



**SITE CHARACTERIZATION AND
PERFORMANCE-BASED DISPOSAL
PLAN
FORMER TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND
RIDEM CASE NO. 95-022**

PREPARED FOR:
RIDEM
Providence, Rhode Island

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

August 2011
File No. 43654.30

August 9, 2011
File No. 05.0043654.30-C

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



530 Broadway
Providence
Rhode Island
02909
401-421-4140
Fax: 401-751-8613
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RE: Site Characterization and Performance-Based Disposal Plan
Natural Gas Regulator Station Area
Former Tidewater Facility
200 Taft Street
Pawtucket, Rhode Island
RIDEM Case No. 95-022

Dear Mr. Martella:

On behalf of the Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is submitting the following *Site Characterization and Performance-Based Cleanup Plan* to address limited areas of polychlorinated biphenyl (PCB) impacted soils and concrete within the fenced natural gas regulator station area at the former Tidewater facility located at 200 Taft Street in Pawtucket, Rhode Island. The proposed plan is intended to address PCB Remediation Waste in accordance with the requirements of Toxic Substances Control Act (TSCA) 40 CFR 761.61(b). The procedures for characterization and proposed cleanup presented within this work plan are consistent with those included in 40 CFR 761. In addition, GZA will complete air monitoring activities consistent with the April 2011 *Air Quality Monitoring Program* (AQMP) provided to RIDEM for the Tidewater Site. For reference, a copy of the April 2011 AQMP is provided as Appendix D to the attached Work Plan.

Since the proposed work is being completed as a Performance-Based Cleanup consistent with 40 CFR 761.61(b), regulatory notification or approval is not required from EPA or RIDEM. As a courtesy, however, this work plan is being provided to RIDEM and EPA. If you have any questions regarding the contents of this submittal, please feel free to contact Margaret Kilpatrick at (401) 427-2719.

Sincerely,

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 'John P. Hartley'.

John P. Hartley
Consultant/Reviewer

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

James J. Clark, P.E.
Principal

MSK/JJC:tja

Attachment: Work Plan

CC: Ms. Kimberly Tisa (EPA, Region 1)
Ms. Beverly Auxford-Paiva (NGRID)

1.00 INTRODUCTION



On behalf of the Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental Inc. (GZA) has prepared this Work Plan describing investigation and remediation activities that will be performed consistent with the requirements of the Toxic Substance Control Act (TSCA) 40 CFR Part 761.61(b) to address certain limited areas of polychlorinated biphenyl (PCB) impacted soils and concrete identified within the fenced natural gas regulator station area at the former Tidewater facility in Pawtucket, Rhode Island.

The performance based provisions of 40 CFR Part 761.61(b) are typically applied to limited-size remedial efforts such as this and require attainment of PCB concentrations consistent with an unrestricted use (less than 1 mg/kg) as well as disposal of generated materials in a certain, restricted manner (as indicated in 40 CFR 761(b)(2)). As described herein, this remedial activity involves the removal of a limited volume of PCB impacted soil and concrete.

This Work Plan is organized as follows:

- Section 1.00 contains this introduction;
- Section 2.00 presents a summary of existing Site conditions;
- Section 3.00 describes the Site characterization; and
- Section 4.00 presents the cleanup plan.

This report is subject to the Limitations included as Appendix A.

1.10 PROJECT BACKGROUND

Significant facility upgrades at the active gas regulating station began in July 2011. The facility upgrades, which have been approved by the Rhode Island Public Utility Commission (PUC), will consist of the relocation of an existing overhead 16-inch gas main to below ground, shallow excavation work within the fenced natural gas station area to properly abandon existing facilities, general renovation of the buildings, and updating of all the equipment including electronic and communication services within the buildings.

A *Hazardous Building Material Assessment* survey was completed on March 15, 2011 by Coneco Engineers and Scientists, Incorporated (Coneco) of Bridgewater, Massachusetts on behalf of National Grid in preparation for the proposed natural gas regulator station upgrades. During the March 15, 2011 survey, Coneco collected a discrete soil sample (0-3 inches below ground surface, sample #RB-E/Soil-01) from an area of surface soil staining located beneath a metal riser pipe associated with the natural gas regulator station operations. Results of analytical testing indicated the presence of PCBs as Aroclor 1248 at a concentration of 2,870 mg/kg and Aroclor 1260 at a concentration of 308 mg/kg. These concentrations are in excess of the RIDEM Method 1 Industrial/Commercial Direct Exposure Criterion (I/C-DEC) for PCBs (10 mg/kg), as specified in the Rules and



1.4 miles from the nearest GA designated area, located east of the Site, near Slater Park, on the opposite side of the Seekonk River. The Site and surrounding area are serviced by municipal drinking water. There are no public drinking water supplies within a 1-mile radius of the Site. The closest wellhead protection area is approximately 1.2 miles to the north of the Site. The Seekonk River is located approximately 600 feet east of the natural gas regulator station area. The regulator station area is secured with a 6-foot high gated and locked fence. This area is further secured by a locked perimeter fence located around the Tidewater facility.

3.00 SITE CHARACTERIZATION

Based on the laboratory analytical results from Coneco's initial March 2011 investigation, GZA collected additional soil and concrete characterization data consistent with the requirements of 40 CFR 761.265 (Subpart N) on April 5th, 6th, 7th, and 21st. Additional investigations were conducted to further characterize the surficial stained area proximate to the pipe/valve leak. Specifically, surface soil investigations were conducted using a sampling grid centered around the visible surface staining to characterize the extent of PCB impact. Samples of an adjacent concrete retaining wall and pad where discoloration/staining was observed were also collected for PCB analysis.

In addition to this characterization work in the immediate area of the pipe/valve leak, shallow soil samples were collected for PCB analysis at other locations within the fenced regulator station area for the purpose of assessing general soil quality in planned excavation areas associated with the proposed regulator station reconstruction activities. Figure 4 depicts the locations of surface soil samples. Concrete samples of the foundation pad and retaining wall proximate to the observed pipe/valve leak are depicted on Figure 5. Laboratory Certificates of Analysis are included in Appendix C.

3.10 SURFACE AND SUBSURFACE SOILS (PIPE/VALVE LEAK AREA)

For the proposed characterization centered on the Coneco sample location RB-E/Soil-01, GZA completed an approximate 2 meter (6 foot) spaced soil sampling grid consisting of approximately 10 sample locations (GRSP-1 to -10). From these locations, surface soil samples were collected from the 0-3 inch, 9-12 inch and 21-24 inch intervals below grade. Surface soil sample location GRSP-1 was advanced to replicate RB-E/Soil-01. Surface soil samples for the 0-3 inch and 9-12 inch intervals from GRSP-2 through GRSP-5, as well as the 0-3 inch, 9-12 inch and 21-24 inch intervals from GRSP-1, were submitted to ESS Laboratories of Warwick, Rhode Island (ESS) for PCB analysis via EPA Method 8082A using a manual Soxhlet extraction per EPA Method 3540. The remaining 21-24 inch interval soil samples from GRSP-2 through GRSP-5 and surface soil locations GRSP-6 to GRSP-10 were submitted to the laboratory but held based on the results of locations GRSP-1 to GRSP-5. Samples from locations GRSP-9 (0-3 inch and 9-12 inch) and GRSP-10 (0-3 inch) were later released for analytical testing. Soil sampling analytical results are summarized in Table 1.



Sample locations GRSP-11, GRSP-12 and GRSP-13 were later advanced to further define the limits of PCB impacts in soil proximate to GRSP-1, with samples collected at these three locations from the 9-12 inch, 21-24 inch and 33-36 inch intervals below grade. Additional vertical samples were also collected from the GRSP-1 location at depths of 33-36 inches and 45-48 inches below grade. Samples from the 9-12 inch interval from GRSP-11, GRSP-12 and GRSP-13, as well as the 33-36 inch and 45-48 inch intervals from GRSP-1, were submitted to ESS for PCB analysis via EPA Method 8082A using a manual Soxhlet extraction per EPA Method 3540. Samples from the 21-24 inch interval from GRSP-11 and GRSP-13 were later released for analytical testing based on the results of the shallow 9-12 inch interval at these sample locations.

As shown in the table below, 21 samples were analyzed for PCBs, with 16 detections of PCBs (see Table 1). The only PCBs detected were Aroclor 1248 and 1260. The three shallow depth intervals from GRSP-1 (0-3, 9-12 and 21-24 inches) contained elevated PCB concentrations (>1 mg/kg). Results below 33 inches were less than 1 mg/kg. In general, PCB concentrations from this location decrease with depth consistent with a top down release model. PCB concentrations from the sampling grid indicate that soils containing elevated PCB levels (greater than 1 mg/kg) are confined to the immediate surrounding area of RB-E/Soil-01 and GRSP-1, including GRSP-2, GRSP-11 and GRSP-13.

Depth of Sample (inches)	PCB Concentration (mg/kg) (Aroclor 1248 and 1260)									
	GRSP-1	GRSP-2	GRSP-3	GRSP-4	GRSP-5	GRSP-9	GRSP-10	GRSP-11	GRSP-12	GRSP-13
0-3	2,540	1.86	0.188	<0.0532	0.486	0.254	<0.522	NC	NC	NC
9-12	159	0.161	<0.0535	<0.0524	0.121	<0.524	--	4.383	0.6359	12.4
21-24	63.6	--	--	--	--	--	--	2.05	--	2.769
33-36	0.209	NC	NC	NC	NC	NC	NC	--	--	--
45-48	0.6482	NC	NC	NC	NC	NC	NC	NC	NC	NC

NC – Not Collected

--Indicates...

3.20 CONCRETE SAMPLES

Six concrete samples were collected from a scrubber equipment pad and 12 samples from a concrete retaining wall proximate to the GRSP-1 location (the scrubber is to be removed as part of the station upgrade). Some discoloration/staining was observed on these concrete surfaces. Concrete was sampled consistent with *EPA Region I Draft Standard Operating Procedure for Sampling Concrete in the Field*. GZA utilized an impact hammer drill, dedicated 0.75-inch masonry drill bits, and dedicated disposable sampling trays to collect approximately 20 grams of porous materials from the sampling surface to 0.5-inches below grade. Deeper concrete samples at depths of 2 inches and 3 inches below the concrete surface were collected at sample location RW-3. All six of the concrete pad samples and nine of the 12 concrete retaining wall samples were analyzed by ESS for PCBs via Method 8082A using a manual Soxhlet extraction per EPA Method 3540.



As shown in the table below, 15 concrete samples were analyzed for PCBs via Method 8082A, with ten detections of PCBs. Table 3 presents a summary of the analytical data. Consistent with the soil sample results, the only PCBs detected were Aroclor 1248 and 1260.

With respect to the concrete pad, these results indicate that the northern portion is impacted with PCBs at levels greater than 1 mg/kg. Based on the retaining wall sample result (RW-3), a limited portion of this wall is also impacted with PCBs above 1 mg/kg.

Sample	Aroclor 1248 Concentration (mg/kg)
CS-1	0.148
CS-2	16.5
CS-3	10.1
CS-4	<0.105
CS-5	0.162
CS-6	<0.100
RW-1	<0.105
RW-2	<0.105
RW-3	4.58
RW-3 (2 in)	3.93
RW-3 (3 in)	0.273
RW-3A	0.19
RW-3B	0.556
RW-3C	0.673
RW-4	<0.102

3.30 SURFACE SOILS (PROPOSED EXCAVATION AREAS)

In addition to the grid samples around the suspected release location, GZA collected surface soil samples within each of the proposed excavation areas associated with the natural gas regulator station upgrades to assess surface soil quality. Surface soil samples were collected from 26 locations, GRS-1 through GRS-26. At each location, surface soil samples were collected from the 0-3 inch and 9-12 inch depth intervals. All collected samples were submitted to ESS and analyzed for PCBs via Method 8082A using a manual Soxhlet extraction per EPA Method 3540 from the 0-3 inch depth interval. Samples from the 9-12 inch below grade interval were held at the laboratory pending results of the 0-3 inch interval. At one sample location (GRS-14) the deeper sample interval (9-12 inches) was analyzed for PCBs due to the detection of PCBs at 18.4 mg/kg in the shallow interval.

Thirty-six samples were analyzed for PCBs via Method 8082A, with seven detections of PCBs. The table below shows the seven samples that were detected and the corresponding concentrations. Table 2 presents a summary of this data. Only one location had detections above 1 mg/kg; GRS-14 0-3 inch depth interval and 9-12 inch depth interval. PCBs were detected at 3.78 mg/kg in the 9-12 inch interval from GRS-14. As shown on the attached Figure 4, GRS-14 is located approximately 6 feet south of the GPRS-1 location. The detection of PCBs at this location are likely related to the above reference pipe/valve.



Depth of Sample (inches)	Aroclor 1248 Concentration (mg/kg)				
	GRS-3	GRS-11	GRS-12	GRS-13	GRS-14
0-3	0.0713	0.619	0.451	0.293	18.4
9-12	--	--	--	0.0729	3.78

--Indicates...

3.40 QA/QC SAMPLING AND ANALYTICAL RESULTS

Throughout the collection of Site Characterization samples, GZA followed Standard QA/QC procedures. GZA's QA/QC program included the collection of four blind field-collected duplicate samples. Laboratory analytical results for the blind co-located field duplicate samples and their corresponding initial samples are summarized in Table 4. Copies of original laboratory data, laboratory QA/QC, methods, and chain of custody forms are provided for reference in Appendix C.

3.50 DATA EVALUATION

Following the receipt of analytical results, GZA conducted a data validation review to evaluate whether that laboratory data was of defensible analytical quality. Procedures employed were consistent with EPA Region I *Data Validation Functional Guidelines for Evaluating Environmental Analyses*.

