130			
Surrogate: 4-Bromofluorobenzene	0.0213		mg/L	0.02500		85	70-130			
Surrogate: Dibromofluoromethane	0.0231		mg/L	0.02500		92	70-130			
Surrogate: Toluene-d8	0.0255		mg/L	0.02500		102	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.41		ug/L	10.00		94	70-130	7	25	
1,1,1-Trichloroethane	9.11		ug/L	10.00		91	70-130	3	25	
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130	5	25	
1,1,2-Trichloroethane	9.67		ug/L	10.00		97	70-130	5	25	
1,1-Dichloroethane	9.38		ug/L	10.00		94	70-130	3	25	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	1	25	
1,1-Dichloropropene	10.6		ug/L	10.00		106	70-130	2	25	
1,2,3-Trichlorobenzene	10.1		ug/L	10.00		101	70-130	3	25	
1,2,3-Trichloropropane	9.78		ug/L	10.00		98	70-130	3	25	
1,2,4-Trichlorobenzene	10.1		ug/L	10.00		101	70-130	2	25	
1,2,4-Trimethylbenzene	11.1		ug/L	10.00		111	70-130	0.8	25	
1,2-Dibromo-3-Chloropropane	10.3		ug/L	10.00		103	70-130	5	25	
1,2-Dibromoethane	9.85		ug/L	10.00		98	70-130	8	25	
1,2-Dichlorobenzene	10.5		ug/L	10.00		105	70-130	2	25	
1,2-Dichloroethane	8.81		ug/L	10.00		88	70-130	2	25	
1,2-Dichloropropane	9.46		ug/L	10.00		95	70-130	4	25	
1,3,5-Trimethylbenzene	11.5		ug/L	10.00		115	70-130	2	25	
1,3-Dichlorobenzene	10.8		ug/L	10.00		108	70-130	0.9	25	
1,3-Dichloropropane	10.3		ug/L	10.00		103	70-130	5	25	
1,4-Dichlorobenzene	9.80		ug/L	10.00		98	70-130	6	25	
1,4-Dioxane - Screen	188		ug/L	200.0		94	0-332	5	200	
1-Chlorohexane	10.3		ug/L	10.00		103	70-130	4	25	
2,2-Dichloropropane	8.72		ug/L	10.00		87	70-130	3	25	
2-Butanone	46.3		ug/L	50.00		93	70-130	8	25	
2-Chlorotoluene	11.2		ug/L	10.00		112	70-130	2	25	
2-Hexanone	51.6		ug/L	50.00		103	70-130	11	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

4-Chlorotoluene	11.0		ug/L	10.00		110	70-130	1	25	
4-Isopropyltoluene	10.8		ug/L	10.00		108	70-130	2	25	
4-Methyl-2-Pentanone	48.7		ug/L	50.00		97	70-130	5	25	
Acetone	44.3		ug/L	50.00		89	70-130	9	25	
Benzene	10.4		ug/L	10.00		104	70-130	2	25	
Bromobenzene	10.7		ug/L	10.00		107	70-130	5	25	
Bromochloromethane	9.76		ug/L	10.00		98	70-130	4	25	
Bromodichloromethane	8.68		ug/L	10.00		87	70-130	0.9	25	
Bromoform	9.35		ug/L	10.00		94	70-130	7	25	
Bromomethane	8.05		ug/L	10.00		80	70-130	2	25	
Carbon Disulfide	9.70		ug/L	10.00		97	70-130	4	25	
Carbon Tetrachloride	8.71		ug/L	10.00		87	70-130	2	25	
Chlorobenzene	9.56		ug/L	10.00		96	70-130	6	25	
Chloroethane	9.30		ug/L	10.00		93	70-130	4	25	
Chloroform	8.91		ug/L	10.00		89	70-130	3	25	
Chloromethane	8.77		ug/L	10.00		88	70-130	1	25	
cis-1,2-Dichloroethene	9.78		ug/L	10.00		98	70-130	3	25	
cis-1,3-Dichloropropene	9.23		ug/L	10.00		92	70-130	3	25	
Dibromochloromethane	9.06		ug/L	10.00		91	70-130	4	25	
Dibromomethane	9.52		ug/L	10.00		95	70-130	4	25	
Dichlorodifluoromethane	6.50		ug/L	10.00		65	70-130	2	25	B-
Diethyl Ether	10.2		ug/L	10.00		102	70-130	1	25	
Di-isopropyl ether	9.78		ug/L	10.00		98	70-130	1	25	
Ethyl tertiary-butyl ether	9.52		ug/L	10.00		95	70-130	3	25	
Ethylbenzene	10.6		ug/L	10.00		106	70-130	5	25	
Hexachlorobutadiene	8.59		ug/L	10.00		86	70-130	1	25	
Hexachloroethane	9.64		ug/L	10.00		96	70-130	1	25	
Isopropylbenzene	11.3		ug/L	10.00		113	70-130	3	25	
Methyl tert-Butyl Ether	9.41		ug/L	10.00		94	70-130	4	25	
Methylene Chloride	10.5		ug/L	10.00		105	70-130	0.1	25	
Naphthalene	10.4		ug/L	10.00		104	70-130	5	25	
n-Butylbenzene	10.7		ug/L	10.00		107	70-130	2	25	
n-Propylbenzene	11.1		ug/L	10.00		111	70-130	2	25	
sec-Butylbenzene	11.3		ug/L	10.00		113	70-130	2	25	
Styrene	9.85		ug/L	10.00		98	70-130	4	25	
tert-Butylbenzene	11.2		ug/L	10.00		112	70-130	3	25	
Tertiary-amyl methyl ether	9.24		ug/L	10.00		92	70-130	2	25	
Tetrachloroethene	9.56		ug/L	10.00		96	70-130	4	25	
Tetrahydrofuran	9.39		ug/L	10.00		94	70-130	9	25	
Toluene	10.4		ug/L	10.00		104	70-130	2	25	
trans-1,2-Dichloroethene	9.68		ug/L	10.00		97	70-130	4	25	
trans-1,3-Dichloropropene	7.92		ug/L	10.00		79	70-130	3	25	
Trichloroethene	9.55		ug/L	10.00		96	70-130	3	25	
Trichlorofluoromethane	8.32		ug/L	10.00		83	70-130	1	25	
Vinyl Acetate	9.34		ug/L	10.00		93	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

Vinyl Chloride	10.2		ug/L	10.00		102	70-130	3	25	
Xylene O	10.7		ug/L	10.00		107	70-130	6	25	
Xylene P,M	21.7		ug/L	20.00		108	70-130	6	25	
Surrogate: 1,2-Dichloroethane-d4	0.0196		mg/L	0.02500		78	70-130			
Surrogate: 4-Bromofluorobenzene	0.0211		mg/L	0.02500		84	70-130			
Surrogate: Dibromofluoromethane	0.0230		mg/L	0.02500		92	70-130			
Surrogate: Toluene-d8	0.0247		mg/L	0.02500		99	70-130			

Batch CH31430 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31430 - 5030B

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							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0221		mg/L	0.02500		89	70-130			
Surrogate: 4-Bromofluorobenzene	0.0237		mg/L	0.02500		95	70-130			
Surrogate: Dibromofluoromethane	0.0224		mg/L	0.02500		90	70-130			
Surrogate: Toluene-d8	0.0246		mg/L	0.02500		98	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.20		ug/L	10.00		92	70-130
1,1,1-Trichloroethane	9.97		ug/L	10.00		100	70-130



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31430 - 5030B

1,1,2,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1-Dichloroethane	9.43		ug/L	10.00		94	70-130			
1,1-Dichloroethene	9.92		ug/L	10.00		99	70-130			
1,1-Dichloropropene	9.87		ug/L	10.00		99	70-130			
1,2,3-Trichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,2,3-Trichloropropane	10.4		ug/L	10.00		104	70-130			
1,2,4-Trichlorobenzene	9.62		ug/L	10.00		96	70-130			
1,2,4-Trimethylbenzene	9.22		ug/L	10.00		92	70-130			
1,2-Dibromo-3-Chloropropane	8.50		ug/L	10.00		85	70-130			
1,2-Dibromoethane	9.61		ug/L	10.00		96	70-130			
1,2-Dichlorobenzene	10.6		ug/L	10.00		106	70-130			
1,2-Dichloroethane	9.35		ug/L	10.00		94	70-130			
1,2-Dichloropropane	9.08		ug/L	10.00		91	70-130			
1,3,5-Trimethylbenzene	9.60		ug/L	10.00		96	70-130			
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,3-Dichloropropane	9.54		ug/L	10.00		95	70-130			
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,4-Dioxane - Screen	208		ug/L	200.0		104	0-332			
1-Chlorohexane	8.51		ug/L	10.00		85	70-130			
2,2-Dichloropropane	9.35		ug/L	10.00		94	70-130			
2-Butanone	49.8		ug/L	50.00		100	70-130			
2-Chlorotoluene	9.78		ug/L	10.00		98	70-130			
2-Hexanone	42.2		ug/L	50.00		84	70-130			
4-Chlorotoluene	9.45		ug/L	10.00		94	70-130			
4-Isopropyltoluene	9.21		ug/L	10.00		92	70-130			
4-Methyl-2-Pentanone	47.0		ug/L	50.00		94	70-130			
Acetone	48.1		ug/L	50.00		96	70-130			
Benzene	10.3		ug/L	10.00		103	70-130			
Bromobenzene	10.2		ug/L	10.00		102	70-130			
Bromochloromethane	11.0		ug/L	10.00		110	70-130			
Bromodichloromethane	9.05		ug/L	10.00		90	70-130			
Bromoform	8.72		ug/L	10.00		87	70-130			
Bromomethane	8.52		ug/L	10.00		85	70-130			
Carbon Disulfide	9.89		ug/L	10.00		99	70-130			
Carbon Tetrachloride	10.0		ug/L	10.00		100	70-130			
Chlorobenzene	10.2		ug/L	10.00		102	70-130			
Chloroethane	9.41		ug/L	10.00		94	70-130			
Chloroform	10.2		ug/L	10.00		102	70-130			
Chloromethane	7.93		ug/L	10.00		79	70-130			
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
cis-1,3-Dichloropropene	8.94		ug/L	10.00		89	70-130			
Dibromochloromethane	8.44		ug/L	10.00		84	70-130			
Dibromomethane	10.0		ug/L	10.00		100	70-130			
Dichlorodifluoromethane	7.55		ug/L	10.00		76	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31430 - 5030B