GZA's review of laboratory data for blind collocated field duplicate samples identified no significant disparity between results of the collected duplicates and the corresponding materials samples. Any variations in analytical results are attributed to the heterogeneity of the sample matrix. A review of QA/QC documentation and analytical narratives provided by ESS Laboratories (ESS) indicated issues for several samples; full descriptions of quality control issues are provided in the laboratory report narratives which are included in Appendix D. An evaluation of information provided by ESS concerning sample integrity, chain-of-custody procedures, quality assurance and quality control, and necessary report components, identified no data quality issues of concern. Accordingly, it is the opinion of GZA that the QA/QC analytical results do not represent a fault in the analytical method or sampling technique, and the data is usable without adjustment.

4.00 CLEANUP PLAN

The following sections outline the proposed cleanup plan for the limited PCB impacted soil and concrete described above.

4.10 CLEANUP STANDARDS AND PCB IMPACTED SOIL AND CONCRETE REMOVAL

As described previously, this PCB cleanup plan has been designed consistent with the performance-based requirements of TSCA (40 CFR 761.61(b)). All soil and concrete



detected at concentrations in excess of 1 mg/kg will be removed and disposed of off-Site. The PCB impacted soils located in the immediate vicinity of the pipe/valve assembly, impacted concrete on the adjacent retaining wall, and impacted concrete associated with the concrete pad exhibiting concentrations greater than 1 mg/kg meet the TSCA definition of PCB Remediation Waste and will be disposed off-Site at a facility consistent with TSCA requirements. The approximate limits of soil exhibiting PCB concentrations in excess of 1 mg/kg are depicted on Figure 4.

Environmental services personnel may utilize hand shovels, soil vacuum equipment, and/or hand tools to remove the identified PCB impacted soils which are limited to the immediate area of sample location GRSP-1. The maximum depth of removal at GRSP-1 is expected to be approximately 3 feet below grade. Soil removal outside the immediate area of GRSP-1 will likely be limited to approximately 12 to 24 inches below grade. Based on current characterization results, it is estimated that approximately 7 cubic yards of impacted soil will require removal. This material will be transported for off-Site disposal at a National Grid approved PCB disposal facility consistent with the requirements of 40 CFR Part 761.61(b)(2) as detailed in Section 4.40. Due to the limited volume of material expected to be generated (approximately 10 to 12 tons), the limited access within the work area, and concerns regarding fugitive dust, it is anticipated that the soil material will either be removed and containerized via a vactor rig for immediate off-Site disposal or removed via hand excavation.

The limited area of the concrete retaining wall exhibiting PCB concentrations in excess of 1 mg/kg will be scarified, containerized and disposed off-Site. This area is limited to approximately 3 square feet with a scarification depth of 3 inches.

The northernmost 2.5 feet of the concrete pad will be sawcut, removed and disposed off-Site. The approximate dimensions of this pad removal will be 2.5 feet by 5 feet by 1 foot thick (approximately 0.5 cubic yards).

During these soil and concrete removal efforts, dust generation will be minimized via the application of water and/or the use of vacuum equipment. Dust levels will be monitored during these activities, and in the event unacceptable levels are detected, additional engineered control measures will be implemented. Further details regarding the air monitoring program which will be implemented during the field activities are included in Section 4.60.

4.20 POST-REMOVAL VERIFICATION SAMPLING

Following the excavation and removal of PCB-impacted soils, the scarification of the concrete retaining wall, and removal of the northern portion of the concrete pad, post-removal verification sampling will be performed. Confirmatory samples will be collected in accordance with the requirements outlined in Subpart O of TSCA.



Verification samples will be submitted for laboratory analysis of PCBs by Method 8082A using a manual Soxhlet extraction per EPA Method 3540. QA/QC and data validation techniques employed during post-removal sampling activities will be consistent with those utilized for the previously completed Site characterization.

4.30 RESTORATION

Following removal of the PCB-impacted soil, the excavation will be backfilled with clean material from a known source consistent with RIDEM requirements. The scarified area of the concrete retaining wall will be resurfaced with concrete. The proposed renovation activities associated with the existing natural gas regulating station will continue.

4.40 PCB REMEDIATION WASTE DISPOSAL

PCB Remediation Waste will be transported off-Site for disposal in containers meeting the requirements of the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171 through 180. PCB Remediation Waste will be disposed of consistent with the disposal options under 761.61(b)(2) (*i.e.*, in a high temperature incinerator approved under §761.70(b), an alternate disposal method approved under §761.60(e), a chemical waste landfill approved under §761.75, or in a facility with a coordinated approval issued under §761.77).

4.50 AIR QUALITY MONITORING PLAN

During the proposed work activities, GZA will implement air monitoring as outlined in the April 2011 Air Quality Monitoring Program (AQMP) submitted to RIDEM. A copy of the AQMP is provided as Appendix D. This air quality monitoring program has been designed to be protective by using a two tiered approach; real-time air monitoring, and time integrated sampling using US EPA approved sampling and analytical methods. The real time monitoring will involve the use of hand held instrumentation deployed upwind and directly downwind of the work zone and at the nearest downwind location along the property line. The first tier (real time monitoring) is designed to provide an early warning to personnel of potential air quality issues and allow for the implementation of engineered controls and/or modifications to work practices. The handheld instrumentation to be used during the real-time monitoring includes: 1) a photoionization detector (PID) for total volatile organic compounds (TVOCs), 2) a field gas chromatograph to measure benzene concentrations and 3) a particulate meter to monitor for dust. The second tier, time integrated, laboratory sampling, involves the deployment of stationary sampling equipment (*i.e.*, Summa canisters) at the nearest property line directly downwind of the work zone(s) and at an upwind perimeter location. This second tier is designed to assess and document perimeter air quality during these activities.

The means and methods associated with each tier of sampling as well as action levels are described in the AQMP included in Appendix D.

4.60 SCHEDULE



The proposed natural gas regulator station renovations are necessary for National Grid to continue to supply service to Rhode Island customers. The entire renovation project is expected to take approximately 4 months to complete and must be completed before the Fall 2011 (beginning of heating season; higher load capacities). Based on this and the anticipated earthwork schedule for the regulator upgrades, the proposed PCB remediation work will likely occur in mid/late August or early September 2011. It is expected that the work described herein will take approximately 2-3 days to complete.

At the completion of the cleanup activities presented under this Work Plan, National Grid will submit a summary report documenting the cleanup and sampling activities for submittal to EPA and RIDEM.

Attachments: Table 1 – Summary of PCB Soil Analytical Data GRSP Samples
Table 2 – Summary of Soil PCB Analytical Data GRS-1 to GRS-26
Table 3 – Summary of Concrete PCB Analytical Data
Table 4 – Summary of QA/QC Analytical Data
Figure 1 – Locus Plan
Figure 2 – Gas Regulator Station Aerial Image
Figure 3 – Gas Regulator Station Site Plan
Figure 4 – Gas Regulator Station Soil Sample Location Plan
Figure 5 – Gas Regulator Station Concrete Sampling Location Plan
Appendix A – Limitations
Appendix B – Site Photographs
Appendix C – Laboratory Certificates of Analysis
Appendix D – April 2011 Air Quality Monitoring Plan

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TABLES

TABLE 1
Summary of PCB Soil Analytical Data
GRSP Samples
Gas Regulator Station

8/5/2011
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Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRSP-1 0-3 4/6/2011 1104050-24 SOLID	GRSP-1 9-12 4/6/2011 1104050-25 SOLID	GRSP-1 21-24 4/6/2011 1104050-26 SOLID	GRSP-1 33-36in 4/21/2011 1104254-01 SOLID	GRSP-1 45-48in 4/21/2011 1104254-02 SOLID	GRSP-2 0-3 4/6/2011 1104050-13 SOLID	GRSP-2 9-12 4/6/2011 1104050-14 SOLID
Method Name	Analyte	Units									
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	2,540	159	63.6	0.209	0.585	1.86	0.161
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	0.0632	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<352	<56.8	<5.50	<0.0564	<0.0560	<0.0535	<0.0521

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 1
Summary of PCB Soil Analytical Data
GRSP Samples
Gas Regulator Station

8/5/2011
05.0043654.00

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRSP-3 0-3 4/6/2011 1104050-16 SOLID	GRSP-3 9-12 4/6/2011 1104050-15 SOLID	GRSP-4 0-3 4/6/2011 1104050-17 SOLID	GRSP-4 9-12 4/6/2011 1104050-18 SOLID	GRSP-5 0-3 4/6/2011 1104050-22 SOLID	GRSP-5 9-12 4/6/2011 1104050-23 SOLID	GRSP-9 0-3in 4/6/2011 1104259-01 Solid
<u>Method Name</u>	<u>Analyte</u>	<u>Units</u>									
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	0.188	<0.0535	<0.0532	<0.0524	0.486	0.121	0.254
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0500	<0.0535	<0.0532	<0.0524	<0.0568	<0.0552	<0.0533

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 1
Summary of PCB Soil Analytical Data
GRSP Samples
Gas Regulator Station

8/5/2011
05.0043654.00

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRSP-9 9-12in 4/6/2011 1104259-02 Solid	GRSP-10 0-3in 4/6/2011 1104259-03 Solid	GRSP-11 9-12in 4/21/2011 1104254-03 SOLID	GRSP-11 21-24in 4/21/2011 1104296-01 SOLID	GRSP-12 9-12in 4/21/2011 1104254-04 SOLID	GRSP-13 9-12in 4/21/2011 1104254-05 SOLID	GRSP-13 21-24in 4/21/2011 1104296-03 SOLID
Method Name	Analyte	Units									
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	<0.0524	<0.0522	4.14	1.93	0.556	12.4	2.57
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0524	<0.0522	0.243	0.12	0.0799	<1.09	0.199
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0524	<0.0522	<0.0543	<0.0546	<0.0543	<1.09	<0.0555

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 2
Summary of Soil PCB Analytical Data
GRS-1 to GRS-26
Gas Regulator Station

8/5/2011
05.0043654.00

	Sample No. Sample Date: Sample Time: ClientSample:		RIDE M I/C DEC (mg/kg)	RIDE M UCL (mg/kg)	GRS-1 0-3 4/7/2011 1104085-01 Solid	GRS-2 0-3 4/6/2011 1104050-21 Solid	GRS-3 0-3 4/6/2011 1104050-19 Solid	GRS-3 36 4/6/2011 1104050-20 Solid	GRS-4 0-3 4/5/2011 1104021-01 Solid	GRS-5 0-3 4/5/2011 1104021-02 Solid	GRS-5 1 4/5/2011 1104021-03 Solid	GRS-6 0-3 4/5/2011 1104021-04 Solid
<u>Method Name</u>	<u>Analyte</u>	<u>Units</u>										
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	<0.0552	<0.0541	0.0713	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0552	<0.0541	<0.0541	<0.0651	<0.0544	<0.0540	<0.0538	<0.0538

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 2
Summary of Soil PCB Analytical Data
GRS-1 to GRS-26
Gas Regulator Station

8/5/2011
05.0043654.00

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRS-7 0-3	GRS-8 0-3	GRS-8 9-12	GRS-8 2	GRS-9 0-3	GRS-9 2	GRS-10 0-3	GRS-11 0-3
					4/5/2011 1104021-05 Solid	4/5/2011 1104021-06 Solid	4/5/2011 1104021-07 Solid	4/5/2011 1104021-08 Solid	4/5/2011 1104021-09 Solid	4/5/2011 1104021-10 Solid	4/5/2011 1104021-11 Solid	4/5/2011 1104021-12 Solid
<u>Method Name</u>	<u>Analyte</u>	<u>Units</u>										
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	0.619
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0556	<0.0639	<0.0552	<0.0543	<0.0556	<0.0535	<0.0685	<0.0541

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 2
Summary of Soil PCB Analytical Data
GRS-1 to GRS-26
Gas Regulator Station

8/5/2011
05.0043654.00

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRS-12 0-3 4/5/2011 1104021-13 Solid	GRS-13 0-3 4/5/2011 1104021-14 Solid	GRS-13 1 4/5/2011 1104021-15 Solid	GRS-14 0-3 4/5/2011 1104021-16 Solid	GRS-14 9-12 4/5/2011 1104186-02 Solid	GRS-15 0-3 4/5/2011 1104021-17 Solid	GRS-15 1_5 4/5/2011 1104021-18 Solid	GRS-16 0-3 4/5/2011 1104021-19 Solid
Method Name	Analyte	Units										
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	0.451	0.293	0.0729	18.4	3.78	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0553	<0.0575	<0.0552	<3.05	<0.0549	<0.0526	<0.0535	<0.0521

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 2
Summary of Soil PCB Analytical Data
GRS-1 to GRS-26
Gas Regulator Station

8/5/2011
05.0043654.00

	Sample No. Sample Date: Sample Time: ClientSample:		RIDE M I/C DEC (mg/kg)	RIDE M UCL (mg/kg)	GRS-17 0-3 4/5/2011 1104021-20 Solid	GRS-18 0-3 4/5/2011 1104021-21 Solid	GRS-18 1 4/5/2011 1104021-22 Solid	GRS-19 0-3 4/5/2011 1104021-23 Solid	GRS-20 0-3 4/5/2011 1104050-01 Solid	GRSBD040511-0-3 4/5/2011 1104050-02 Solid	GRSBD040511-9-12 4/5/2011 1104050-03 Solid	GRS-21 0-3 4/6/2011 1104050-04 Solid
<u>Method Name</u>	<u>Analyte</u>	<u>Units</u>										
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0526	<0.0532	<0.0521	<0.0535	<0.0565	<0.0526	<0.0532	<0.0546

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 2
Summary of Soil PCB Analytical Data
GRS-1 to GRS-26
Gas Regulator Station

8/5/2011
05.0043654.00

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRS-22 0-3 4/6/2011 1104050-05 Solid	GRS-23 0-3 4/6/2011 1104050-06 Solid	GRS-24 0-3 4/6/2011 1104050-07 Solid	GRS-25 0-3 4/6/2011 1104050-08 Solid	GRS-25 1_5 4/6/2011 1104050-09 Solid	GRS-BD-040611- 1_5 4/6/2011 1104050-10 Solid	GRS-26 4/6/2011 1104050-11 Solid	GRS-BD-040611-0- 3 4/6/2011 1104050-12 Solid
<u>Method Name</u>	<u>Analyte</u>	<u>Units</u>										
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0527	<0.0543	<0.0529	<0.0568	<0.0526	<0.0519	<0.0526	<0.0532

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

TABLE 3
Summary of Concrete PCB Analytical Data
Gas Regulator Station

8/5/2011
05.0043654.00

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		CS-1 4/5/2011 1104021-24 Concrete	CS-2 4/5/2011 1104021-25 Concrete	CS-3 4/5/2011 1104021-26 Concrete	CS-4 4/5/2011 1104198-01 Concrete	CS-5 4/5/2011 1104198-02 Concrete	CS-6 4/5/2011 1104198-03 Concrete	RW-1 4/5/2011 1104021-27 Concrete	RW-2 4/5/2011 1104021-28 Concrete
Method Name	Analyte	Units								
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	0.148	16.5	10.1	<0.105	0.162	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100	<0.105	<0.105

Notes:

Indicates concentrations detected in excess of
cleanup criteria of 1 mg/kg

TABLE 3
Summary of Concrete PCB Analytical Data
Gas Regulator Station

8/5/2011
05.0043654.00

Former Tidewater Facility
Pawtucket, RI

	Sample No.		RW-3	RW-4	RW-3 2in	RW-3 3in	RW-3A 1in	RW-3B 1in	RW-3C 1in
	Sample Date:		4/5/2011	4/5/2011	4/21/2011	4/21/2011	4/21/2011	4/21/2011	4/21/2011
	Sample Time:		1104021-29	1104021-30	1104254-06	1104296-03	1104254-07	1104254-08	1104254-09
	ClientSample:		Concrete	Concrete	Concrete	Concrete	Concrete	Concrete	Concrete
Method Name	Analyte	Units							
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	4.58	<0.102	3.71	0.273	0.19	0.566	0.673
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.104	<0.102	0.218	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991	<0.103

Notes:

Indicates concentrations detected in excess of
cleanup criteria of 1 mg/kg

TABLE 4
Summary of QA/QC Analytical Data
Gas Regulator Station

8/5/2011
05.0043654.00

Former Tidewater Facility
Pawtucket, RI

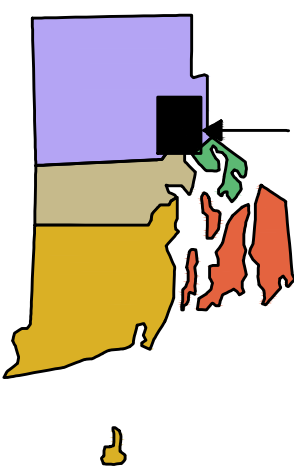
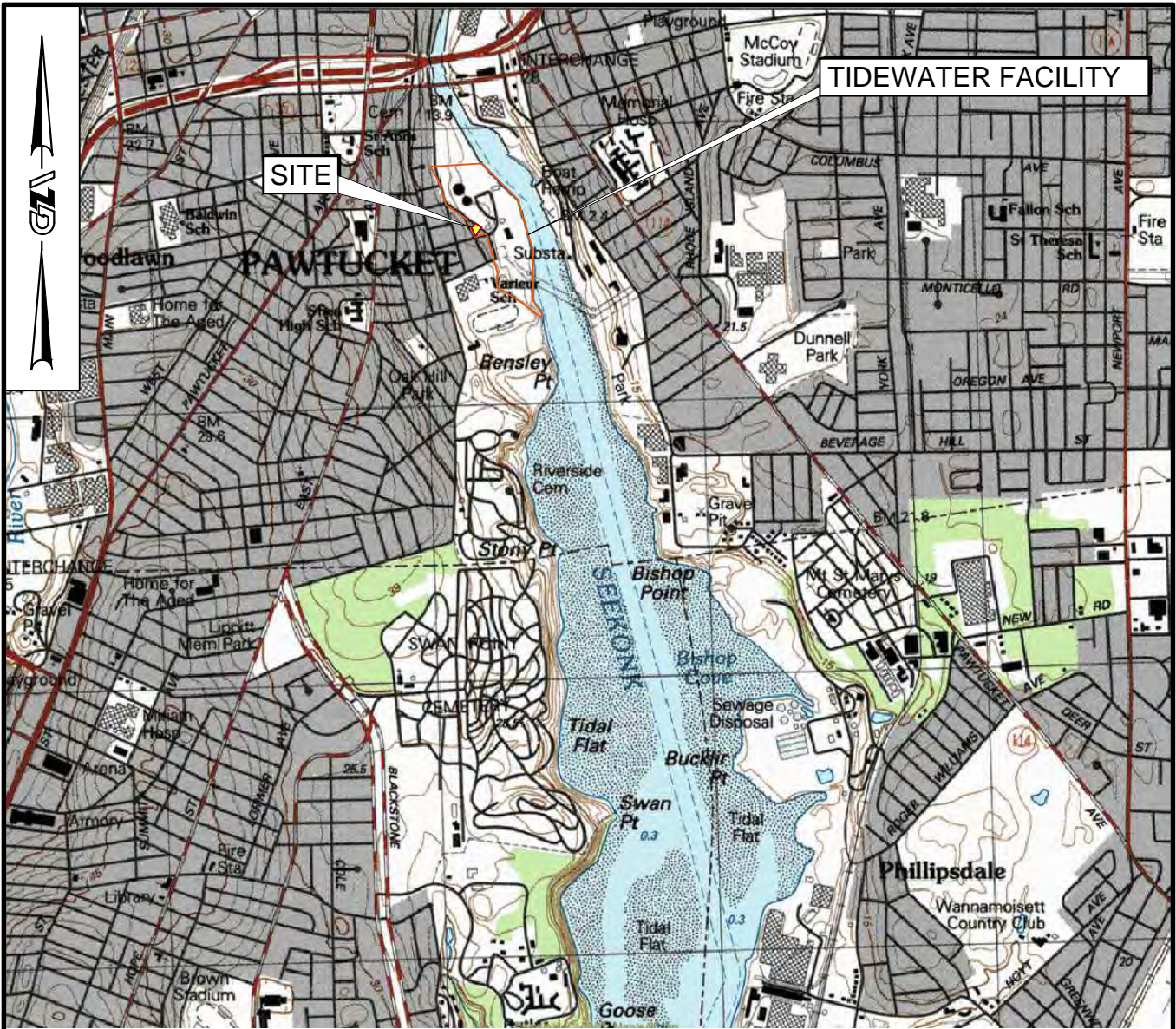
	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRS-20 0-3 4/5/2011 1104050-01 Solid	GRSBD040511-0-3 4/5/2011 1104050-02 Solid	GRSBD040511-9-12 4/5/2011 1104050-03 Solid	GRS-25 1_5 4/6/2011 1104050-09 Solid	GRS-BD-040611-1_5 4/6/2011 1104050-10 Solid	GRS-26 4/6/2011 1104050-11 Solid	GRS-BD-040611-0-3 4/6/2011 1104050-12 Solid
Method Name	Analyte	Units									
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0565	<0.0526	<0.0532	<0.0526	<0.0519	<0.0526	<0.0532

Notes:

Indicates concentrations detected in excess of cleanup criteria of 1 mg/kg

FIGURES

© 2010 - GZA GeoEnvironmental, Inc. GZA-J:\ENV\43654-30.msk\GZA DWGS\43654-30 LOCUS PLAN.dwg [LOCUS PLAN] August 05, 2011 - 12:43pm Sophia.narkiewicz

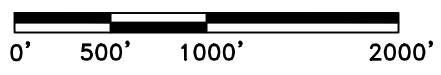


BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
PROVIDENCE, RI (2001)

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY MAPTECH, INC.

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

APPROXIMATE SCALE IN FEET



TIDEWATER FACILITY
GAS REGULATOR STATION

PAWTUCKET, RHODE ISLAND

LOCUS PLAN

AUGUST 2011

FIGURE NO. 1



© 2011 - GZA GeoEnvironmental, Inc. GZA-A\DNA\43654-30.mxd GZA (DWG) 43654-30_1_10.dwg [2] August 05, 2011 - 12:46pm S:\photo\mkebercz

NOTE:
AERIAL PHOTO FROM GOOGLE EARTH
PRO, PHOTO DATE APRIL 30, 2010

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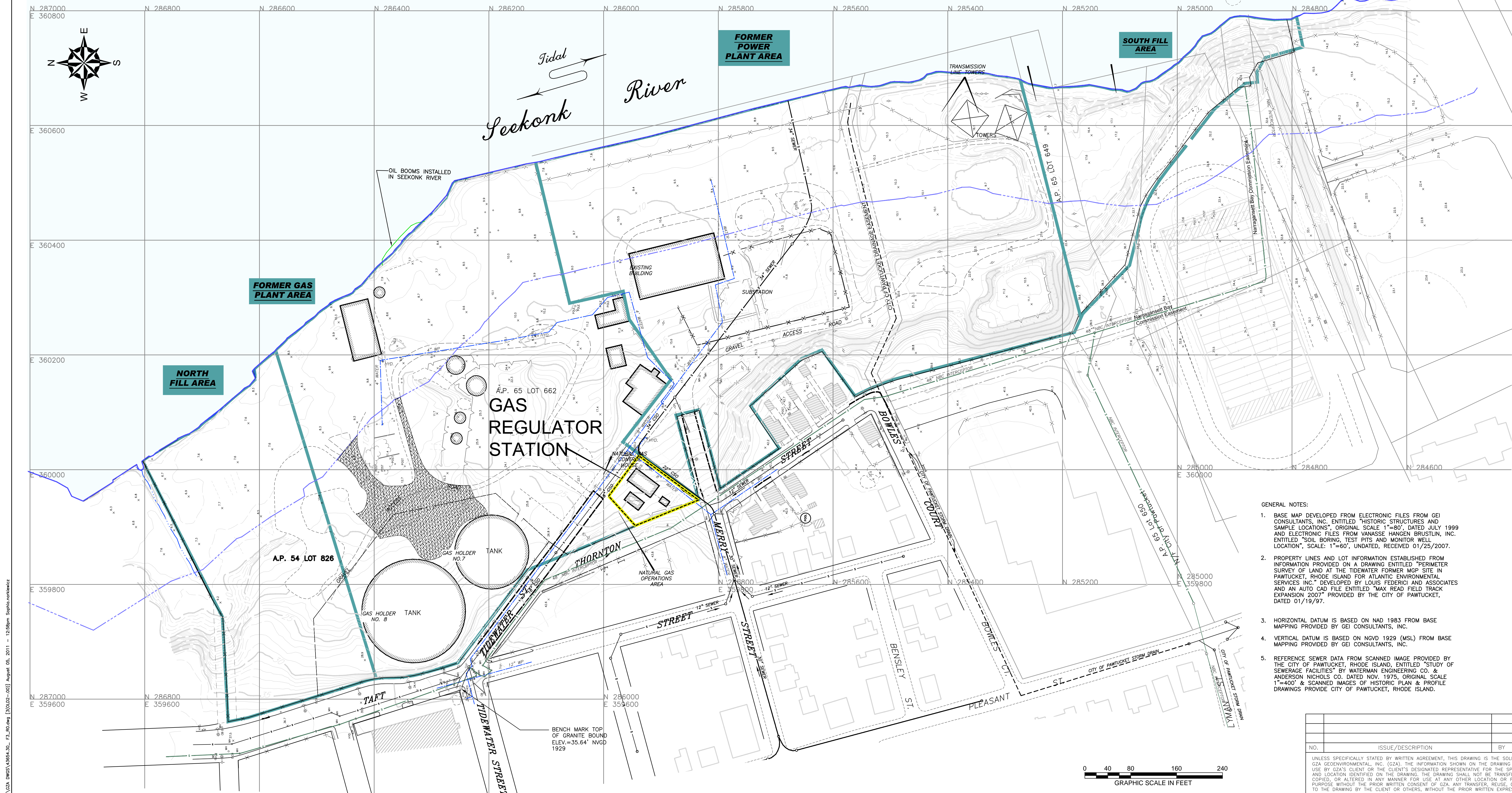
NO.	ISSUE/DESCRIPTION	BY	DATE

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NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND

GAS REGULATOR STATION
AERIAL IMAGE

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: nationalgrid		
PROJ MGR: MK	REVIEWED BY: EB	CHECKED BY: MK	FIGURE
DESIGNED BY: EB	DRAWN BY: CRB	SCALE: NOT TO SCALE	2
DATE: AUGUST 2011	PROJECT NO. 43654.30	REVISION NO. 0	



- GENERAL NOTES:
1. BASE MAP DEVELOPED FROM ELECTRONIC FILES FROM GEI CONSULTANTS, INC. ENTITLED "HISTORIC STRUCTURES AND SAMPLE LOCATIONS" ORIGINAL SCALE 1"=80', DATED JULY 1999 AND ELECTRONIC FILES FROM VANASSE HANGEN BRUSTLIN, INC. ENTITLED "SOIL BORING, TEST PITS AND MONITOR WELL LOCATION", SCALE: 1"=60', UNDATED, RECEIVED 01/25/2007.
 2. PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "PERIMETER SURVEY OF LAND AT THE TIDEWATER FORMER MOP 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, DATED 01/19/97.
 3. HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
 4. VERTICAL DATUM IS BASED ON NGVD 1929 (MSL) FROM BASE MAPPING PROVIDED BY GEI CONSULTANTS, INC.
 5. REFERENCE SEWER DATA FROM SCANNED IMAGE PROVIDED BY THE CITY OF PAWTUCKET, RHODE ISLAND, ENTITLED "STUDY OF SEWERAGE FACILITIES" BY WATERMAN ENGINEERING CO. & ANDERSON NICHOLS CO. DATED NOV. 1975, ORIGINAL SCALE 1"=400' & SCANNED IMAGES OF HISTORIC PLAN & PROFILE DRAWINGS PROVIDED CITY OF PAWTUCKET, RHODE ISLAND.