Diethyl Ether	8.96		ug/L	10.00		90	70-130			
Di-isopropyl ether	8.45		ug/L	10.00		84	70-130			
Ethyl tertiary-butyl ether	8.48		ug/L	10.00		85	70-130			
Ethylbenzene	9.50		ug/L	10.00		95	70-130			
Hexachlorobutadiene	9.70		ug/L	10.00		97	70-130			
Hexachloroethane	8.45		ug/L	10.00		84	70-130			
Isopropylbenzene	9.63		ug/L	10.00		96	70-130			
Methyl tert-Butyl Ether	9.05		ug/L	10.00		90	70-130			
Methylene Chloride	10.5		ug/L	10.00		105	70-130			
Naphthalene	8.42		ug/L	10.00		84	70-130			
n-Butylbenzene	8.76		ug/L	10.00		88	70-130			
n-Propylbenzene	9.29		ug/L	10.00		93	70-130			
sec-Butylbenzene	9.61		ug/L	10.00		96	70-130			
Styrene	9.38		ug/L	10.00		94	70-130			
tert-Butylbenzene	9.53		ug/L	10.00		95	70-130			
Tertiary-amyl methyl ether	8.49		ug/L	10.00		85	70-130			
Tetrachloroethene	9.83		ug/L	10.00		98	70-130			
Tetrahydrofuran	7.90		ug/L	10.00		79	70-130			
Toluene	10.8		ug/L	10.00		108	70-130			
trans-1,2-Dichloroethene	9.90		ug/L	10.00		99	70-130			
trans-1,3-Dichloropropene	7.60		ug/L	10.00		76	70-130			
Trichloroethene	9.86		ug/L	10.00		99	70-130			
Trichlorofluoromethane	10.2		ug/L	10.00		102	70-130			
Vinyl Acetate	8.49		ug/L	10.00		85	70-130			
Vinyl Chloride	10.4		ug/L	10.00		104	70-130			
Xylene O	10.2		ug/L	10.00		102	70-130			
Xylene P,M	19.9		ug/L	20.00		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0251		mg/L	0.02500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0265		mg/L	0.02500		106	70-130			
Surrogate: Toluene-d8	0.0238		mg/L	0.02500		95	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.90		ug/L	10.00		89	70-130	3	25	
1,1,1-Trichloroethane	9.44		ug/L	10.00		94	70-130	5	25	
1,1,2,2-Tetrachloroethane	10.1		ug/L	10.00		101	70-130	3	25	
1,1,2-Trichloroethane	9.55		ug/L	10.00		96	70-130	5	25	
1,1-Dichloroethane	8.71		ug/L	10.00		87	70-130	8	25	
1,1-Dichloroethene	9.26		ug/L	10.00		93	70-130	7	25	
1,1-Dichloropropene	9.47		ug/L	10.00		95	70-130	4	25	
1,2,3-Trichlorobenzene	9.67		ug/L	10.00		97	70-130	8	25	
1,2,3-Trichloropropane	10.3		ug/L	10.00		103	70-130	1	25	
1,2,4-Trichlorobenzene	9.41		ug/L	10.00		94	70-130	2	25	
1,2,4-Trimethylbenzene	9.36		ug/L	10.00		94	70-130	2	25	
1,2-Dibromo-3-Chloropropane	8.04		ug/L	10.00		80	70-130	6	25	
1,2-Dibromoethane	9.49		ug/L	10.00		95	70-130	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31430 - 5030B

1,2-Dichlorobenzene	10.5		ug/L	10.00		105	70-130	2	25	
1,2-Dichloroethane	8.74		ug/L	10.00		87	70-130	7	25	
1,2-Dichloropropane	8.73		ug/L	10.00		87	70-130	4	25	
1,3,5-Trimethylbenzene	9.94		ug/L	10.00		99	70-130	3	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	0	25	
1,3-Dichloropropane	9.46		ug/L	10.00		95	70-130	0.8	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	1	25	
1,4-Dioxane - Screen	148		ug/L	200.0		74	0-332	34	200	
1-Chlorohexane	8.66		ug/L	10.00		87	70-130	2	25	
2,2-Dichloropropane	8.64		ug/L	10.00		86	70-130	8	25	
2-Butanone	44.9		ug/L	50.00		90	70-130	10	25	
2-Chlorotoluene	9.67		ug/L	10.00		97	70-130	1	25	
2-Hexanone	40.2		ug/L	50.00		80	70-130	5	25	
4-Chlorotoluene	9.45		ug/L	10.00		94	70-130	0	25	
4-Isopropyltoluene	9.32		ug/L	10.00		93	70-130	1	25	
4-Methyl-2-Pentanone	43.9		ug/L	50.00		88	70-130	7	25	
Acetone	40.7		ug/L	50.00		81	70-130	17	25	
Benzene	9.70		ug/L	10.00		97	70-130	6	25	
Bromobenzene	10.1		ug/L	10.00		101	70-130	2	25	
Bromochloromethane	10.4		ug/L	10.00		104	70-130	5	25	
Bromodichloromethane	8.65		ug/L	10.00		86	70-130	5	25	
Bromoform	8.53		ug/L	10.00		85	70-130	2	25	
Bromomethane	8.02		ug/L	10.00		80	70-130	6	25	
Carbon Disulfide	9.42		ug/L	10.00		94	70-130	5	25	
Carbon Tetrachloride	9.72		ug/L	10.00		97	70-130	3	25	
Chlorobenzene	10.2		ug/L	10.00		102	70-130	0.3	25	
Chloroethane	8.24		ug/L	10.00		82	70-130	13	25	
Chloroform	9.42		ug/L	10.00		94	70-130	8	25	
Chloromethane	7.22		ug/L	10.00		72	70-130	9	25	
cis-1,2-Dichloroethene	9.57		ug/L	10.00		96	70-130	5	25	
cis-1,3-Dichloropropene	8.37		ug/L	10.00		84	70-130	7	25	
Dibromochloromethane	8.44		ug/L	10.00		84	70-130	0	25	
Dibromomethane	9.28		ug/L	10.00		93	70-130	8	25	
Dichlorodifluoromethane	7.23		ug/L	10.00		72	70-130	4	25	
Diethyl Ether	8.49		ug/L	10.00		85	70-130	5	25	
Di-isopropyl ether	7.98		ug/L	10.00		80	70-130	6	25	
Ethyl tertiary-butyl ether	8.09		ug/L	10.00		81	70-130	5	25	
Ethylbenzene	9.54		ug/L	10.00		95	70-130	0.4	25	
Hexachlorobutadiene	8.79		ug/L	10.00		88	70-130	10	25	
Hexachloroethane	8.42		ug/L	10.00		84	70-130	0.4	25	
Isopropylbenzene	9.70		ug/L	10.00		97	70-130	0.7	25	
Methyl tert-Butyl Ether	8.48		ug/L	10.00		85	70-130	7	25	
Methylene Chloride	9.77		ug/L	10.00		98	70-130	7	25	
Naphthalene	7.99		ug/L	10.00		80	70-130	5	25	
n-Butylbenzene	8.61		ug/L	10.00		86	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31430 - 5030B

n-Propylbenzene	9.45		ug/L	10.00		94	70-130	2	25	
sec-Butylbenzene	9.76		ug/L	10.00		98	70-130	2	25	
Styrene	9.32		ug/L	10.00		93	70-130	0.6	25	
tert-Butylbenzene	9.70		ug/L	10.00		97	70-130	2	25	
Tertiary-amyl methyl ether	8.02		ug/L	10.00		80	70-130	6	25	
Tetrachloroethene	9.86		ug/L	10.00		99	70-130	0.3	25	
Tetrahydrofuran	7.76		ug/L	10.00		78	70-130	2	25	
Toluene	10.1		ug/L	10.00		101	70-130	7	25	
trans-1,2-Dichloroethene	9.51		ug/L	10.00		95	70-130	4	25	
trans-1,3-Dichloropropene	7.22		ug/L	10.00		72	70-130	5	25	
Trichloroethene	9.49		ug/L	10.00		95	70-130	4	25	
Trichlorofluoromethane	9.83		ug/L	10.00		98	70-130	3	25	
Vinyl Acetate	7.99		ug/L	10.00		80	70-130	6	25	
Vinyl Chloride	9.78		ug/L	10.00		98	70-130	6	25	
Xylene O	10.1		ug/L	10.00		101	70-130	0.3	25	
Xylene P,M	20.0		ug/L	20.00		100	70-130	0.2	25	
Surrogate: 1,2-Dichloroethane-d4	0.0235		mg/L	0.02500		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0241		mg/L	0.02500		96	70-130			
Surrogate: Dibromofluoromethane	0.0247		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0244		mg/L	0.02500		97	70-130			

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH30842 - 3510C

Blank

2-Methylnaphthalene	ND	0.0002	mg/L							
Acenaphthene	ND	0.0002	mg/L							
Acenaphthylene	ND	0.0002	mg/L							
Anthracene	ND	0.0002	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.0002	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.0002	mg/L							
Fluorene	ND	0.0002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	0.0004	0.0002	mg/L							
Phenanthrene	ND	0.0002	mg/L							
Pyrene	ND	0.0002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.00119		mg/L	0.002500		48	30-130			
Surrogate: 2-Fluorobiphenyl	0.00127		mg/L	0.002500		51	30-130			
Surrogate: Nitrobenzene-d5	0.00160		mg/L	0.002500		64	30-130			
Surrogate: p-Terphenyl-d14	0.00186		mg/L	0.002500		75	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH30842 - 3510C