DRAFT COPY
NOT FOR CONSTRUCTION

LEGEND	
	EXISTING BUILDINGS
	EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
	EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
	APPROXIMATE PROPERTY/LOT LINE (SEE GENERAL NOTE 2)
	EXISTING STRUCTURE (FORMER GAS HOLDER)
	SPOT ELEVATION
	LIGHT POLES
	UTILITY POLES
	UTILITY LIGHT POLE
	MANHOLE
	CATCHBASINS
	FENCE
	EXISTING WATER LINE
	EXISTING NBC INTERCEPTOR SANITARY SEWER
	EXISTING CITY OF PAWTUCKET STORM DRAIN
	EXISTING STORM/COMBINED SAN. SEWER OVERFLOW

NO.	ISSUE/DESCRIPTION	BY	DATE

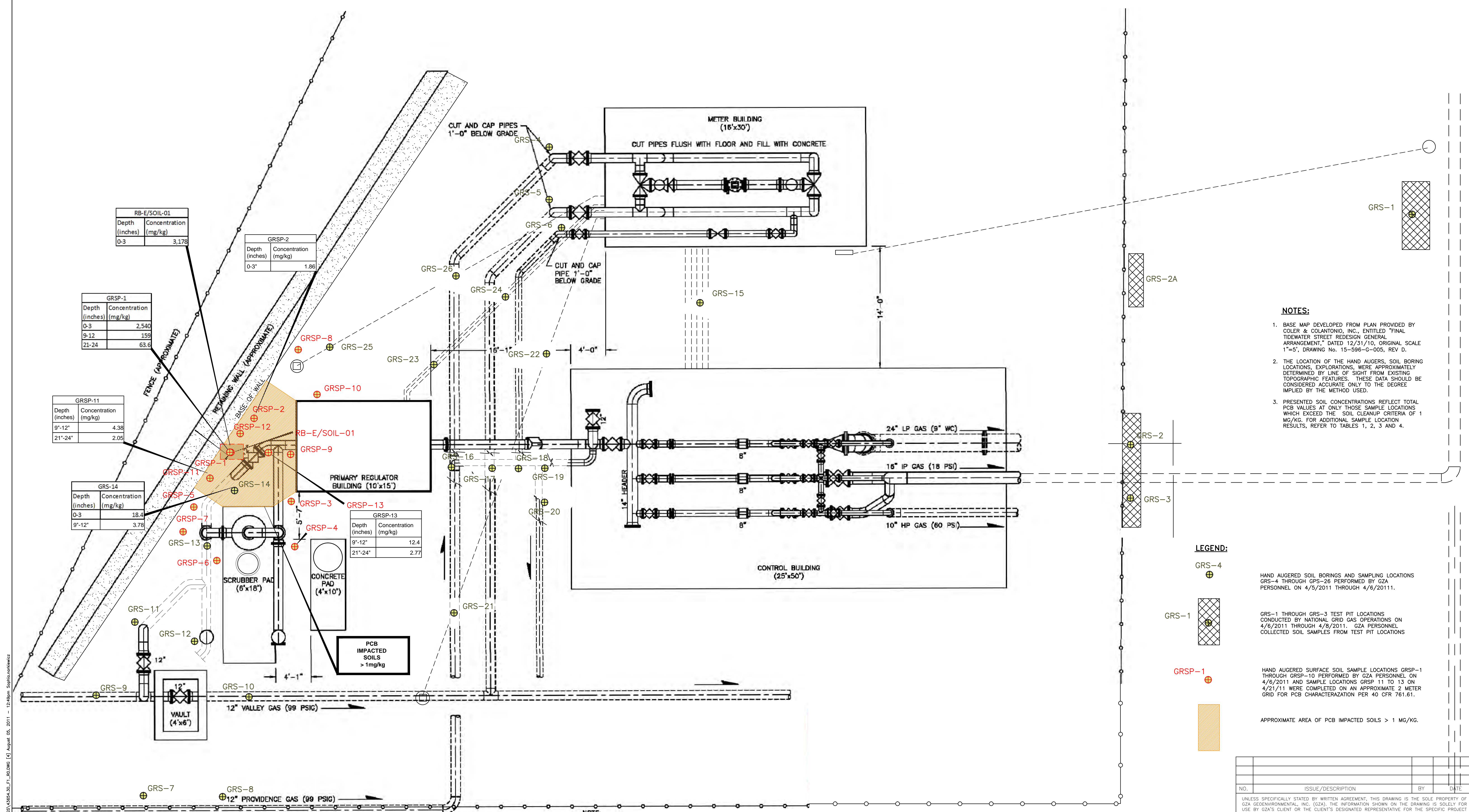
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE 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.

**NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND**

**GAS REGULATOR STATION
SITE PLAN**

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:
PROJ MGR: MK	REVIEWED BY: EB
DESIGNED BY: EB	DRAWN BY: CRB
DATE: AUGUST 2011	PROJECT NO. 43654.00
CHECKED BY: MK	SCALE: 1"=5'
REVISION NO. 0	FIGURE 3
SHEET NO. 3 OF 5	

© 2011 - GZA GeoEnvironmental, Inc. GZA-J:\DVA\43654-00.mxd\GZA_DWG\43654-00.dwg August 05, 2011 - 12:58pm. S:\photo\mckelvey



- NOTES:**
1. BASE MAP DEVELOPED FROM PLAN PROVIDED BY COLER & COLANTONIO, INC., ENTITLED "FINAL TIDEWATER STREET REDESIGN GENERAL ARRANGEMENT," DATED 12/31/10, ORIGINAL SCALE 1"=5', DRAWING No. 15-596-G-005, REV D.
 2. THE LOCATION OF THE HAND AUGERS, SOIL BORING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY LINE OF SIGHT FROM EXISTING TOPOGRAPHIC FEATURES. THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
 3. PRESENTED SOIL CONCENTRATIONS REFLECT TOTAL PCB VALUES AT ONLY THOSE SAMPLE LOCATIONS WHICH EXCEEDED THE SOIL CLEANUP CRITERIA OF 1 MG/KG. FOR ADDITIONAL SAMPLE LOCATION RESULTS, REFER TO TABLES 1, 2, 3 AND 4.

NO.	ISSUE/DESCRIPTION	BY	DATE

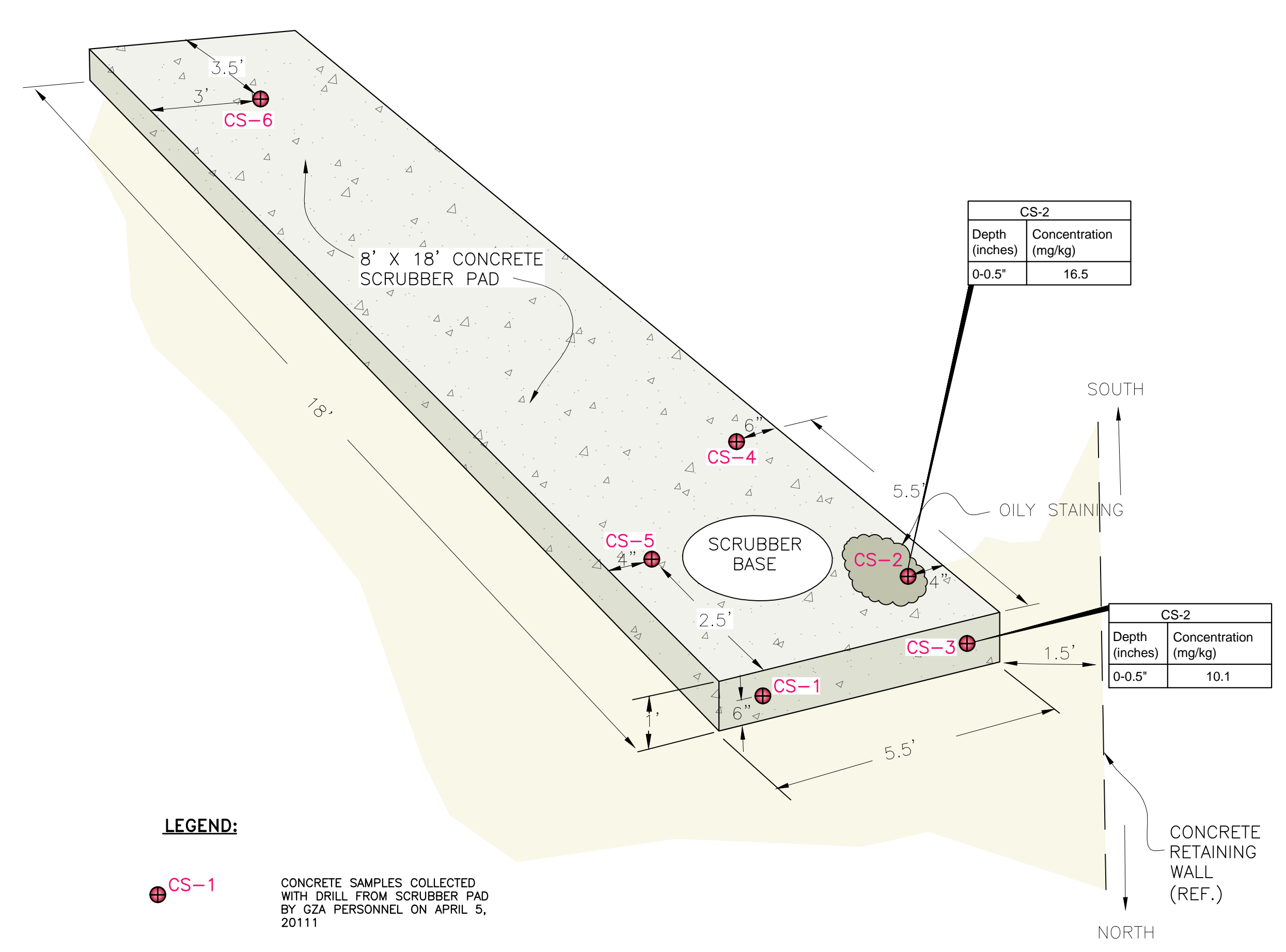
UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE 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.

NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND
GAS REGULATOR STATION
SOIL SAMPLING LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR:
PROJ MGR: MK DESIGNED BY: EB DATE: AUGUST 2011	REVIEWED BY: EB DRAWN BY: CRB PROJECT NO.: 43654.30
CHECKED BY: MK SCALE: 1"=5' REVISION NO.: 0	FIGURE 4 SHEET NO. 4 OF 5

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.

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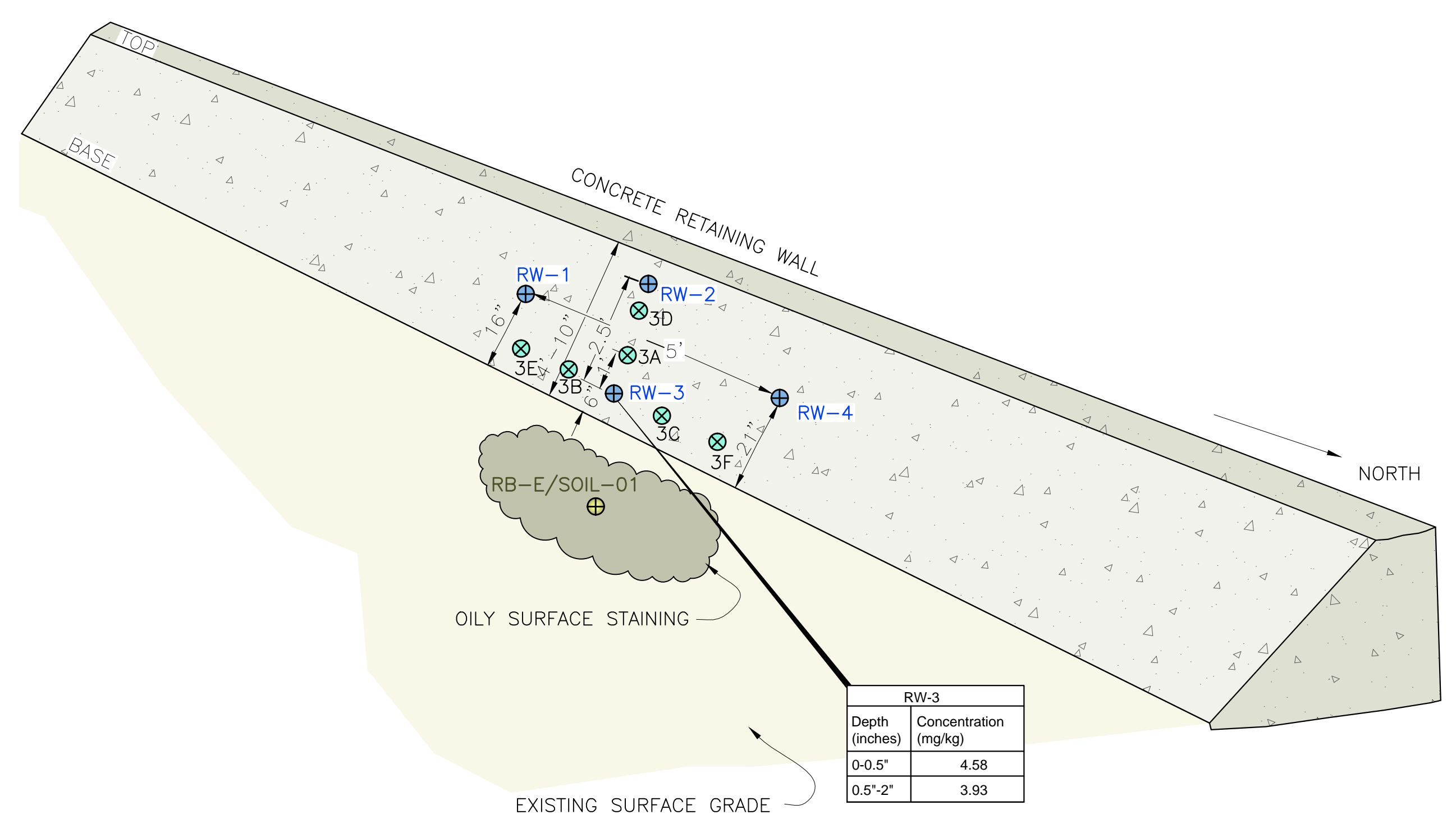
LEGEND:

CS-1 CONCRETE SAMPLES COLLECTED WITH DRILL FROM SCRUBBER PAD BY GZA PERSONNEL ON APRIL 5, 2011

CS-2	
Depth (inches)	Concentration (mg/kg)
0-0.5'	16.5

CS-2	
Depth (inches)	Concentration (mg/kg)
0-0.5'	10.1

CONCRETE SLAB DETAIL
NOT TO SCALE



LEGEND:

RW-1 CONCRETE SAMPLES COLLECTED WITH DRILL FROM RETAINING WALL BY GZA PERSONNEL ON APRIL 5, 2011

RW-3A CONCRETE SAMPLES COLLECTED WITH DRILL FROM RETAINING WALL BY GZA PERSONNEL ON APRIL 5, 2011 (ORIGINAL DEPTHS OF RW-1 THROUGH RW-4) WAS 1"

RW-3	
Depth (inches)	Concentration (mg/kg)
0-0.5'	4.58
0.5'-2'	3.93

RETAINING WALL DETAIL
NOT TO SCALE

NOTES:

1. CONCRETE SLAB AND RETAINING WALL FIGURES ARE DEVELOPED FROM FIELD SKETCHES BY GZA PERSONNEL TAKEN APRIL 5, 2011. DIMENSIONS SHOWN ARE APPROXIMATE ONLY.
2. THE LOCATION OF THE HAND AUGERS, BORING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY LINE OF SIGHT FROM EXISTING TOPOGRAPHIC FEATURES. THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
3. GZA JOB #43654.30 4-5-11 CONCRETE SAMPLING SKETCH BY GZA: ERIK BELOFF
4. PRESENTED CONCENTRATIONS REFLECT TOTAL PCB VALUES AT ONLY THOSE SAMPLE LOCATIONS WHICH EXCEEDED THE CLEANUP CRITERIA OF 1 MG/KG. FOR ADDITIONAL SAMPLE LOCATION RESULTS, REFER TO TABLES 1, 2, 3 AND 4.

NO.	ISSUE/DESCRIPTION	BY	DATE

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NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND
GAS REGULATOR STATION
CONCRETE SAMPLING LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: nationalgrid
PROJ MGR: MK DESIGNED BY: EB DATE: AUGUST 2011	CHECKED BY: MK DRAWN BY: CRB PROJECT NO.: 43654.30 REVISION NO.: 0
FIGURE 5 SHEET NO. 5 OF 5	

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APPENDIX A
LIMITATIONS

LIMITATIONS

1. This Remedial Alternative Evaluation 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 documenting the evaluation completed as described herein 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.
9. The costs on which the preliminary remediation estimates are based are limited to those conditions which were discovered in carrying out the assessment of subsurface impacts identified in this report. Actual quantities and unit costs will vary. While the preliminary estimates represent our best professional judgment in this matter, it does not represent an absolute worst-case remedial cost estimate.
10. Governmental agencies' interpretations, requirements, and enforcement policies vary from district office to district office, from state to state, and between federal and state agencies. In addition, statutes, rules, standards, and regulations may be legislatively changed and inter-agency and intra-agency policies may be changed from present practices. GZA has used its experience and judgment in making assumptions as to how anticipated changes in enforcement policies may affect remediation costs.
11. This report contains approximate cost estimates for purposes of evaluating alternative remedial programs. These estimates involve approximate quantity evaluations. A preliminary estimate of this nature is likely to vary substantially from Contractors' Bid Prices and is not to be considered the equivalent of nor as reliable as Contractors' Bid Prices. Prices for similar work undertaken in the future will be subject to general and sometimes erratic price increases.

APPENDIX B

SITE PHOTOGRAPHS



Photo 1: View looking towards south along retaining wall with metal riser pipe/valve assembly in foreground. Area of surface soil staining along base of retaining wall (area of disturbed leaf litter adjacent to riser). Soil samples (RB-E/SOIL-01 and GRSP-01)



Photo 2: Photograph of metal riser pipe/valve assembly.



Photo 3: View of GZA personnel sampling the concrete pad proximate to metal riser pipe/valve assembly. Note the discoloration/staining present on the concrete pad. Concrete sample (CS-3)



Photo 4: Photograph of GZA personnel decontaminating dedicated tools.

Appendix C: Site Photographs
Gas Regulator Station
Former Tidewater Facility
Pawtucket, Rhode Island

File No. 05.0043654.30
8/5/2011



Photo 5: View looking north of retaining wall sampling proximate to metal riser pipe/valve assembly. Concrete samples (RW-1 to RW-4)



Photo 6: Photograph of natural gas regulator buildings looking south.

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS

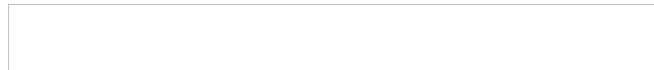


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.00)
ESS Laboratory Work Order Number: 1104259

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

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: 1104259

SAMPLE RECEIPT

The following samples were received on April 20, 2011 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.

These samples were originally received on hold on April 6, 2011.

Lab Number	SampleName	Matrix	Analysis
1104259-01	GRSP-9 0-3in	Soil	8082
1104259-02	GRSP-9 9-12in	Soil	8082
1104259-03	GRSP-10 0-3in	Soil	8082



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104259

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-9 0-3in
 Date Sampled: 04/06/11 14:07
 Percent Solids: 92
 Initial Volume: 20.4
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104259
 ESS Laboratory Sample ID: 1104259-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1221	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1232	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1242	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1248	0.254 (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1254	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1260	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1262	ND (0.0533)	10	1	04/22/11 20:58		CD12122
Aroclor 1268	ND (0.0533)	10	1	04/22/11 20:58		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	85 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	86 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	82 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-9 9-12in
Date Sampled: 04/06/11 14:08
Percent Solids: 94
Initial Volume: 20.3
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104259
ESS Laboratory Sample ID: 1104259-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1221	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1232	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1242	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1248	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1254	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1260	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1262	ND (0.0524)	10	1	04/22/11 21:16		CD12122
Aroclor 1268	ND (0.0524)	10	1	04/22/11 21:16		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	<i>58 %</i>		<i>30-150</i>
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>63 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>50 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>56 %</i>		<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-10 0-3in
 Date Sampled: 04/06/11 14:18
 Percent Solids: 93
 Initial Volume: 20.6
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104259
 ESS Laboratory Sample ID: 1104259-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1221	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1232	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1242	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1248	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1254	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1260	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1262	ND (0.0522)	10	1	04/22/11 21:35		CD12122
Aroclor 1268	ND (0.0522)	10	1	04/22/11 21:35		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	83 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	79 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	77 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	77 %		30-150

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104259

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD12122 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
<i>Surrogate: Decachlorobiphenyl</i>	0.0242		mg/kg wet	0.02500		97	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0239		mg/kg wet	0.02500		96	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0211		mg/kg wet	0.02500		84	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0230		mg/kg wet	0.02500		92	30-150			
LCS										
Aroclor 1016	0.483	0.0500	mg/kg wet	0.5000		97	40-140			
Aroclor 1260	0.481	0.0500	mg/kg wet	0.5000		96	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	0.0251		mg/kg wet	0.02500		100	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0245		mg/kg wet	0.02500		98	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0232		mg/kg wet	0.02500		93	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0240		mg/kg wet	0.02500		96	30-150			
LCS Dup										
Aroclor 1016	0.470	0.0500	mg/kg wet	0.5000		94	40-140	3	50	
Aroclor 1260	0.473	0.0500	mg/kg wet	0.5000		95	40-140	2	50	
<i>Surrogate: Decachlorobiphenyl</i>	0.0247		mg/kg wet	0.02500		99	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0241		mg/kg wet	0.02500		96	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0215		mg/kg wet	0.02500		86	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0219		mg/kg wet	0.02500		88	30-150			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104259

Notes and Definitions

- U Analyte included in the analysis, but not detected
- 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104259

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>

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 5 of 6 MK
 4/21/11

Turn Time _____ Standard _____ Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following:
 MA-MCP Navy USACE Other _____

Reporting Limits
 Electronic Deliverable Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other ___
 ESS LAB PROJECT ID
1104259

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	
										SW-Surface Water	DW-Drinking Water
1	4-6-11	1335	X		S	GRSP-7 9-12"		1	(Boda)		
2		1327	X		S	GRSP-7 21-24"		1	PCB's		Hold/Freeze
3		1344	X		S	GRSP-8 0-3"		1			
4		1347	X		S	GRSP-8 9-12"		1			
5		1350	X		S	GRSP-8 21-24"		1			
01		1407	X		S	GRSP-9 0-3"		1			
02		1408	X		S	GRSP-9 9-12"		1			
03		1410	X		S	GRSP-9 21-24"		1			
03		1408	X		S	GRSP-10 0-3"		1			
03		1421	X		S	GRSP-10 9-12"		1			

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 ___
 Seals Intact ___ Yes ___ No NA: ___ [] Pickup [] Technicians ___
 Cooler Temp: _____
 Sampled by: **WF/FMB**
 Comments: _____
 Preservation Code 1- NP, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____
 Relinquished by: (Signature) **[Signature]** Date/Time **4-6-11 1519**
 Received by: (Signature) **M** Date/Time **4-6-11 1517**
 Relinquished by: (Signature) _____ Date/Time _____
 Received by: (Signature) _____ Date/Time _____

Elizabeth Ouk

From: Margaret Kilpatrick [Margaret.Kilpatrick@gza.com]
Sent: Wednesday, April 20, 2011 11:06 AM
To: Elizabeth Ouk
Cc: Erik Beloff
Subject: WO 1104050
Follow Up Flag: Follow up
Flag Status: Completed

Hi Liz

GZA would like to release the following samples from the above-referenced WO for the Tidewater project (these samples were requested to be Held/Frozen)

GRSP-9 0-3 in
GRSP-9 9-12 in
GRSP-10 0-3 in

IF possible, please analyze these on a RUSH basis (let me know what the lab will do).

Also, Erik will be contacting you regarding additional sampling which we will be completing tomorrow in the field (if he has not done so already). These samples will also need to be submitted on a RUSH basis.

Please let me know if you have any questions.

thanks

Meg Kilpatrick, P.E.
GZA GeoEnvironmental, Inc.
Senior Project Manager
530 Broadway
Providence, Rhode Island 02909
Phone: 401.421.4140
Fax: 401.751.8613
Cell: 401.524.0576

This electronic message is intended to be viewed only by the individual or entity to which it is addressed and may contain privileged and/or confidential information intended for the exclusive use of the addressee(s). If you are not the intended recipient, please be aware that any disclosure, printing, copying, distribution or use of this information is prohibited. If you have received this message in error, please notify the sender immediately and destroy this message and its attachments from your system.

For information about GZA GeoEnvironmental, Inc. and its services, please visit our website at www.gza.com.

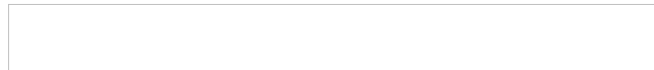


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.30)
ESS Laboratory Work Order Number: 1104254

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

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: 1104254

SAMPLE RECEIPT

The following samples were received on April 21, 2011 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>
1104254-01	GRSP-1 33-36in	Soil	8082
1104254-02	GRSP-1 45-48in	Soil	8082
1104254-03	GRSP-11 9-12in	Soil	8082
1104254-04	GRSP-12 9-12in	Soil	8082
1104254-05	GRSP-13 9-12in	Soil	8082
1104254-06	RW-3 2in	Solid	8082
1104254-07	RW-3A 1in	Solid	8082
1104254-08	RW-3B 1in	Solid	8082
1104254-09	RW-3C 1in	Solid	8082



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104254

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)

1104254-05 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

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: GRSP-1 33-36in
 Date Sampled: 04/21/11 09:55
 Percent Solids: 90
 Initial Volume: 19.7
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1221	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1232	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1242	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1248	0.209 (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1254	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1260	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1262	ND (0.0564)		1	04/22/11 17:31		CD12122
Aroclor 1268	ND (0.0564)		1	04/22/11 17:31		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	94 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	93 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	83 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	91 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-1 45-48in
 Date Sampled: 04/21/11 10:00
 Percent Solids: 88
 Initial Volume: 20.3
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1221	ND (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1232	ND (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1242	ND (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1248	0.585 (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1254	ND (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1260	0.0632 (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1262	ND (0.0560)		1	04/22/11 18:27		CD12122
Aroclor 1268	ND (0.0560)		1	04/22/11 18:27		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	90 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	91 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	89 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-11 9-12in
 Date Sampled: 04/21/11 09:05
 Percent Solids: 92
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1221	ND (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1232	ND (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1242	ND (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1248	4.14 (0.543)		10	04/25/11 13:43		CD12122
Aroclor 1254	ND (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1260	0.243 (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1262	ND (0.0543)		1	04/22/11 18:46		CD12122
Aroclor 1268	ND (0.0543)		1	04/22/11 18:46		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	80 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	76 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	79 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-12 9-12in
Date Sampled: 04/21/11 09:39
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104254
ESS Laboratory Sample ID: 1104254-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1221	ND (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1232	ND (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1242	ND (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1248	0.556 (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1254	ND (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1260	0.0799 (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1262	ND (0.0543)		1	04/22/11 19:05		CD12122
Aroclor 1268	ND (0.0543)		1	04/22/11 19:05		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	<i>94 %</i>		<i>30-150</i>
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>89 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>85 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>93 %</i>		<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-13 9-12in
 Date Sampled: 04/21/11 09:22
 Percent Solids: 92
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-05
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1221	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1232	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1242	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1248	12.4 (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1254	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1260	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1262	ND (1.09)		20	04/25/11 14:48		CD12122
Aroclor 1268	ND (1.09)		20	04/25/11 14:48		CD12122