LCS

2-Methylnaphthalene	0.0024	0.0002	mg/L	0.004000		61	40-140			
Acenaphthene	0.0023	0.0002	mg/L	0.004000		57	40-140			
Acenaphthylene	0.0021	0.0002	mg/L	0.004000		52	40-140			
Anthracene	0.0024	0.0002	mg/L	0.004000		61	40-140			
Benzo(a)anthracene	0.0025	0.00005	mg/L	0.004000		63	40-140			
Benzo(a)pyrene	0.0023	0.00005	mg/L	0.004000		57	40-140			
Benzo(b)fluoranthene	0.0025	0.00005	mg/L	0.004000		62	40-140			
Benzo(g,h,i)perylene	0.0026	0.0002	mg/L	0.004000		66	40-140			
Benzo(k)fluoranthene	0.0023	0.00005	mg/L	0.004000		57	40-140			
Chrysene	0.0025	0.00005	mg/L	0.004000		62	40-140			
Dibenzo(a,h)Anthracene	0.0029	0.00005	mg/L	0.004000		72	40-140			
Fluoranthene	0.0023	0.0002	mg/L	0.004000		57	40-140			
Fluorene	0.0024	0.0002	mg/L	0.004000		60	40-140			
Indeno(1,2,3-cd)Pyrene	0.0033	0.00005	mg/L	0.004000		82	40-140			
Naphthalene	0.0024	0.0002	mg/L	0.004000		59	40-140			
Phenanthrene	0.0024	0.0002	mg/L	0.004000		60	40-140			
Pyrene	0.0025	0.0002	mg/L	0.004000		62	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.00130		mg/L	0.002500		52	30-130			
Surrogate: 2-Fluorobiphenyl	0.00142		mg/L	0.002500		57	30-130			
Surrogate: Nitrobenzene-d5	0.00170		mg/L	0.002500		68	30-130			
Surrogate: p-Terphenyl-d14	0.00202		mg/L	0.002500		81	30-130			

LCS Dup

2-Methylnaphthalene	0.0027	0.0002	mg/L	0.004000		67	40-140	10	20	
Acenaphthene	0.0026	0.0002	mg/L	0.004000		64	40-140	11	20	
Acenaphthylene	0.0024	0.0002	mg/L	0.004000		59	40-140	13	20	
Anthracene	0.0028	0.0002	mg/L	0.004000		69	40-140	13	20	
Benzo(a)anthracene	0.0028	0.00005	mg/L	0.004000		71	40-140	12	20	
Benzo(a)pyrene	0.0026	0.00005	mg/L	0.004000		66	40-140	14	20	
Benzo(b)fluoranthene	0.0028	0.00005	mg/L	0.004000		70	40-140	12	20	
Benzo(g,h,i)perylene	0.0030	0.0002	mg/L	0.004000		75	40-140	13	20	
Benzo(k)fluoranthene	0.0026	0.00005	mg/L	0.004000		65	40-140	14	20	
Chrysene	0.0028	0.00005	mg/L	0.004000		69	40-140	11	20	
Dibenzo(a,h)Anthracene	0.0033	0.00005	mg/L	0.004000		81	40-140	12	20	
Fluoranthene	0.0026	0.0002	mg/L	0.004000		66	40-140	14	20	
Fluorene	0.0027	0.0002	mg/L	0.004000		67	40-140	10	20	
Indeno(1,2,3-cd)Pyrene	0.0031	0.00005	mg/L	0.004000		77	40-140	5	20	
Naphthalene	0.0027	0.0002	mg/L	0.004000		67	40-140	12	20	
Phenanthrene	0.0028	0.0002	mg/L	0.004000		69	40-140	14	20	
Pyrene	0.0028	0.0002	mg/L	0.004000		69	40-140	10	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.00141		mg/L	0.002500		56	30-130			
Surrogate: 2-Fluorobiphenyl	0.00157		mg/L	0.002500		63	30-130			
Surrogate: Nitrobenzene-d5	0.00182		mg/L	0.002500		73	30-130			
Surrogate: p-Terphenyl-d14	0.00215		mg/L	0.002500		86	30-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

Classical Chemistry

Batch CH31214 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0197	0.0050	mg/L	0.02006		98	90-110			
Total Cyanide (LL)	0.0197	0.0050	mg/L	0.02006		98	90-110			

LCS

Dissolved Cyanide	0.148	0.0050	mg/L	0.1504		98	90-110			
Total Cyanide (LL)	0.148	0.0050	mg/L	0.1504		98	90-110			

LCS Dup

Dissolved Cyanide	0.144	0.0050	mg/L	0.1504		95	90-110	3	20	
Total Cyanide (LL)	0.144	0.0050	mg/L	0.1504		95	90-110	3	20	

Batch CH31308 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0218	0.0050	mg/L	0.02006		108	90-110			
Total Cyanide (LL)	0.0218	0.0050	mg/L	0.02006		108	90-110			

LCS

Dissolved Cyanide	0.149	0.0050	mg/L	0.1504		99	90-110			
Total Cyanide (LL)	0.149	0.0050	mg/L	0.1504		99	90-110			

LCS Dup

Dissolved Cyanide	0.148	0.0050	mg/L	0.1504		99	90-110	0.6	20	
Total Cyanide (LL)	0.148	0.0050	mg/L	0.1504		99	90-110	0.6	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308127

Notes and Definitions

U	Analyte included in the analysis, but not detected
PT	Pentachlorophenol tailing factor > 2.
EL	Elevated Method Reporting Limits due to sample matrix (EL).
D	Diluted.
C-	Continuing Calibration recovery is below lower control limit (C-).
B-	Blank Spike recovery is below lower control limit (B-).
B	Present in Method Blank (B).
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: 1308127

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/labs/waterlabs-instate.php>

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: RI0002

http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

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://www4.egov.nh.gov/des/nhelap/namesearch.asp>

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/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301

http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental Inc

Client Project ID: _____

Shipped/Delivered Via: ~~ESS Courier~~ *Client*

ESS Project ID: 13080127

Date Project Due: 8/14/13

Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?

☒ No

Air No.: _____

2. Were Custody Seals Present?

☐ No

3. Were Custody Seals Intact?

☐ N/A

4. Is Radiation count < 100 CPM?

☐ Yes

5. Is a cooler present?

☐ Yes

Cooler Temp: 5.2

Iced With: Ice

6. Was COC included with samples?

☐ Yes

7. Was COC signed and dated by client?

☐ Yes

8. Does the COC match the sample

☐ Yes

9. Is COC complete and correct?

☐ Yes

10. Are the samples properly preserved?

☐ Yes

11. Proper sample containers used?

☐ Yes

12. Any air bubbles in the VOA vials?

☒ Yes

13. Holding times exceeded?

☐ No

14. Sufficient sample volumes?

☐ Yes

15. Any Subcontracting needed?

☐ No

16. Are ESS labels on correct containers?

☒ Yes ☐ No

17. Were samples received intact?

☒ Yes ☐ No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

** Vials w/ air bubbles Marked CEO 8/8/13*

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	1 L Glass	2	HCL
1	Yes	1 L Glass	2	NP
1	Yes	250 ml Plastic	2	NaOH
1	Yes	40 ml - VOA	3	HCL
2	Yes	1 L Glass	2	HCL
2	Yes	1 L Glass	2	NP
2	Yes	250 ml Plastic	2	NaOH
2	Yes	40 ml - VOA	3	HCL
3	Yes	1 L Glass	2	HCL
3	Yes	1 L Glass	2	NP
3	Yes	250 ml Plastic	2	NaOH
3	Yes	40 ml - VOA	3	HCL
4	Yes	1 L Glass	2	HCL
4	Yes	1 L Glass	2	NP
4	Yes	250 ml Plastic	2	NaOH
4	Yes	40 ml - VOA	3	HCL
5	Yes	1 L Glass	2	HCL
5	Yes	1 L Glass	2	NP
5	Yes	250 ml Plastic	2	NaOH
5	Yes	40 ml - VOA	3	HCL
6	Yes	1 L Glass	2	HCL
6	Yes	1 L Glass	2	NP
6	Yes	250 ml Plastic	2	NaOH
6	Yes	40 ml - VOA	3	HCL
7	Yes	1 L Glass	2	HCL

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental Inc

ESS Project ID: 13080127

7	Yes	1 L Glass	2	NP
7	Yes	250 ml Plastic	2	NaOH
7	Yes	40 ml - VOA	3	HCL
8	Yes	1 L Glass	2	HCL
8	Yes	1 L Glass	2	NP
8	Yes	250 ml Plastic	2	NaOH
8	Yes	40 ml - VOA	3	HCL
9	Yes	1 L Glass	2	HCL
9	Yes	1 L Glass	2	NP
9	Yes	250 ml Plastic	2	NaOH
9	Yes	40 ml - VOA	3	HCL
10	Yes	1 L Glass	2	HCL
10	Yes	1 L Glass	2	NP
10	Yes	250 ml Plastic	2	NaOH
10	Yes	40 ml - VOA	3	HCL
11	Yes	1 L Glass	2	HCL
11	Yes	1 L Glass	2	NP
11	Yes	250 ml Plastic	2	NaOH
11	Yes	40 ml - VOA	3	HCL
12	Yes	1 L Glass	2	HCL
12	Yes	1 L Glass	2	NP
12	Yes	250 ml Plastic	2	NaOH
12	Yes	40 ml - VOA	3	HCL
13	Yes	1 L Glass	2	HCL
13	Yes	1 L Glass	2	NP
13	Yes	250 ml Plastic	2	NaOH
13	Yes	40 ml - VOA	3	HCL
14	Yes	1 L Glass	2	HCL
14	Yes	1 L Glass	2	NP
14	Yes	250 ml Plastic	2	NaOH
14	Yes	40 ml - VOA	3	HCL
15	Yes	1 L Glass	2	HCL
15	Yes	1 L Glass	2	NP
15	Yes	250 ml Plastic	2	NaOH
15	Yes	40 ml - VOA	3	HCL
16	Yes	1 L Glass	2	HCL
16	Yes	1 L Glass	2	NP
16	Yes	250 ml Plastic	2	NaOH
16	Yes	40 ml - VOA	3	HCL
17	Yes	40 ml - VOA	3	HCL
18	Yes	40 ml - VOA	1	HCL