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: RW-3 2in
Date Sampled: 04/21/11 11:10
Percent Solids: 95
Initial Volume: 10.4
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104254
ESS Laboratory Sample ID: 1104254-06
Sample Matrix: Solid
Units: mg/kg dry
Analyst: ML
Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1221	ND (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1232	ND (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1242	ND (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1248	3.71 (0.506)		5	04/25/11 14:21		CD12122
Aroclor 1254	ND (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1260	0.218 (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1262	ND (0.101)		1	04/22/11 19:42		CD12122
Aroclor 1268	ND (0.101)		1	04/22/11 19:42		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	82 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	73 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	76 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: RW-3A 1in
 Date Sampled: 04/21/11 10:55
 Percent Solids: 97
 Initial Volume: 10.3
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-07
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1221	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1232	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1242	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1248	0.190 (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1254	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1260	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1262	ND (0.100)		1	04/22/11 20:01		CD12122
Aroclor 1268	ND (0.100)		1	04/22/11 20:01		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	82 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	72 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	77 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: RW-3B 1in
 Date Sampled: 04/21/11 10:33
 Percent Solids: 97
 Initial Volume: 10.4
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-08
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1221	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1232	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1242	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1248	0.566 (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1254	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1260	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1262	ND (0.0991)		1	04/22/11 20:20		CD12122
Aroclor 1268	ND (0.0991)		1	04/22/11 20:20		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	56 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	55 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	47 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	48 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: RW-3C 1in
 Date Sampled: 04/21/11 11:25
 Percent Solids: 96
 Initial Volume: 10.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104254
 ESS Laboratory Sample ID: 1104254-09
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/21/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1221	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1232	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1242	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1248	0.673 (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1254	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1260	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1262	ND (0.103)		1	04/22/11 20:39		CD12122
Aroclor 1268	ND (0.103)		1	04/22/11 20:39		CD12122

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	78 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	77 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	70 %		30-150



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104254

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD12122 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0242		mg/kg wet	0.02500		97	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0239		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0211		mg/kg wet	0.02500		84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0230		mg/kg wet	0.02500		92	30-150			
LCS										
Aroclor 1016	0.483	0.0500	mg/kg wet	0.5000		97	40-140			
Aroclor 1260	0.481	0.0500	mg/kg wet	0.5000		96	40-140			
Surrogate: Decachlorobiphenyl	0.0251		mg/kg wet	0.02500		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0245		mg/kg wet	0.02500		98	30-150			
Surrogate: Tetrachloro-m-xylene	0.0232		mg/kg wet	0.02500		93	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0240		mg/kg wet	0.02500		96	30-150			
LCS Dup										
Aroclor 1016	0.470	0.0500	mg/kg wet	0.5000		94	40-140	3	50	
Aroclor 1260	0.473	0.0500	mg/kg wet	0.5000		95	40-140	2	50	
Surrogate: Decachlorobiphenyl	0.0247		mg/kg wet	0.02500		99	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0241		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0215		mg/kg wet	0.02500		86	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0219		mg/kg wet	0.02500		88	30-150			
Matrix Spike Source: 1104254-01										
Aroclor 1016	0.578	0.0564	mg/kg dry	0.5640	ND	102	40-140			
Aroclor 1260	0.570	0.0564	mg/kg dry	0.5640	0.0356	95	40-140			
Surrogate: Decachlorobiphenyl	0.0271		mg/kg dry	0.02820		96	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0314		mg/kg dry	0.02820		112	30-150			
Surrogate: Tetrachloro-m-xylene	0.0259		mg/kg dry	0.02820		92	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0258		mg/kg dry	0.02820		91	30-150			
Matrix Spike Dup Source: 1104254-01										
Aroclor 1016	0.595	0.0564	mg/kg dry	0.5640	ND	106	40-140	3	50	
Aroclor 1260	0.570	0.0564	mg/kg dry	0.5640	0.0356	95	40-140	0.06	50	
Surrogate: Decachlorobiphenyl	0.0276		mg/kg dry	0.02820		98	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0266		mg/kg dry	0.02820		94	30-150			
Surrogate: Tetrachloro-m-xylene	0.0258		mg/kg dry	0.02820		91	30-150			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104254

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082 Polychlorinated Biphenyls (PCB)

Batch CD12122 - 3540

<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0258		mg/kg dry	0.02820		92	30-150			
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CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1104254

Notes and Definitions

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104254

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>

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 3

Turn Time _____ Standard _____ Other Asst Phh
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE _____ Navy _____
 MA-MCP _____

Reporting Limits _____
 Electronic Deliverable Yes No _____
 Format: Excel Access _____ PDF Other _____
 ESS LAB PROJECT ID 1104254

Co. Name	Project #	Project Name (20 Char. or less)	Number of Containers	Type of Containers	Write Required Analysis
GZA	43654.30	Tidewater - GRS	1	6	
461-421-4140	530 Broadway	10#	1	6	
Meg Kilpatrick	State RI	Email Address <u>M.Kilpatrick@gza.com</u>	1	6	
City Providence	Zip 02909	Sample Identification (20 Char. or less)	1	6	
Telephone #	Fax #	MATRIX	1	6	
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	
01	4-21-11	0955	X	S	GRSP-1 33-36"
02		1000	X	S	GRSP-1 45-48"
03		0905	X	S	GRSP-11 9-12"
		0908	X	S	GRSP-11 21-24"
		0912	X	S	GRSP-11 33-36"
04		0939	X	S	GRSP-12 9-12"
		0942	X	S	GRSP-12 21-24"
		0946	X	S	GRSP-12 33-36"
		0922	X	S	GRSP-13 9-12"
05		0925	X	S	GRSP-13 21-24"

Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge VW-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
 Cooler Temp 2.6 [] Technicians _____

Preservation Code 1- NR, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: ENB/WF
 Comments: "C" = Concrete

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<u>[Signature]</u>	4-21-11 12:13	<u>[Signature]</u>	4/21/11 12:13
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

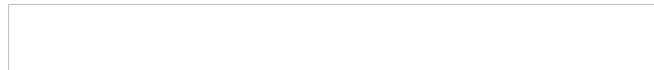


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.00)
ESS Laboratory Work Order Number: 1104198

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

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: 1104198

SAMPLE RECEIPT

The following samples were received on April 15, 2011 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.

These samples were originally received on hold on April 5, 2011.

Lab Number	SampleName	Matrix	Analysis
1104198-01	CS-4	Solid	8082
1104198-02	CS-5	Solid	8082
1104198-03	CS-6	Solid	8082



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104198

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: CS-4
 Date Sampled: 04/15/11 10:00
 Percent Solids: 94
 Initial Volume: 10.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104198
 ESS Laboratory Sample ID: 1104198-01
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/19/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1221	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1232	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1242	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1248	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1254	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1260	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1262	ND (0.105)		1	04/20/11 18:01		CD11920
Aroclor 1268	ND (0.105)		1	04/20/11 18:01		CD11920

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	70 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	61 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	60 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	64 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: CS-5
 Date Sampled: 04/15/11 09:55
 Percent Solids: 94
 Initial Volume: 10.5
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104198
 ESS Laboratory Sample ID: 1104198-02
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/19/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1221	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1232	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1242	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1248	0.162 (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1254	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1260	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1262	ND (0.101)		1	04/20/11 18:20		CD11920
Aroclor 1268	ND (0.101)		1	04/20/11 18:20		CD11920

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	80 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	74 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	74 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	77 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: CS-6
Date Sampled: 04/15/11 09:57
Percent Solids: 97
Initial Volume: 10.3
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104198
ESS Laboratory Sample ID: 1104198-03
Sample Matrix: Solid
Units: mg/kg dry
Analyst: ML
Prepared: 4/19/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1221	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1232	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1242	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1248	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1254	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1260	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1262	ND (0.100)		1	04/20/11 18:39		CD11920
Aroclor 1268	ND (0.100)		1	04/20/11 18:39		CD11920

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	83 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	75 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	78 %		30-150



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104198

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD11920 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0225		mg/kg wet	0.02500		90	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0214		mg/kg wet	0.02500		86	30-150			
Surrogate: Tetrachloro-m-xylene	0.0212		mg/kg wet	0.02500		85	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0225		mg/kg wet	0.02500		90	30-150			
LCS										
Aroclor 1016	0.458	0.0500	mg/kg wet	0.5000		92	40-140			
Aroclor 1260	0.480	0.0500	mg/kg wet	0.5000		96	40-140			
Surrogate: Decachlorobiphenyl	0.0236		mg/kg wet	0.02500		94	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0223		mg/kg wet	0.02500		89	30-150			
Surrogate: Tetrachloro-m-xylene	0.0229		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0231		mg/kg wet	0.02500		92	30-150			
LCS Dup										
Aroclor 1016	0.446	0.0500	mg/kg wet	0.5000		89	40-140	3	50	
Aroclor 1260	0.453	0.0500	mg/kg wet	0.5000		91	40-140	6	50	
Surrogate: Decachlorobiphenyl	0.0231		mg/kg wet	0.02500		93	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0220		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0220		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0221		mg/kg wet	0.02500		89	30-150			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1104198

Notes and Definitions

- U Analyte included in the analysis, but not detected
- 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104198

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>

Elizabeth Ouk

From: Margaret Kilpatrick [Margaret.Kilpatrick@gza.com]
Sent: Friday, April 15, 2011 10:39 AM
To: Elizabeth Ouk
Cc: Erik Beloff
Subject: Sample Release
Importance: High
Follow Up Flag: Follow up
Flag Status: Completed

Hi Liz

Please release samples CS-4, CS-5 and CS-6 from WO 1104021.

Any questions, please let me know.

thanks

Meg Kilpatrick, P.E.
GZA GeoEnvironmental, Inc.
Senior Project Manager
530 Broadway
Providence, Rhode Island 02909
Phone: 401.421.4140
Fax: 401.751.8613
Cell: 401.524.0576

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For information about GZA GeoEnvironmental, Inc. and its services, please visit our website at www.gza.com.

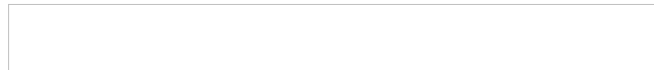


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.00)
ESS Laboratory Work Order Number: 1104186

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

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: 1104186

SAMPLE RECEIPT

The following samples were received on April 13, 2011 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.

These samples were originally received on April 5, 2011 and April 6, 2011.

Lab Number	SampleName	Matrix	Analysis
1104186-01	GRS-114 0-3	Soil	8100M
1104186-02	GRS-114 9-12	Soil	8082, 8100M
1104186-03	GRSP-2 0-3	Soil	8100M
1104186-04	GRSP-2 9-12	Soil	8100M
1104186-05	GRSP-3 0-3	Soil	8100M
1104186-06	GRSP-5 0-3	Soil	8100M
1104186-07	GRSP-5 9-12	Soil	8100M
1104186-08	GRSP-1 0-3	Soil	8100M
1104186-09	GRSP-1 9-12	Soil	8100M
1104186-10	GRSP-1 21-24	Soil	8100M



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104186

PROJECT NARRATIVE

8100M Total Petroleum Hydrocarbons

- 1104186-05 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)
O-Terphenyl (% @ 40-140%)
- 1104186-06 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)
O-Terphenyl (% @ 40-140%)
- 1104186-07 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)
O-Terphenyl (% @ 40-140%)
- 1104186-08 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)
O-Terphenyl (% @ 40-140%)
- 1104186-09 [Surrogate recovery\(ies\) diluted below the MRL \(SD\).](#)
O-Terphenyl (% @ 40-140%)

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: GRS-114 0-3
Date Sampled: 04/05/11 13:24
Percent Solids: 81
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104186
ESS Laboratory Sample ID: 1104186-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	1720 (461)	2500	10	04/20/11 18:34	CUD0144	CD11507
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>		
<i>Surrogate: O-Terphenyl</i>		74 %		40-140		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-114 9-12
 Date Sampled: 04/05/11 13:27
 Percent Solids: 91
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104186
 ESS Laboratory Sample ID: 1104186-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/19/11 18:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1221	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1232	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1242	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1248	3.78 (0.275)	10	5	04/21/11 12:01		CD11920
Aroclor 1254	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1260	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1262	ND (0.0549)	10	1	04/20/11 17:05		CD11920
Aroclor 1268	ND (0.0549)	10	1	04/20/11 17:05		CD11920