Completed By: ADDate/Time: 8/8/13 0025Reviewed By: CUDDate/Time: 8/8/13

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

Page 1 of 2

Turn Time: Standard Other: _____
If faster than 3 days, prior approval by laboratory is required # _____
State where samples were collected from:
MA (R) CT NH NJ NY ME Other _____
Is this project for any of the following: USACE Other _____
MA-MCP Navy

Reporting Limits: R10EM 6 B
Electronic Deliverable: _____
Format: Excel Access PDF Other _____

ESS LAB PROJECT ID: 1308127

Co. Name	Project #	Project Name (20 Char. or less)	Address	City	State	Zip	Telephone #	Fax #	Contact Person	Email Address	Pres Code	Number of Containers	Type of Containers	Write Required Analysis
62A	43654	TideWater	530 Broadway	Providence	RI	02909	401-447-8161		Meg Karpavicz	MegKarpavicz@tidewater.com	105	9	100L	Vials 82605 TPA 82605 PAHs 82705 Total Cyanide Dissolved Cyanide
1	8-7-13	11:416												
2		11:22												
3		13:55												
4		13:10												
5		9:39												
6		9:52												
7		14:10												
8		16:00												
9		15:35												
10		14:15												

Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: ☒ Yes ☐ No Internal Use Only: ☐ Yes ☐ No NA: ☐ [] Pickup

Seals Intact: ☐ Yes ☐ No NA: ☐ [] Technicians: ☐ []

Cooler Temp: 5.2 5.4 7.4 5.1 4.6 ice 8/7/13

Relinquished by: (Signature) [Signature] Date/Time 8/7/13 1720 Received by: (Signature) [Signature] Date/Time 8/7/13 1720

Relinquished by: (Signature) [Signature] Date/Time 8/7/13 1720 Received by: (Signature) [Signature] Date/Time 8/7/13 1720

Sampled by: Sophia Narkiewicz + Matt Bogen Email: Sophia.Narkiewicz@tidewater.com

Comments: Dissolved Cyanide are field filtered

Please fax all changes to Chain of Custody in writing.

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

1 (White) Lab Copy 2 (Yellow) Client Receipt 10/26/04 A

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

Page 2 of 2[illegible]

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A



CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (03.0043654)
ESS Laboratory Work Order Number: 1308137

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 5:40 pm, Aug 15, 2013

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: 1308137

SAMPLE RECEIPT

The following samples were received on August 08, 2013 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.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1308137-01	MW-7	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308137-02	MW-208	Ground Water	8100M, 8260B, 8270C SIM, 9014
1308137-03	TB-080813	Aqueous	8260B



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CH31238-BS1 Blank Spike recovery is below lower control limit (B-).
Dichlorodifluoromethane (67% @ 70-130%)
CH31238-BSD1 Blank Spike recovery is below lower control limit (B-).
Dichlorodifluoromethane (65% @ 70-130%)
CWH0208-CCV1 Continuing Calibration recovery is below lower control limit (C-).
1,4-Dioxane - Screen (61% @ 70-130%)

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: 1308137

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
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-7
Date Sampled: 08/08/13 09:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308137
ESS Laboratory Sample ID: 1308137-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/10/13 13:15

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	08/13/13 18:49	CWH0182	CH31006
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>108 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 08/08/13 09:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/12/13 20:47	CWH0155	CH31238
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/12/13 20:47	CWH0155	CH31238
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/12/13 20:47	CWH0155	CH31238
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/12/13 20:47	CWH0155	CH31238
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/12/13 20:47	CWH0155	CH31238
Acetone	ND (0.0100)	0.0027	8260B		1	08/12/13 20:47	CWH0155	CH31238
Benzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 08/08/13 09:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Bromoform	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/12/13 20:47	CWH0155	CH31238
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/12/13 20:47	CWH0155	CH31238
Chloroform	0.0018 (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Isopropylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Styrene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 08/08/13 09:50

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/12/13 20:47	CWH0155	CH31238
Toluene	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/12/13 20:47	CWH0155	CH31238
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Trichloroethene	J 0.0003 (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/12/13 20:47	CWH0155	CH31238
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/12/13 20:47	CWH0155	CH31238
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Xylene O	ND (0.0010)	0.0001	8260B		1	08/12/13 20:47	CWH0155	CH31238
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/12/13 20:47	CWH0155	CH31238
Xylenes (Total)	ND (0.0020)		8260B		1	08/12/13 20:47		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/12/13 20:47		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>94 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-7

Date Sampled: 08/08/13 09:50

Percent Solids: N/A

Initial Volume: 1070

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-01

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/10/13 11:20

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Acenaphthene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Acenaphthylene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Anthracene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Chrysene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Fluoranthene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Fluorene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Naphthalene	0.0004 (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Phenanthrene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002
Pyrene	ND (0.0002)		8270C SIM		1	08/14/13 0:59	CWH0173	CH31002

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	42 %		30-130
Surrogate: 2-Fluorobiphenyl	42 %		30-130
Surrogate: Nitrobenzene-d5	55 %		30-130
Surrogate: p-Terphenyl-d14	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-7
Date Sampled: 08/08/13 09:50
Percent Solids: N/A

ESS Laboratory Work Order: 1308137
ESS Laboratory Sample ID: 1308137-01
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0239 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0316 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-208
Date Sampled: 08/08/13 10:24
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1308137
ESS Laboratory Sample ID: 1308137-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: ML
Prepared: 8/10/13 13:15

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<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>
Total Petroleum Hydrocarbons	0.90 (0.20)		8100M		1	08/13/13 19:28	CWH0182	CH31006
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
Surrogate: O-Terphenyl		83 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-208

Date Sampled: 08/08/13 10:24

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/15/13 12:38	CWH0208	CH31533
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/15/13 12:38	CWH0208	CH31533
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/15/13 12:38	CWH0208	CH31533
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/15/13 12:38	CWH0208	CH31533
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
4-Isopropyltoluene	J 0.0009 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/15/13 12:38	CWH0208	CH31533
Acetone	ND (0.0100)	0.0027	8260B		1	08/15/13 12:38	CWH0208	CH31533
Benzene	J 0.0006 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-208

Date Sampled: 08/08/13 10:24

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Bromoform	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/15/13 12:38	CWH0208	CH31533
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/15/13 12:38	CWH0208	CH31533
Chloroform	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Ethylbenzene	0.0096 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Isopropylbenzene	0.0027 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Naphthalene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
n-Butylbenzene	0.0132 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
n-Propylbenzene	0.0012 (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
sec-Butylbenzene	0.0066 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Styrene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: MW-208

Date Sampled: 08/08/13 10:24

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/15/13 12:38	CWH0208	CH31533
Toluene	J 0.0004 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/15/13 12:38	CWH0208	CH31533
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/15/13 12:38	CWH0208	CH31533
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/15/13 12:38	CWH0208	CH31533
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Xylene O	0.0044 (0.0010)	0.0001	8260B		1	08/15/13 12:38	CWH0208	CH31533
Xylene P,M	J 0.0009 (0.0020)	0.0002	8260B		1	08/15/13 12:38	CWH0208	CH31533
Xylenes (Total)	0.0053 (0.0020)		8260B		1	08/15/13 12:38		[CALC]
Trihalomethanes (Total)	ND (0.0036)		8260B			08/15/13 12:38		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichloroethane-d4	89 %		70-130
Surrogate: 4-Bromofluorobenzene	104 %		70-130
Surrogate: Dibromofluoromethane	91 %		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-208

Date Sampled: 08/08/13 10:24

Percent Solids: N/A

Initial Volume: 1040

Final Volume: 0.25

Extraction Method: 3510C

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-02

Sample Matrix: Ground Water

Units: mg/L

Analyst: IBM

Prepared: 8/10/13 11:20

All methods used are in accordance with 40 CFR 136.

8270C(SIM) Polynuclear Aromatic Hydrocarbons

<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>
2-Methylnaphthalene	ND (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Acenaphthene	0.0023 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Acenaphthylene	0.0020 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Anthracene	0.0005 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Benzo(a)anthracene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Benzo(a)pyrene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Benzo(b)fluoranthene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Benzo(g,h,i)perylene	ND (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Benzo(k)fluoranthene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Chrysene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Dibenzo(a,h)Anthracene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Fluoranthene	0.0002 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Fluorene	0.0015 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Naphthalene	0.0013 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Phenanthrene	0.0020 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002
Pyrene	0.0003 (0.0002)		8270C SIM		1	08/14/13 1:49	CWH0173	CH31002

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
Surrogate: 1,2-Dichlorobenzene-d4	32 %		30-130
Surrogate: 2-Fluorobiphenyl	37 %		30-130
Surrogate: Nitrobenzene-d5	38 %		30-130
Surrogate: p-Terphenyl-d14	55 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: MW-208
Date Sampled: 08/08/13 10:24
Percent Solids: N/A

ESS Laboratory Work Order: 1308137
ESS Laboratory Sample ID: 1308137-02
Sample Matrix: Ground Water

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Dissolved Cyanide	0.0237 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308
Total Cyanide (LL)	0.0302 (0.0050)		9014		1	JLK	08/13/13 9:26	mg/L	CH31308



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TB-080813

Date Sampled: 08/08/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-03

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,1,1-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,1,2,2-Tetrachloroethane	ND (0.0005)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,1,2-Trichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,1-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,1-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,1-Dichloropropene	ND (0.0020)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2,3-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2,3-Trichloropropane	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2,4-Trichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2,4-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2-Dibromo-3-Chloropropane	ND (0.0050)	0.0010	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2-Dibromoethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2-Dichloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,2-Dichloropropane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,3,5-Trimethylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,3-Dichlorobenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,3-Dichloropropane	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,4-Dichlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
1,4-Dioxane - Screen	ND (0.500)	0.190	8260B		1	08/12/13 19:04	CWH0155	CH31238
1-Chlorohexane	ND (0.0010)	0.0004	8260B		1	08/12/13 19:04	CWH0155	CH31238
2,2-Dichloropropane	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
2-Butanone	ND (0.0100)	0.0034	8260B		1	08/12/13 19:04	CWH0155	CH31238
2-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
2-Hexanone	ND (0.0100)	0.0015	8260B		1	08/12/13 19:04	CWH0155	CH31238
4-Chlorotoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
4-Isopropyltoluene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
4-Methyl-2-Pentanone	ND (0.0250)	0.0016	8260B		1	08/12/13 19:04	CWH0155	CH31238
Acetone	ND (0.0100)	0.0027	8260B		1	08/12/13 19:04	CWH0155	CH31238
Benzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TB-080813