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	78 %		30-150
Surrogate: Decachlorobiphenyl [2C]	76 %		30-150
Surrogate: Tetrachloro-m-xylene	75 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	75 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-114 9-12
 Date Sampled: 04/05/11 13:27
 Percent Solids: 91
 Initial Volume: 20.6
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104186
 ESS Laboratory Sample ID: 1104186-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	1540 (400)	2500	10	04/20/11 19:09	CUD0144	CD11507
		<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: GRSP-2 0-3
Date Sampled: 04/05/11 09:06
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104186
ESS Laboratory Sample ID: 1104186-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	686 (407)	2500	10	04/20/11 19:44	CUD0144	CD11507
	<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: GRSP-2 9-12
 Date Sampled: 04/05/11 09:09
 Percent Solids: 93
 Initial Volume: 19.9
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104186
 ESS Laboratory Sample ID: 1104186-04
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	92.1 (40.5)	2500	1	04/20/11 20:18	CUD0144	CD11507
	<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: GRSP-3 0-3
 Date Sampled: 04/05/11 09:20
 Percent Solids: 98
 Initial Volume: 20.4
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104186
 ESS Laboratory Sample ID: 1104186-05
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	5770 (750)	2500	20	04/20/11 20:53	CUD0144	CD11507
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>%</i>	<i>SD</i>	<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-5 0-3
Date Sampled: 04/05/11 12:56
Percent Solids: 90
Initial Volume: 20.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104186
ESS Laboratory Sample ID: 1104186-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	6500 (817)	2500	20	04/20/11 21:28	CUD0144	CD11507
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>%</i>	<i>SD</i>	<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-5 9-12
Date Sampled: 04/05/11 12:58
Percent Solids: 93
Initial Volume: 20.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104186
ESS Laboratory Sample ID: 1104186-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	3390 (795)	2500	20	04/20/11 22:02	CUD0144	CD11507
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>%</i>	<i>SD</i>	<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-1 0-3
Date Sampled: 04/06/11 14:32
Percent Solids: 65
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1104186
ESS Laboratory Sample ID: 1104186-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	123000 (5890)	2500	20	04/20/11 22:37	CUD0144	CD11507
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>		
<i>Surrogate: O-Terphenyl</i>		<i>%</i>	<i>SD</i>	<i>40-140</i>		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-1 9-12
Date Sampled: 04/06/11 14:35
Percent Solids: 86
Initial Volume: 20.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104186
ESS Laboratory Sample ID: 1104186-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/15/11 14:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	6850 (851)	2500	20	04/20/11 23:12	CUD0144	CD11507
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>%</i>	<i>SD</i>	<i>40-140</i>			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-1 21-24
 Date Sampled: 04/06/11 14:38
 Percent Solids: 89
 Initial Volume: 20.1
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104186
 ESS Laboratory Sample ID: 1104186-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/15/11 17:25

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	3370 (210)	2500	5	04/18/11 20:27	CUD0120	CD11516
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>		
<i>Surrogate: O-Terphenyl</i>		92 %		40-140		

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104186

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD11920 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
<i>Surrogate: Decachlorobiphenyl</i>	0.0225		mg/kg wet	0.02500		90	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0214		mg/kg wet	0.02500		86	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0212		mg/kg wet	0.02500		85	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0225		mg/kg wet	0.02500		90	30-150			
LCS										
Aroclor 1016	0.458	0.0500	mg/kg wet	0.5000		92	40-140			
Aroclor 1260	0.480	0.0500	mg/kg wet	0.5000		96	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	0.0236		mg/kg wet	0.02500		94	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0223		mg/kg wet	0.02500		89	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0229		mg/kg wet	0.02500		92	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0231		mg/kg wet	0.02500		92	30-150			
LCS Dup										
Aroclor 1016	0.446	0.0500	mg/kg wet	0.5000		89	40-140	3	50	
Aroclor 1260	0.453	0.0500	mg/kg wet	0.5000		91	40-140	6	50	
<i>Surrogate: Decachlorobiphenyl</i>	0.0231		mg/kg wet	0.02500		93	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0220		mg/kg wet	0.02500		88	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0220		mg/kg wet	0.02500		88	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0221		mg/kg wet	0.02500		89	30-150			
Matrix Spike Source: 1104186-02										
Aroclor 1016	0.581	0.0547	mg/kg dry	0.5467	ND	106	40-140			
Aroclor 1260	0.590	0.0547	mg/kg dry	0.5467	ND	108	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	0.0205		mg/kg dry	0.02734		75	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0212		mg/kg dry	0.02734		78	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0213		mg/kg dry	0.02734		78	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0198		mg/kg dry	0.02734		72	30-150			
Matrix Spike Dup Source: 1104186-02										
Aroclor 1016	0.568	0.0544	mg/kg dry	0.5440	ND	104	40-140	2	50	
Aroclor 1260	0.595	0.0544	mg/kg dry	0.5440	ND	109	40-140	1	50	
<i>Surrogate: Decachlorobiphenyl</i>	0.0198		mg/kg dry	0.02720		73	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0195		mg/kg dry	0.02720		72	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0213		mg/kg dry	0.02720		78	30-150			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104186

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082 Polychlorinated Biphenyls (PCB)

Batch CD11920 - 3540

Surrogate: Tetrachloro-m-xylene [2C] 0.0198 mg/kg dry 0.02720 73 30-150

8100M Total Petroleum Hydrocarbons

Batch CD11507 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet
Docosane (C22)	ND	0.2	mg/kg wet
Dodecane (C12)	ND	0.2	mg/kg wet
Eicosane (C20)	ND	0.2	mg/kg wet
Hexacosane (C26)	ND	0.2	mg/kg wet
Hexadecane (C16)	ND	0.2	mg/kg wet
Nonadecane (C19)	ND	0.2	mg/kg wet
Nonane (C9)	ND	0.2	mg/kg wet
Octacosane (C28)	ND	0.2	mg/kg wet
Octadecane (C18)	ND	0.2	mg/kg wet
Tetracosane (C24)	ND	0.2	mg/kg wet
Tetradecane (C14)	ND	0.2	mg/kg wet
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet
Triacontane (C30)	ND	0.2	mg/kg wet

Surrogate: O-Terphenyl 4.57 mg/kg wet 5.000 91 40-140

LCS

Decane (C10)	2.2	0.2	mg/kg wet	2.500	88	40-140
Docosane (C22)	2.9	0.2	mg/kg wet	2.500	115	40-140
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500	101	40-140
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500	114	40-140
Hexacosane (C26)	2.9	0.2	mg/kg wet	2.500	118	40-140
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500	108	40-140
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500	105	40-140
Nonane (C9)	1.8	0.2	mg/kg wet	2.500	73	30-140
Octacosane (C28)	3.1	0.2	mg/kg wet	2.500	122	40-140
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500	110	40-140
Tetracosane (C24)	2.9	0.2	mg/kg wet	2.500	116	40-140
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500	104	40-140
Total Petroleum Hydrocarbons	41.0	37.5	mg/kg wet	35.00	117	40-140
Triacontane (C30)	3.2	0.2	mg/kg wet	2.500	129	40-140

Surrogate: O-Terphenyl 4.43 mg/kg wet 5.000 89 40-140

LCS Dup

Decane (C10)	2.2	0.2	mg/kg wet	2.500	87	40-140	1	50
Docosane (C22)	2.9	0.2	mg/kg wet	2.500	117	40-140	1	50
Dodecane (C12)	2.5	0.2	mg/kg wet	2.500	100	40-140	0.9	50
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500	115	40-140	1	50
Hexacosane (C26)	3.0	0.2	mg/kg wet	2.500	119	40-140	1	50

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104186

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CD11507 - 3546										
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		109	40-140	0.7	50	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		106	40-140	0.8	50	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		72	30-140	2	50	
Octacosane (C28)	3.1	0.2	mg/kg wet	2.500		123	40-140	1	50	
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		112	40-140	1	50	
Tetracosane (C24)	2.9	0.2	mg/kg wet	2.500		117	40-140	1	50	
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		104	40-140	0.2	50	
Total Petroleum Hydrocarbons	41.2	37.5	mg/kg wet	35.00		118	40-140	0.4	50	
Triacontane (C30)	3.3	0.2	mg/kg wet	2.500		131	40-140	0.9	50	
<i>Surrogate: O-Terphenyl</i>	<i>4.51</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>90</i>	<i>40-140</i>			
Batch CD11516 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
<i>Surrogate: O-Terphenyl</i>	<i>4.74</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>95</i>	<i>40-140</i>			
LCS										
Decane (C10)	2.0	0.2	mg/kg wet	2.500		81	40-140			
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Dodecane (C12)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Total Petroleum Hydrocarbons	29.3	37.5	mg/kg wet	35.00		84	40-140			
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104186

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CD11516 - 3546

<i>Surrogate: O-Terphenyl</i>	3.88		mg/kg wet	5.000		78	40-140			
LCS Dup										
Decane (C10)	2.3	0.2	mg/kg wet	2.500		92	40-140	13	50	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		104	40-140	16	50	
Dodecane (C12)	2.6	0.2	mg/kg wet	2.500		102	40-140	13	50	
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		107	40-140	16	50	
Hexacosane (C26)	2.7	0.2	mg/kg wet	2.500		108	40-140	16	50	
Hexadecane (C16)	2.6	0.2	mg/kg wet	2.500		105	40-140	14	50	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		105	40-140	16	50	
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		76	30-140	14	50	
Octacosane (C28)	2.7	0.2	mg/kg wet	2.500		110	40-140	17	50	
Octadecane (C18)	2.7	0.2	mg/kg wet	2.500		106	40-140	15	50	
Tetracosane (C24)	2.7	0.2	mg/kg wet	2.500		108	40-140	16	50	
Tetradecane (C14)	2.6	0.2	mg/kg wet	2.500		103	40-140	13	50	
Total Petroleum Hydrocarbons	34.0	37.5	mg/kg wet	35.00		97	40-140	15	50	
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		113	40-140	17	50	

<i>Surrogate: O-Terphenyl</i>	4.66		mg/kg wet	5.000		93	40-140			
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CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1104186

Notes and Definitions

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104186

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>

Elizabeth Ouk

From: Erik Beloff [Erik.Beloff@gza.com]
Sent: Wednesday, April 13, 2011 12:33 PM
To: Elizabeth Ouk
Subject: Additional TPH Analysis

Hi Liz,

A few changes to the additional TPH analysis. Please only run the eight highlighted locations below from the list that I had previously sent you for TPH analysis:

✕ GRSP-1 0-3"
✕ GRSP-1 9-12"
✕ GRSP-1 21-24"
✕ GRSP-2 0-3"
✕ GRSP-2 9-12"
✕ GRSP-3 0-3"
GRSP-3 9-12"
GRSP-4 0-3"
GRSP-4 9-12"
✕ GRSP-5 0-3"
✕ GRSP-5 9-12"

Also, ~~GRS-14~~ (0-3") can that be analyzed for TPH as well.

Also, please release from HOLD ~~GRS-14~~ (9-12") and analyze for PCB's and TPH.

Let me know if this can be done.

Thanks, Erik

Erik M. Beloff
GZA GeoEnvironmental, Inc.
530 Broadway
Providence, RI 02909
O: 401.427.2723
C: 401.230.8747
www.gza.com

 Please consider the environment before printing this e-mail

This electronic message is intended to be viewed only by the individual or entity to which it is addressed and may contain privileged and/or confidential information intended for the exclusive use of the addressee(s). If you are not the intended recipient, please be aware that any disclosure, printing, copying, distribution or use of this information is prohibited. If you have received this message in error, please notify the sender immediately and destroy this message and its attachments from your system.

For information about GZA GeoEnvironmental, Inc. and its services, please visit our website at www.gza.com.

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc.
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11040186
Date Project Due: 4/21/11
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: Icepacks
- 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? 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	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP
3	Yes	4 oz Soil Jar	1	NP
4	Yes	4 oz Soil Jar	1	NP
5	Yes	4 oz Soil Jar	1	NP
6	Yes	4 oz Soil Jar	1	NP
7	Yes	4 oz Soil Jar	1	NP
8	Yes	4 oz Soil Jar	1	NP
9	Yes	4 oz Soil Jar	1	NP
10	Yes	4 oz Soil Jar	1	NP

Completed By: mk

Reviewed By: _____

Date/Time: 4/14/11

Date/Time: 4/14/11

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

1104186 Page 3 of 5
 4/14/11

Turn Time: Standard () Other ()
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy USACE Other _____

Reporting Limits: ESS LAB PROJECT ID: 1104021
 Electronic Deliverable: Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other ___

Co. Name	Project #	Project Name (20 Char. or less)	Type of Containers	Number of Containers	Type of Containers	Write Required Analysis	
GZA							
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Res Code
114	4-5-11	1305	X	S	S	GRS-12 9-12"	1
115		1309	X	S	S	GRS-13 0-3"	1
116		1310	X	S	S	GRS-13 9-12"	1
117		1313	X	S	S	GRS-13 1'	4
118		1324	X	S	S	GRS-14 0-3"	1
119		1327	X	S	S	GRS-14 9-12"	1
		1330	X	S	S	GRS-15 0-3"	1
		1335	X	S	S	GRS-15 9-12"	1
		1340	X	S	S	GRS-15 1.5'	4
		1344	X	S	S	GRS-16 0-3"	1

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 ___
 Seals Intact: Yes ___ No NA: ___
 Cooler Temp: 5.2

Relinquished by: (Signature) 4-5-11 1447 Date/Time
 Relinquished by: (Signature) 4-5-11 1447 Date/Time
 Received by: (Signature) J. Davis Date/Time
 Received by: (Signature) J. Davis Date/Time

Comments: Metals (Pb, Cd, Cr - Total, Cu, TCLP)
 ED 4/14/11

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 5
mk
4/14/11

Turn Time _____ Standard _____ Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy _____

Reporting Limits _____
 ESS LAB PROJECT ID 1104050
 Electronic Deliverable Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other _____

Co. Name	Project #	Project Name (20 Char. or less)	Number of Containers	Type of Containers	Write Required Analysis		
GLA							
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pr Code
07	4-6-11	0808	X	X	S	GRS-24 0-3"	X
08	0810	0810	X	X	S	GRS-24 9-12"	X
08	0815	0815	X	X	S	GRS-25 0-3"	X
09	0817	0817	X	X	S	GRS-25 9-12"	X
10	0820	0820	X	X	S	GRS-25 1-5'	X
11	0825	0825	X	X	S	GRS-BD-040611-1.5'	X
12	0840	0840	X	X	S	GRS-26	X
13	0845	0845	X	X	S	GRS-26	X
	0900		X	X	S	GRS-BD-040611-0-3"	X
	0906		X	X	S	GRSP-A 0-3'	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 Pickups Technicians

Seals Intact Yes No NA Pickups Technicians

Cooler Temp: 2.3 ice

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

Sampled by: WF/MB EO 4/14/11
 Comments: _____

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<u>[Signature]</u>	<u>4-6-11 1519</u>	<u>[Signature]</u>	<u>4-14-11 1519</u>
<u>[Signature]</u>	<u>4-6-11 1519</u>	<u>[Signature]</u>	<u>4-14-11 1519</u>

03

ESS Laboratory

Division of Thielsch Engineering, Inc.