Date Sampled: 08/08/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-03

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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>
Bromobenzene	ND (0.0020)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Bromochloromethane	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
Bromodichloromethane	ND (0.0006)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Bromoform	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Bromomethane	ND (0.0020)	0.0004	8260B		1	08/12/13 19:04	CWH0155	CH31238
Carbon Disulfide	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Carbon Tetrachloride	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Chlorobenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Chloroethane	ND (0.0020)	0.0004	8260B		1	08/12/13 19:04	CWH0155	CH31238
Chloroform	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Chloromethane	ND (0.0020)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
cis-1,2-Dichloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
cis-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Dibromochloromethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Dibromomethane	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
Dichlorodifluoromethane	ND (0.0020)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
Diethyl Ether	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
Di-isopropyl ether	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Ethyl tertiary-butyl ether	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Ethylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Hexachlorobutadiene	ND (0.0006)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Hexachloroethane	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Isopropylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Methyl tert-Butyl Ether	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
Methylene Chloride	ND (0.0020)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Naphthalene	J 0.0006 (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
n-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
n-Propylbenzene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
sec-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Styrene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
tert-Butylbenzene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

Client Sample ID: TB-080813

Date Sampled: 08/08/13 00:00

Percent Solids: N/A

Initial Volume: 5

Final Volume: 5

Extraction Method: 5030B

ESS Laboratory Work Order: 1308137

ESS Laboratory Sample ID: 1308137-03

Sample Matrix: Aqueous

Units: mg/L

Analyst: MJM

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>
Tertiary-amyl methyl ether	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Tetrachloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Tetrahydrofuran	ND (0.0050)	0.0016	8260B		1	08/12/13 19:04	CWH0155	CH31238
Toluene	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
trans-1,2-Dichloroethene	ND (0.0010)	0.0003	8260B		1	08/12/13 19:04	CWH0155	CH31238
trans-1,3-Dichloropropene	ND (0.0004)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Trichloroethene	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Trichlorofluoromethane	ND (0.0010)	0.0004	8260B		1	08/12/13 19:04	CWH0155	CH31238
Vinyl Acetate	ND (0.0050)	0.0005	8260B		1	08/12/13 19:04	CWH0155	CH31238
Vinyl Chloride	ND (0.0010)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238
Xylene O	ND (0.0010)	0.0001	8260B		1	08/12/13 19:04	CWH0155	CH31238
Xylene P,M	ND (0.0020)	0.0002	8260B		1	08/12/13 19:04	CWH0155	CH31238

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>95 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CH31006 - 3510C

Blank

Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							

<i>Surrogate: O-Terphenyl</i>	<i>0.104</i>		mg/L	<i>0.1000</i>		<i>104</i>	<i>40-140</i>			

LCS

Decane (C10)	0.039	0.005	mg/L	0.05000		77	40-140			
Docosane (C22)	0.046	0.005	mg/L	0.05000		93	40-140			
Dodecane (C12)	0.042	0.005	mg/L	0.05000		83	40-140			
Eicosane (C20)	0.046	0.005	mg/L	0.05000		91	40-140			
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		92	40-140			
Hexadecane (C16)	0.045	0.005	mg/L	0.05000		89	40-140			
Nonadecane (C19)	0.046	0.005	mg/L	0.05000		93	40-140			
Nonane (C9)	0.031	0.005	mg/L	0.05000		63	30-140			
Octacosane (C28)	0.046	0.005	mg/L	0.05000		93	40-140			
Octadecane (C18)	0.045	0.005	mg/L	0.05000		91	40-140			
Tetracosane (C24)	0.047	0.005	mg/L	0.05000		94	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140			
Total Petroleum Hydrocarbons	0.606	0.20	mg/L	0.7000		87	40-140			
Triacontane (C30)	0.046	0.005	mg/L	0.05000		92	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>0.0900</i>		mg/L	<i>0.1000</i>		<i>90</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	0.035	0.005	mg/L	0.05000		70	40-140	10	25	
Docosane (C22)	0.042	0.005	mg/L	0.05000		85	40-140	9	25	
Dodecane (C12)	0.038	0.005	mg/L	0.05000		76	40-140	9	25	
Eicosane (C20)	0.042	0.005	mg/L	0.05000		83	40-140	9	25	
Hexacosane (C26)	0.042	0.005	mg/L	0.05000		85	40-140	8	25	
Hexadecane (C16)	0.041	0.005	mg/L	0.05000		81	40-140	9	25	
Nonadecane (C19)	0.042	0.005	mg/L	0.05000		84	40-140	10	25	
Nonane (C9)	0.028	0.005	mg/L	0.05000		57	30-140	10	25	
Octacosane (C28)	0.043	0.005	mg/L	0.05000		85	40-140	8	25	
Octadecane (C18)	0.042	0.005	mg/L	0.05000		83	40-140	9	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8100M Total Petroleum Hydrocarbons

Batch CH31006 - 3510C

Tetracosane (C24)	0.043	0.005	mg/L	0.05000		86	40-140	9	25	
Tetradecane (C14)	0.040	0.005	mg/L	0.05000		79	40-140	9	25	
Total Petroleum Hydrocarbons	0.555	0.20	mg/L	0.7000		79	40-140	9	25	
Triacotane (C30)	0.042	0.005	mg/L	0.05000		84	40-140	8	25	

Surrogate: O-Terphenyl 0.0806 mg/L 0.1000 81 40-140

8260B Volatile Organic Compounds

Batch CH31238 - 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

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							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0218		mg/L	0.02500		87	70-130			
Surrogate: 4-Bromofluorobenzene	0.0204		mg/L	0.02500		82	70-130			
Surrogate: Dibromofluoromethane	0.0235		mg/L	0.02500		94	70-130			
Surrogate: Toluene-d8	0.0241		mg/L	0.02500		96	70-130			

LCS

1,1,1,2-Tetrachloroethane	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: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

1,1,1-Trichloroethane	9.40		ug/L	10.00		94	70-130			
1,1,2,2-Tetrachloroethane	11.1		ug/L	10.00		111	70-130			
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1-Dichloroethane	9.65		ug/L	10.00		96	70-130			
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130			
1,1-Dichloropropene	10.8		ug/L	10.00		108	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	11.2		ug/L	10.00		112	70-130			
1,2-Dibromo-3-Chloropropane	10.8		ug/L	10.00		108	70-130			
1,2-Dibromoethane	10.7		ug/L	10.00		107	70-130			
1,2-Dichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,2-Dichloroethane	8.98		ug/L	10.00		90	70-130			
1,2-Dichloropropane	9.81		ug/L	10.00		98	70-130			
1,3,5-Trimethylbenzene	11.7		ug/L	10.00		117	70-130			
1,3-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,3-Dichloropropane	10.8		ug/L	10.00		108	70-130			
1,4-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,4-Dioxane - Screen	197		ug/L	200.0		99	0-332			
1-Chlorohexane	10.8		ug/L	10.00		108	70-130			
2,2-Dichloropropane	9.03		ug/L	10.00		90	70-130			
2-Butanone	50.2		ug/L	50.00		100	70-130			
2-Chlorotoluene	11.4		ug/L	10.00		114	70-130			
2-Hexanone	57.6		ug/L	50.00		115	70-130			
4-Chlorotoluene	11.2		ug/L	10.00		112	70-130			
4-Isopropyltoluene	11.0		ug/L	10.00		110	70-130			
4-Methyl-2-Pentanone	51.0		ug/L	50.00		102	70-130			
Acetone	48.7		ug/L	50.00		97	70-130			
Benzene	10.5		ug/L	10.00		105	70-130			
Bromobenzene	11.3		ug/L	10.00		113	70-130			
Bromochloromethane	10.1		ug/L	10.00		101	70-130			
Bromodichloromethane	8.76		ug/L	10.00		88	70-130			
Bromoform	10.0		ug/L	10.00		100	70-130			
Bromomethane	8.23		ug/L	10.00		82	70-130			
Carbon Disulfide	10.1		ug/L	10.00		101	70-130			
Carbon Tetrachloride	8.93		ug/L	10.00		89	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	9.68		ug/L	10.00		97	70-130			
Chloroform	9.21		ug/L	10.00		92	70-130			
Chloromethane	8.88		ug/L	10.00		89	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	9.55		ug/L	10.00		96	70-130			
Dibromochloromethane	9.47		ug/L	10.00		95	70-130			
Dibromomethane	9.86		ug/L	10.00		99	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

Dichlorodifluoromethane	6.66		ug/L	10.00		67	70-130			B-
Diethyl Ether	10.3		ug/L	10.00		103	70-130			
Di-isopropyl ether	9.92		ug/L	10.00		99	70-130			
Ethyl tertiary-butyl ether	9.82		ug/L	10.00		98	70-130			
Ethylbenzene	11.2		ug/L	10.00		112	70-130			
Hexachlorobutadiene	8.69		ug/L	10.00		87	70-130			
Hexachloroethane	9.78		ug/L	10.00		98	70-130			
Isopropylbenzene	11.7		ug/L	10.00		117	70-130			
Methyl tert-Butyl Ether	9.76		ug/L	10.00		98	70-130			
Methylene Chloride	10.5		ug/L	10.00		105	70-130			
Naphthalene	10.9		ug/L	10.00		109	70-130			
n-Butylbenzene	10.8		ug/L	10.00		108	70-130			
n-Propylbenzene	11.4		ug/L	10.00		114	70-130			
sec-Butylbenzene	11.5		ug/L	10.00		115	70-130			
Styrene	10.2		ug/L	10.00		102	70-130			
tert-Butylbenzene	11.6		ug/L	10.00		116	70-130			
Tertiary-amyl methyl ether	9.45		ug/L	10.00		94	70-130			
Tetrachloroethene	9.94		ug/L	10.00		99	70-130			
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130			
Toluene	10.6		ug/L	10.00		106	70-130			
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
trans-1,3-Dichloropropene	8.18		ug/L	10.00		82	70-130			
Trichloroethene	9.83		ug/L	10.00		98	70-130			
Trichlorofluoromethane	8.40		ug/L	10.00		84	70-130			
Vinyl Acetate	9.53		ug/L	10.00		95	70-130			
Vinyl Chloride	10.5		ug/L	10.00		105	70-130			
Xylene O	11.4		ug/L	10.00		114	70-130			
Xylene P,M	23.0		ug/L	20.00		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0196		mg/L	0.02500		78	70-130			
Surrogate: 4-Bromofluorobenzene	0.0213		mg/L	0.02500		85	70-130			
Surrogate: Dibromofluoromethane	0.0231		mg/L	0.02500		92	70-130			
Surrogate: Toluene-d8	0.0255		mg/L	0.02500		102	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	9.41		ug/L	10.00		94	70-130	7	25	
1,1,1-Trichloroethane	9.11		ug/L	10.00		91	70-130	3	25	
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130	5	25	
1,1,2-Trichloroethane	9.67		ug/L	10.00		97	70-130	5	25	
1,1-Dichloroethane	9.38		ug/L	10.00		94	70-130	3	25	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	1	25	
1,1-Dichloropropene	10.6		ug/L	10.00		106	70-130	2	25	
1,2,3-Trichlorobenzene	10.1		ug/L	10.00		101	70-130	3	25	
1,2,3-Trichloropropane	9.78		ug/L	10.00		98	70-130	3	25	
1,2,4-Trichlorobenzene	10.1		ug/L	10.00		101	70-130	2	25	
1,2,4-Trimethylbenzene	11.1		ug/L	10.00		111	70-130	0.8	25	
1,2-Dibromo-3-Chloropropane	10.3		ug/L	10.00		103	70-130	5	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

1,2-Dibromoethane	9.85		ug/L	10.00		98	70-130	8	25	
1,2-Dichlorobenzene	10.5		ug/L	10.00		105	70-130	2	25	
1,2-Dichloroethane	8.81		ug/L	10.00		88	70-130	2	25	
1,2-Dichloropropane	9.46		ug/L	10.00		95	70-130	4	25	
1,3,5-Trimethylbenzene	11.5		ug/L	10.00		115	70-130	2	25	
1,3-Dichlorobenzene	10.8		ug/L	10.00		108	70-130	0.9	25	
1,3-Dichloropropane	10.3		ug/L	10.00		103	70-130	5	25	
1,4-Dichlorobenzene	9.80		ug/L	10.00		98	70-130	6	25	
1,4-Dioxane - Screen	188		ug/L	200.0		94	0-332	5	200	
1-Chlorohexane	10.3		ug/L	10.00		103	70-130	4	25	
2,2-Dichloropropane	8.72		ug/L	10.00		87	70-130	3	25	
2-Butanone	46.3		ug/L	50.00		93	70-130	8	25	
2-Chlorotoluene	11.2		ug/L	10.00		112	70-130	2	25	
2-Hexanone	51.6		ug/L	50.00		103	70-130	11	25	
4-Chlorotoluene	11.0		ug/L	10.00		110	70-130	1	25	
4-Isopropyltoluene	10.8		ug/L	10.00		108	70-130	2	25	
4-Methyl-2-Pentanone	48.7		ug/L	50.00		97	70-130	5	25	
Acetone	44.3		ug/L	50.00		89	70-130	9	25	
Benzene	10.4		ug/L	10.00		104	70-130	2	25	
Bromobenzene	10.7		ug/L	10.00		107	70-130	5	25	
Bromochloromethane	9.76		ug/L	10.00		98	70-130	4	25	
Bromodichloromethane	8.68		ug/L	10.00		87	70-130	0.9	25	
Bromoform	9.35		ug/L	10.00		94	70-130	7	25	
Bromomethane	8.05		ug/L	10.00		80	70-130	2	25	
Carbon Disulfide	9.70		ug/L	10.00		97	70-130	4	25	
Carbon Tetrachloride	8.71		ug/L	10.00		87	70-130	2	25	
Chlorobenzene	9.56		ug/L	10.00		96	70-130	6	25	
Chloroethane	9.30		ug/L	10.00		93	70-130	4	25	
Chloroform	8.91		ug/L	10.00		89	70-130	3	25	
Chloromethane	8.77		ug/L	10.00		88	70-130	1	25	
cis-1,2-Dichloroethene	9.78		ug/L	10.00		98	70-130	3	25	
cis-1,3-Dichloropropene	9.23		ug/L	10.00		92	70-130	3	25	
Dibromochloromethane	9.06		ug/L	10.00		91	70-130	4	25	
Dibromomethane	9.52		ug/L	10.00		95	70-130	4	25	
Dichlorodifluoromethane	6.50		ug/L	10.00		65	70-130	2	25	
Diethyl Ether	10.2		ug/L	10.00		102	70-130	1	25	
Di-isopropyl ether	9.78		ug/L	10.00		98	70-130	1	25	
Ethyl tertiary-butyl ether	9.52		ug/L	10.00		95	70-130	3	25	
Ethylbenzene	10.6		ug/L	10.00		106	70-130	5	25	
Hexachlorobutadiene	8.59		ug/L	10.00		86	70-130	1	25	
Hexachloroethane	9.64		ug/L	10.00		96	70-130	1	25	
Isopropylbenzene	11.3		ug/L	10.00		113	70-130	3	25	
Methyl tert-Butyl Ether	9.41		ug/L	10.00		94	70-130	4	25	
Methylene Chloride	10.5		ug/L	10.00		105	70-130	0.1	25	
Naphthalene	10.4		ug/L	10.00		104	70-130	5	25	

B-



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31238 - 5030B

n-Butylbenzene	10.7		ug/L	10.00		107	70-130	2	25	
n-Propylbenzene	11.1		ug/L	10.00		111	70-130	2	25	
sec-Butylbenzene	11.3		ug/L	10.00		113	70-130	2	25	
Styrene	9.85		ug/L	10.00		98	70-130	4	25	
tert-Butylbenzene	11.2		ug/L	10.00		112	70-130	3	25	
Tertiary-amyl methyl ether	9.24		ug/L	10.00		92	70-130	2	25	
Tetrachloroethene	9.56		ug/L	10.00		96	70-130	4	25	
Tetrahydrofuran	9.39		ug/L	10.00		94	70-130	9	25	
Toluene	10.4		ug/L	10.00		104	70-130	2	25	
trans-1,2-Dichloroethene	9.68		ug/L	10.00		97	70-130	4	25	
trans-1,3-Dichloropropene	7.92		ug/L	10.00		79	70-130	3	25	
Trichloroethene	9.55		ug/L	10.00		96	70-130	3	25	
Trichlorofluoromethane	8.32		ug/L	10.00		83	70-130	1	25	
Vinyl Acetate	9.34		ug/L	10.00		93	70-130	2	25	
Vinyl Chloride	10.2		ug/L	10.00		102	70-130	3	25	
Xylene O	10.7		ug/L	10.00		107	70-130	6	25	
Xylene P,M	21.7		ug/L	20.00		108	70-130	6	25	
Surrogate: 1,2-Dichloroethane-d4	0.0196		mg/L	0.02500		78	70-130			
Surrogate: 4-Bromofluorobenzene	0.0211		mg/L	0.02500		84	70-130			
Surrogate: Dibromofluoromethane	0.0230		mg/L	0.02500		92	70-130			
Surrogate: Toluene-d8	0.0247		mg/L	0.02500		99	70-130			

Batch CH31533 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31533 - 5030B

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
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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31533 - 5030B

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							
Surrogate: 1,2-Dichloroethane-d4	0.0226		mg/L	0.02500		90	70-130			
Surrogate: 4-Bromofluorobenzene	0.0240		mg/L	0.02500		96	70-130			
Surrogate: Dibromofluoromethane	0.0227		mg/L	0.02500		91	70-130			
Surrogate: Toluene-d8	0.0247		mg/L	0.02500		99	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.45		ug/L	10.00		94	70-130			
1,1,1-Trichloroethane	9.96		ug/L	10.00		100	70-130			
1,1,2,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2-Trichloroethane	9.64		ug/L	10.00		96	70-130			
1,1-Dichloroethane	8.98		ug/L	10.00		90	70-130			
1,1-Dichloroethene	9.74		ug/L	10.00		97	70-130			
1,1-Dichloropropene	9.91		ug/L	10.00		99	70-130			
1,2,3-Trichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,2,3-Trichloropropane	11.1		ug/L	10.00		111	70-130			
1,2,4-Trichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,2,4-Trimethylbenzene	9.63		ug/L	10.00		96	70-130			
1,2-Dibromo-3-Chloropropane	8.92		ug/L	10.00		89	70-130			
1,2-Dibromoethane	9.86		ug/L	10.00		99	70-130			
1,2-Dichlorobenzene	10.6		ug/L	10.00		106	70-130			
1,2-Dichloroethane	9.20		ug/L	10.00		92	70-130			
1,2-Dichloropropane	8.71		ug/L	10.00		87	70-130			
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,3-Dichlorobenzene	10.6		ug/L	10.00		106	70-130			
1,3-Dichloropropane	9.74		ug/L	10.00		97	70-130			
1,4-Dichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,4-Dioxane - Screen	194		ug/L	200.0		97	0-332			
1-Chlorohexane	9.17		ug/L	10.00		92	70-130			
2,2-Dichloropropane	9.14		ug/L	10.00		91	70-130			
2-Butanone	50.3		ug/L	50.00		101	70-130			
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130			
2-Hexanone	50.5		ug/L	50.00		101	70-130			
4-Chlorotoluene	9.47		ug/L	10.00		95	70-130			
4-Isopropyltoluene	9.66		ug/L	10.00		97	70-130			
4-Methyl-2-Pentanone	46.7		ug/L	50.00		93	70-130			
Acetone	53.6		ug/L	50.00		107	70-130			
Benzene	10.0		ug/L	10.00		100	70-130			
Bromobenzene	10.4		ug/L	10.00		104	70-130			
Bromochloromethane	10.6		ug/L	10.00		106	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31533 - 5030B

Bromodichloromethane	8.82		ug/L	10.00		88	70-130			
Bromoform	8.93		ug/L	10.00		89	70-130			
Bromomethane	8.29		ug/L	10.00		83	70-130			
Carbon Disulfide	9.81		ug/L	10.00		98	70-130			
Carbon Tetrachloride	9.99		ug/L	10.00		100	70-130			
Chlorobenzene	10.5		ug/L	10.00		105	70-130			
Chloroethane	8.04		ug/L	10.00		80	70-130			
Chloroform	9.79		ug/L	10.00		98	70-130			
Chloromethane	8.00		ug/L	10.00		80	70-130			
cis-1,2-Dichloroethene	9.82		ug/L	10.00		98	70-130			
cis-1,3-Dichloropropene	8.71		ug/L	10.00		87	70-130			
Dibromochloromethane	8.75		ug/L	10.00		88	70-130			
Dibromomethane	9.81		ug/L	10.00		98	70-130			
Dichlorodifluoromethane	7.56		ug/L	10.00		76	70-130			
Diethyl Ether	8.78		ug/L	10.00		88	70-130			
Di-isopropyl ether	8.24		ug/L	10.00		82	70-130			
Ethyl tertiary-butyl ether	8.23		ug/L	10.00		82	70-130			
Ethylbenzene	9.90		ug/L	10.00		99	70-130			
Hexachlorobutadiene	9.93		ug/L	10.00		99	70-130			
Hexachloroethane	9.18		ug/L	10.00		92	70-130			
Isopropylbenzene	9.89		ug/L	10.00		99	70-130			
Methyl tert-Butyl Ether	8.73		ug/L	10.00		87	70-130			
Methylene Chloride	9.81		ug/L	10.00		98	70-130			
Naphthalene	9.29		ug/L	10.00		93	70-130			
n-Butylbenzene	9.12		ug/L	10.00		91	70-130			
n-Propylbenzene	9.83		ug/L	10.00		98	70-130			
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Styrene	9.71		ug/L	10.00		97	70-130			
tert-Butylbenzene	9.98		ug/L	10.00		100	70-130			
Tertiary-amyl methyl ether	8.31		ug/L	10.00		83	70-130			
Tetrachloroethene	10.0		ug/L	10.00		100	70-130			
Tetrahydrofuran	8.52		ug/L	10.00		85	70-130			
Toluene	10.2		ug/L	10.00		102	70-130			
trans-1,2-Dichloroethene	9.88		ug/L	10.00		99	70-130			
trans-1,3-Dichloropropene	7.31		ug/L	10.00		73	70-130			
Trichloroethene	9.51		ug/L	10.00		95	70-130			
Trichlorofluoromethane	9.81		ug/L	10.00		98	70-130			
Vinyl Acetate	8.88		ug/L	10.00		89	70-130			
Vinyl Chloride	10.3		ug/L	10.00		103	70-130			
Xylene O	10.4		ug/L	10.00		104	70-130			
Xylene P,M	21.0		ug/L	20.00		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0237		mg/L	0.02500		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0248		mg/L	0.02500		99	70-130			
Surrogate: Dibromofluoromethane	0.0250		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0248		mg/L	0.02500		99	70-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31533 - 5030B

LCS Dup

1,1,1,2-Tetrachloroethane	9.24		ug/L	10.00		92	70-130	2	25	
1,1,1-Trichloroethane	9.55		ug/L	10.00		96	70-130	4	25	
1,1,2,2-Tetrachloroethane	9.87		ug/L	10.00		99	70-130	6	25	
1,1,2-Trichloroethane	9.58		ug/L	10.00		96	70-130	0.6	25	
1,1-Dichloroethane	8.89		ug/L	10.00		89	70-130	1	25	
1,1-Dichloroethene	9.83		ug/L	10.00		98	70-130	0.9	25	
1,1-Dichloropropene	9.73		ug/L	10.00		97	70-130	2	25	
1,2,3-Trichlorobenzene	9.57		ug/L	10.00		96	70-130	13	25	
1,2,3-Trichloropropane	10.2		ug/L	10.00		102	70-130	8	25	
1,2,4-Trichlorobenzene	9.32		ug/L	10.00		93	70-130	8	25	
1,2,4-Trimethylbenzene	9.41		ug/L	10.00		94	70-130	2	25	
1,2-Dibromo-3-Chloropropane	8.27		ug/L	10.00		83	70-130	8	25	
1,2-Dibromoethane	9.67		ug/L	10.00		97	70-130	2	25	
1,2-Dichlorobenzene	10.6		ug/L	10.00		106	70-130	0.6	25	
1,2-Dichloroethane	8.85		ug/L	10.00		88	70-130	4	25	
1,2-Dichloropropane	8.81		ug/L	10.00		88	70-130	1	25	
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130	0.1	25	
1,3-Dichlorobenzene	10.5		ug/L	10.00		105	70-130	0.7	25	
1,3-Dichloropropane	9.57		ug/L	10.00		96	70-130	2	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	3	25	
1,4-Dioxane - Screen	147		ug/L	200.0		74	0-332	28	200	
1-Chlorohexane	9.05		ug/L	10.00		90	70-130	1	25	
2,2-Dichloropropane	8.82		ug/L	10.00		88	70-130	4	25	
2-Butanone	49.7		ug/L	50.00		99	70-130	1	25	
2-Chlorotoluene	9.95		ug/L	10.00		100	70-130	1	25	
2-Hexanone	48.0		ug/L	50.00		96	70-130	5	25	
4-Chlorotoluene	9.64		ug/L	10.00		96	70-130	2	25	
4-Isopropyltoluene	9.57		ug/L	10.00		96	70-130	0.9	25	
4-Methyl-2-Pentanone	46.2		ug/L	50.00		92	70-130	1	25	
Acetone	50.7		ug/L	50.00		101	70-130	6	25	
Benzene	9.97		ug/L	10.00		100	70-130	0.5	25	
Bromobenzene	10.2		ug/L	10.00		102	70-130	2	25	
Bromochloromethane	10.3		ug/L	10.00		103	70-130	3	25	
Bromodichloromethane	8.85		ug/L	10.00		88	70-130	0.3	25	
Bromoform	9.01		ug/L	10.00		90	70-130	0.9	25	
Bromomethane	7.72		ug/L	10.00		77	70-130	7	25	
Carbon Disulfide	9.74		ug/L	10.00		97	70-130	0.7	25	
Carbon Tetrachloride	9.91		ug/L	10.00		99	70-130	0.8	25	
Chlorobenzene	10.3		ug/L	10.00		103	70-130	1	25	
Chloroethane	8.40		ug/L	10.00		84	70-130	4	25	
Chloroform	9.62		ug/L	10.00		96	70-130	2	25	
Chloromethane	7.40		ug/L	10.00		74	70-130	8	25	
cis-1,2-Dichloroethene	9.86		ug/L	10.00		99	70-130	0.4	25	
cis-1,3-Dichloropropene	8.71		ug/L	10.00		87	70-130	0	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8260B Volatile Organic Compounds

Batch CH31533 - 5030B

Dibromochloromethane	8.53		ug/L	10.00		85	70-130	3	25	
Dibromomethane	9.51		ug/L	10.00		95	70-130	3	25	
Dichlorodifluoromethane	7.32		ug/L	10.00		73	70-130	3	25	
Diethyl Ether	8.60		ug/L	10.00		86	70-130	2	25	
Di-isopropyl ether	8.22		ug/L	10.00		82	70-130	0.2	25	
Ethyl tertiary-butyl ether	8.25		ug/L	10.00		82	70-130	0.2	25	
Ethylbenzene	9.88		ug/L	10.00		99	70-130	0.2	25	
Hexachlorobutadiene	9.37		ug/L	10.00		94	70-130	6	25	
Hexachloroethane	8.96		ug/L	10.00		90	70-130	2	25	
Isopropylbenzene	9.95		ug/L	10.00		100	70-130	0.6	25	
Methyl tert-Butyl Ether	8.73		ug/L	10.00		87	70-130	0	25	
Methylene Chloride	10.0		ug/L	10.00		100	70-130	2	25	
Naphthalene	7.99		ug/L	10.00		80	70-130	15	25	
n-Butylbenzene	8.85		ug/L	10.00		88	70-130	3	25	
n-Propylbenzene	9.66		ug/L	10.00		97	70-130	2	25	
sec-Butylbenzene	9.94		ug/L	10.00		99	70-130	1	25	
Styrene	9.62		ug/L	10.00		96	70-130	0.9	25	
tert-Butylbenzene	9.95		ug/L	10.00		100	70-130	0.3	25	
Tertiary-amyl methyl ether	8.16		ug/L	10.00		82	70-130	2	25	
Tetrachloroethene	10.3		ug/L	10.00		103	70-130	3	25	
Tetrahydrofuran	7.99		ug/L	10.00		80	70-130	6	25	
Toluene	10.2		ug/L	10.00		102	70-130	0.8	25	
trans-1,2-Dichloroethene	9.61		ug/L	10.00		96	70-130	3	25	
trans-1,3-Dichloropropene	7.42		ug/L	10.00		74	70-130	1	25	
Trichloroethene	9.58		ug/L	10.00		96	70-130	0.7	25	
Trichlorofluoromethane	9.91		ug/L	10.00		99	70-130	1	25	
Vinyl Acetate	8.08		ug/L	10.00		81	70-130	9	25	
Vinyl Chloride	10.1		ug/L	10.00		101	70-130	1	25	
Xylene O	10.4		ug/L	10.00		104	70-130	0.6	25	
Xylene P,M	20.4		ug/L	20.00		102	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	0.0231		mg/L	0.02500		92	70-130			
Surrogate: 4-Bromofluorobenzene	0.0246		mg/L	0.02500		98	70-130			
Surrogate: Dibromofluoromethane	0.0247		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0248		mg/L	0.02500		99	70-130			

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH31002 - 3510C

Blank

2-Methylnaphthalene	ND	0.0002	mg/L
Acenaphthene	ND	0.0002	mg/L
Acenaphthylene	ND	0.0002	mg/L
Anthracene	ND	0.0002	mg/L
Benzo(a)anthracene	ND	0.00005	mg/L
Benzo(a)pyrene	ND	0.00005	mg/L
Benzo(b)fluoranthene	ND	0.00005	mg/L



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH31002 - 3510C

Benzo(g,h,i)perylene	ND	0.0002	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.0002	mg/L							
Fluorene	ND	0.0002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.0002	mg/L							
Phenanthrene	ND	0.0002	mg/L							
Pyrene	ND	0.0002	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	0.00134		mg/L	0.002500		54	30-130			
Surrogate: 2-Fluorobiphenyl	0.00145		mg/L	0.002500		58	30-130			
Surrogate: Nitrobenzene-d5	0.00180		mg/L	0.002500		72	30-130			
Surrogate: p-Terphenyl-d14	0.00204		mg/L	0.002500		82	30-130			

LCS

2-Methylnaphthalene	0.0027	0.0002	mg/L	0.004000		67	40-140			
Acenaphthene	0.0026	0.0002	mg/L	0.004000		64	40-140			
Acenaphthylene	0.0023	0.0002	mg/L	0.004000		57	40-140			
Anthracene	0.0028	0.0002	mg/L	0.004000		70	40-140			
Benzo(a)anthracene	0.0028	0.00005	mg/L	0.004000		71	40-140			
Benzo(a)pyrene	0.0026	0.00005	mg/L	0.004000		64	40-140			
Benzo(b)fluoranthene	0.0026	0.00005	mg/L	0.004000		65	40-140			
Benzo(g,h,i)perylene	0.0029	0.0002	mg/L	0.004000		72	40-140			
Benzo(k)fluoranthene	0.0027	0.00005	mg/L	0.004000		67	40-140			
Chrysene	0.0028	0.00005	mg/L	0.004000		69	40-140			
Dibenzo(a,h)Anthracene	0.0032	0.00005	mg/L	0.004000		81	40-140			
Fluoranthene	0.0025	0.0002	mg/L	0.004000		64	40-140			
Fluorene	0.0026	0.0002	mg/L	0.004000		66	40-140			
Indeno(1,2,3-cd)Pyrene	0.0031	0.00005	mg/L	0.004000		78	40-140			
Naphthalene	0.0024	0.0002	mg/L	0.004000		61	40-140			
Phenanthrene	0.0027	0.0002	mg/L	0.004000		69	40-140			
Pyrene	0.0028	0.0002	mg/L	0.004000		70	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	0.00163		mg/L	0.002500		65	30-130			
Surrogate: 2-Fluorobiphenyl	0.00173		mg/L	0.002500		69	30-130			
Surrogate: Nitrobenzene-d5	0.00208		mg/L	0.002500		83	30-130			
Surrogate: p-Terphenyl-d14	0.00244		mg/L	0.002500		98	30-130			

LCS Dup

2-Methylnaphthalene	0.0029	0.0002	mg/L	0.004000		73	40-140	9	20	
Acenaphthene	0.0028	0.0002	mg/L	0.004000		69	40-140	8	20	
Acenaphthylene	0.0025	0.0002	mg/L	0.004000		64	40-140	11	20	
Anthracene	0.0030	0.0002	mg/L	0.004000		76	40-140	8	20	
Benzo(a)anthracene	0.0031	0.00005	mg/L	0.004000		78	40-140	11	20	
Benzo(a)pyrene	0.0029	0.00005	mg/L	0.004000		74	40-140	14	20	
Benzo(b)fluoranthene	0.0029	0.00005	mg/L	0.004000		72	40-140	11	20	
Benzo(g,h,i)perylene	0.0033	0.0002	mg/L	0.004000		83	40-140	14	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Batch CH31002 - 3510C

Benzo(k)fluoranthene	0.0030	0.00005	mg/L	0.004000		76	40-140	13	20	
Chrysene	0.0031	0.00005	mg/L	0.004000		78	40-140	12	20	
Dibenzo(a,h)Anthracene	0.0036	0.00005	mg/L	0.004000		91	40-140	12	20	
Fluoranthene	0.0028	0.0002	mg/L	0.004000		70	40-140	10	20	
Fluorene	0.0030	0.0002	mg/L	0.004000		74	40-140	12	20	
Indeno(1,2,3-cd)Pyrene	0.0035	0.00005	mg/L	0.004000		87	40-140	11	20	
Naphthalene	0.0027	0.0002	mg/L	0.004000		68	40-140	11	20	
Phenanthrene	0.0031	0.0002	mg/L	0.004000		76	40-140	11	20	
Pyrene	0.0032	0.0002	mg/L	0.004000		80	40-140	13	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.00155		mg/L	0.002500		62	30-130			
Surrogate: 2-Fluorobiphenyl	0.00172		mg/L	0.002500		69	30-130			
Surrogate: Nitrobenzene-d5	0.00204		mg/L	0.002500		82	30-130			
Surrogate: p-Terphenyl-d14	0.00250		mg/L	0.002500		100	30-130			

Classical Chemistry

Batch CH31308 - TCN Prep

Blank

Dissolved Cyanide	ND	0.0050	mg/L							
Total Cyanide (LL)	ND	0.0050	mg/L							

LCS

Dissolved Cyanide	0.0218	0.0050	mg/L	0.02006		108	90-110			
Total Cyanide (LL)	0.0218	0.0050	mg/L	0.02006		108	90-110			

LCS

Dissolved Cyanide	0.149	0.0050	mg/L	0.1504		99	90-110			
Total Cyanide (LL)	0.149	0.0050	mg/L	0.1504		99	90-110			

LCS Dup

Dissolved Cyanide	0.148	0.0050	mg/L	0.1504		99	90-110	0.6	20	
Total Cyanide (LL)	0.148	0.0050	mg/L	0.1504		99	90-110	0.6	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1308137

Notes and Definitions

U	Analyte included in the analysis, but not detected
J	Reported between MDL and MRL; Estimated value.
C-	Continuing Calibration recovery is below lower control limit (C-).
B-	Blank Spike recovery is below lower control limit (B-).
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: 1308137

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179
<http://www.health.ri.gov/labs/waterlabs-instate.php>

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: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

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://www4.egov.nh.gov/des/nhelap/namesearch.asp>

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/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Client Project ID: _____

Shipped/Delivered Via: Client

ESS Project ID: 13080137

Date Project Due: 8/15/13

Days For Project: 5 Day

Attachment B
SOP 10_0001

Items to be checked upon receipt:

1. Air Bill Manifest Present?

☒ No

Air No.: _____

2. Were Custody Seals Present?

☐ No

3. Were Custody Seals Intact?

☐ N/A

4. Is Radiation count < 100 CPM?

☐ Yes

5. Is a cooler present?

☐ Yes

Cooler Temp: 3.8

Iced With: Ice

6. Was COC included with samples?

☐ Yes

7. Was COC signed and dated by client?

☐ Yes

8. Does the COC match the sample

☐ Yes

9. Is COC complete and correct?

☐ Yes

10. Are the samples properly preserved?

☐ Yes

11. Proper sample containers used?

☐ Yes

12. Any air bubbles in the VOA vials?

☐ No

13. Holding times exceeded?

☐ No

14. Sufficient sample volumes?

☐ Yes

15. Any Subcontracting needed?

☐ No

16. Are ESS labels on correct containers?

☒ Yes ☐ No

17. Were samples received intact?

☒ Yes ☐ No

ESS Sample IDs: _____

Sub Lab: _____

Analysis: _____

TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: _____

By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	pH	Time
1	Yes	1 L Glass	2	HCL		
1	Yes	1 L Glass	2	NP		
1	Yes	250 ml Plastic	2	NaOH		
1	Yes	40 ml - VOA	3	HCL		
2	Yes	1 L Glass	2	HCL		
2	Yes	1 L Glass	2	NP		
2	Yes	250 ml Plastic	2	NaOH		
2	Yes	40 ml - VOA	3	HCL		
3	Yes	40 ml - VOA	1	HCL		

Completed By: _____

Reviewed By: _____

Date/Time: 8/14/13 1239

Date/Time: 8/15/13 13:50

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

Page 1 of 1

Turn Time If faster than 5 days, prior approval by laboratory is required #	Reporting Limits	ESS LAB PROJECT ID
State where samples were collected from: MA RI CT NH NJ NY ME Other	Electronic Deliverable	1308137
Is this project for any of the following: MA-MCP Navy USACE Other	Format: Excel Access PDF Other	

Co. Name		Project #		Project Name (20 Char or less)		Write Required Analysis				
62A		43654		Tide Water						
Contact Person		Address		City						
Meg K. Lipatuck		530 Broadway		Providence						
State		Zip		PO #						
RI		02909								
Telephone #		Fax #		Email Address						
401-447-8161				margaret.k.lipatuck@esslab.com						
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char or less)	Pres Code	Type of Containers	Number of Containers	Type of Containers
1	8-8-13	950		Y	BL	MW7	145	9	400	WCS 8260 B
2	8-8-13	1024		Y	BL	MW7	145	9	400	WCS 8260 B
3	8-8-13	0900				TR-090013	2	1	0	

Container Type: P-Poly G-Glass S-Sterile V-VOA		Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters	
Cooler Present	Yes ☒ No ☐	Internal Use Only	
Seals Intact	Yes ☐ No ☒ NA: ☐	Pickup ☐ Technicians ☐	
Cooler Temp: 3.8° ice	8/8/13		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A