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CHAIN OF CUSTODY

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 11/14/11

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: USACE Other _____
 Navy _____

ESS LAB PROJECT ID: 1104186
 Reporting Limits: _____
 Electronic Deliverable: Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other ___

Co Name: G2A Geo Environmental Int'l
 Contact Person: Mrs. Kilpatrick
 City: Providence State: RI
 Project # 436540 Project Name: Tide water GRS
 Address: 530 Broadway
 Zip: 02907 PO#
 Email Address: MKILPATRICK@G2A.COM

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Req Code	Number of Containers	Type of Containers	Write Required Analysis
14	0909		X	S	S	GRSP-2 9-12"		1	G	
15	0911		X	S	S	GRSP-2 21-24"		1	G	
16	0923		X	S	S	GRSP-3 9-12"		1	G	
17	0926		X	S	S	GRSP-3 21-24"		1	G	
18	1013		X	S	S	GRSP-4 0-3"		1	G	
19	1017		X	S	S	GRSP-4 9-12"		1	G	
20	1019		X	S	S	GRSP-4 21-24"		1	G	
21	1045		X	S	S	GRS-3 0-3"		1	G	
22	1050		X	S	S	GRS-3 9-12"		1	G	

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: X () Pickup () Technicians ___
 Seals Intact: Yes ___ No NA: X ()
 Cooler Temp: 2.3 iga
 Sampled by: WF/EAB
 Comments: ED 4/14/11
 Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAc, 9-
 Relinquished by: (Signature) Date/Time 4/6/11 1779 Received by: (Signature) Date/Time
 Relinquished by: (Signature) Date/Time 4/6/11 1519 Received by: (Signature) Date/Time

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CHAIN OF CUSTODY 1104186 Page 4 of 6 mk

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 subject for any of the following: USACE Other _____
 MA-MCP Navy _____

Reporting Limits
 ESS LAB PROJECT ID #104050

Electronic Deliverable Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other ___

ESS LAB Sample #	Date	Collection Time	COM	GRS	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	Write Required Analysis
2041611	115	1145	X	X	S	GRS-3 36"	4GM	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
211		1145	X	X	S	GRS-2 0-3"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
21		1150	X	X	S	GRS-2 9"-12"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
22		1256	X	X	S	GRSP-5 0-3"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
23		1258	X	X	S	GRSP-5 9-12"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
24		1300	X	X	S	GRSP-5 21-24"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
25		1320	X	X	S	GRSP-6 0-3"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
26		1323	X	X	S	GRSP-6 9-12"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
27		1325	X	X	S	GRSP-6 21-24"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *
28		1332	X	X	S	GRSP-7 0-3"	1	1	PCRF *	Metals (Asst) * TOC * PHH * VOC * TPH *

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 ___
 Seals Intact ___ Yes ___ No NA: Pickup
 Cooler Temp: 2.3 °C Technicians _____

Internal Use Only
 Received by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) _____ Date/Time _____

Preservation Code 1-NP, 2-HCl, 3-H₂SO₄, 4-HNO₃, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by: WF/ENB
 Comments: Metals (Pb, Cd, Cu) - Total and TPA

Received by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) _____ Date/Time _____

06
07

*By circling MA-MCP, client acknowledges samples were collected in accordance with MATREP CAM VII A
 Please fax all changes to Chain of Custody in writing.
 1 (White) Lab Copy 2 (Yellow) Client Receipt 10/28/04A

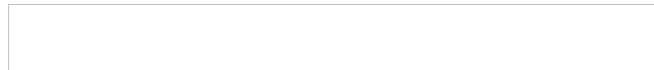


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.0)
ESS Laboratory Work Order Number: 1104085

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

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: 1104085

SAMPLE RECEIPT

The following samples were received on April 07, 2011 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 April 18, 2011: Client Sample ID for 1104085-01 through -02 has been revised.

Lab Number	SampleName	Matrix	Analysis
1104085-01	GRS-1 0-3in	Soil	1311/6010B, 6010B, 8082
1104085-02	GRS-1 3ft	Soil	§, 6010B, 8100M, 8260B, 8270C, 9014

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

CD11113-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Bromomethane (137% @ 70-130%)

CD11113-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

Bromomethane (135% @ 70-130%)

8270C Polynuclear Aromatic Hydrocarbons

CUD0034-CCV1 [Calibration required quadratic regression \(Q\).](#)

Benzo(b)fluoranthene (101% @ 70-130%), Dibenzo(a,h)Anthracene (99% @ 70-130%),
Indeno(1,2,3-cd)Pyrene (97% @ 70-130%)

CUD0044-CCV1 [Calibration required quadratic regression \(Q\).](#)

Benzo(b)fluoranthene (100% @ 70-130%), Dibenzo(a,h)Anthracene (95% @ 70-130%),
Indeno(1,2,3-cd)Pyrene (92% @ 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
Client Sample ID: GRS-1 0-3in
Date Sampled: 04/07/11 11:00
Percent Solids: 91

ESS Laboratory Work Order: 1104085
ESS Laboratory Sample ID: 1104085-01
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/7/11 17:27

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	JP	04/11/11 17:16	5	50	CD10802
Chromium	ND (0.200)	1311/6010B	5	1	JP	04/11/11 17:16	5	50	CD10802
Lead	ND (0.200)	1311/6010B	5	1	JP	04/11/11 17:16	5	50	CD10802



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-1 0-3in
Date Sampled: 04/07/11 11:00
Percent Solids: 91

ESS Laboratory Work Order: 1104085
ESS Laboratory Sample ID: 1104085-01
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.54)	6010B	1000	1	SVD	04/07/11 19:41	2.04	100	CD10725	
Chromium	6.5 (1.1)	6010B	10000	1	SVD	04/07/11 19:41	2.04	100	CD10725	
Lead	48.6 (5.4)	6010B	500	1	SVD	04/07/11 19:41	2.04	100	CD10725	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-1 0-3in
 Date Sampled: 04/07/11 11:00
 Percent Solids: 91
 Initial Volume: 19.9
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104085
 ESS Laboratory Sample ID: 1104085-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/7/11 16:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1221	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1232	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1242	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1248	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1254	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1260	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1262	ND (0.0552)	10	1	04/08/11 10:37		CD10619
Aroclor 1268	ND (0.0552)	10	1	04/08/11 10:37		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	80 %		30-150
Surrogate: Decachlorobiphenyl [2C]	81 %		30-150
Surrogate: Tetrachloro-m-xylene	85 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-1 3ft
 Date Sampled: 04/07/11 11:40
 Percent Solids: 94

ESS Laboratory Work Order: 1104085
 ESS Laboratory Sample ID: 1104085-02
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	21.4 (2.2)	6010B	7	1	SVD	04/07/11 20:03	2.37	100	CD10725	
Lead	39.5 (4.5)	6010B	500	1	SVD	04/07/11 20:03	2.37	100	CD10725	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-1 3ft
 Date Sampled: 04/07/11 11:40
 Percent Solids: 94
 Initial Volume: 26.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104085
 ESS Laboratory Sample ID: 1104085-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0657)	0.0057	220	1	04/11/11 13:26	CUD0061	CD11113
1,1,1-Trichloroethane	ND (0.0329)	0.0058	10000	1	04/11/11 13:26	CUD0061	CD11113
1,1,2,2-Tetrachloroethane	ND (0.0329)	0.0089	29	1	04/11/11 13:26	CUD0061	CD11113
1,1,2-Trichloroethane	ND (0.0329)	0.0082	100	1	04/11/11 13:26	CUD0061	CD11113
1,1-Dichloroethane	ND (0.0329)	0.0053	10000	1	04/11/11 13:26	CUD0061	CD11113
1,1-Dichloroethene	ND (0.0329)	0.0081	9.5	1	04/11/11 13:26	CUD0061	CD11113
1,1-Dichloropropene	ND (0.0329)	0.0051		1	04/11/11 13:26	CUD0061	CD11113
1,2,3-Trichlorobenzene	ND (0.0329)	0.0110		1	04/11/11 13:26	CUD0061	CD11113
1,2,3-Trichloropropane	ND (0.0329)	0.0081		1	04/11/11 13:26	CUD0061	CD11113
1,2,4-Trichlorobenzene	ND (0.0329)	0.0072	10000	1	04/11/11 13:26	CUD0061	CD11113
1,2,4-Trimethylbenzene	ND (0.0329)	0.0063		1	04/11/11 13:26	CUD0061	CD11113
1,2-Dibromo-3-Chloropropane	ND (0.197)	0.0657	4.1	1	04/11/11 13:26	CUD0061	CD11113
1,2-Dibromoethane	ND (0.0329)	0.0083	0.07	1	04/11/11 13:26	CUD0061	CD11113
1,2-Dichlorobenzene	ND (0.0329)	0.0047	10000	1	04/11/11 13:26	CUD0061	CD11113
1,2-Dichloroethane	ND (0.0329)	0.0088	63	1	04/11/11 13:26	CUD0061	CD11113
1,2-Dichloropropane	ND (0.0329)	0.0086	84	1	04/11/11 13:26	CUD0061	CD11113
1,3,5-Trimethylbenzene	ND (0.0329)	0.0058		1	04/11/11 13:26	CUD0061	CD11113
1,3-Dichlorobenzene	ND (0.0329)	0.0041	10000	1	04/11/11 13:26	CUD0061	CD11113
1,3-Dichloropropane	ND (0.0329)	0.0074		1	04/11/11 13:26	CUD0061	CD11113
1,4-Dichlorobenzene	ND (0.0329)	0.0087	240	1	04/11/11 13:26	CUD0061	CD11113
1,4-Dioxane - Screen	ND (3.29)	1.10		1	04/11/11 13:26	CUD0061	CD11113
1-Chlorohexane	ND (0.0329)	0.0062		1	04/11/11 13:26	CUD0061	CD11113
2,2-Dichloropropane	ND (0.0657)	0.0112		1	04/11/11 13:26	CUD0061	CD11113
2-Butanone	ND (0.821)	0.190	10000	1	04/11/11 13:26	CUD0061	CD11113
2-Chlorotoluene	ND (0.0329)	0.0093		1	04/11/11 13:26	CUD0061	CD11113
2-Hexanone	ND (0.329)	0.0566		1	04/11/11 13:26	CUD0061	CD11113
4-Chlorotoluene	ND (0.0329)	0.0043		1	04/11/11 13:26	CUD0061	CD11113
4-Isopropyltoluene	ND (0.0329)	0.0058		1	04/11/11 13:26	CUD0061	CD11113
4-Methyl-2-Pentanone	ND (0.329)	0.0396	10000	1	04/11/11 13:26	CUD0061	CD11113
Acetone	ND (0.821)	0.243	10000	1	04/11/11 13:26	CUD0061	CD11113
Benzene	J 0.0204 (0.0329)	0.0053	200	1	04/11/11 13:26	CUD0061	CD11113



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-1 3ft
Date Sampled: 04/07/11 11:40
Percent Solids: 94
Initial Volume: 26.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1104085
ESS Laboratory Sample ID: 1104085-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0329)	0.0090		1	04/11/11 13:26	CUD0061	CD11113
Bromochloromethane	ND (0.0329)	0.0106		1	04/11/11 13:26	CUD0061	CD11113
Bromodichloromethane	ND (0.0329)	0.0045	92	1	04/11/11 13:26	CUD0061	CD11113
Bromoform	ND (0.0329)	0.0095	720	1	04/11/11 13:26	CUD0061	CD11113
Bromomethane	ND (0.0657)	0.0219	2900	1	04/11/11 13:26	CUD0061	CD11113
Carbon Disulfide	ND (0.0329)	0.0049		1	04/11/11 13:26	CUD0061	CD11113
Carbon Tetrachloride	ND (0.0329)	0.0057	44	1	04/11/11 13:26	CUD0061	CD11113
Chlorobenzene	ND (0.0329)	0.0052	10000	1	04/11/11 13:26	CUD0061	CD11113
Chloroethane	ND (0.0657)	0.0219		1	04/11/11 13:26	CUD0061	CD11113
Chloroform	ND (0.0329)	0.0068	940	1	04/11/11 13:26	CUD0061	CD11113
Chloromethane	ND (0.0657)	0.0083		1	04/11/11 13:26	CUD0061	CD11113
cis-1,2-Dichloroethene	ND (0.0329)	0.0081	10000	1	04/11/11 13:26	CUD0061	CD11113
cis-1,3-Dichloropropene	ND (0.0329)	0.0074		1	04/11/11 13:26	CUD0061	CD11113
Dibromochloromethane	ND (0.0329)	0.0083	68	1	04/11/11 13:26	CUD0061	CD11113
Dibromomethane	ND (0.0329)	0.0104		1	04/11/11 13:26	CUD0061	CD11113
Dichlorodifluoromethane	ND (0.0329)	0.0057		1	04/11/11 13:26	CUD0061	CD11113
Diethyl Ether	ND (0.0329)	0.0083		1	04/11/11 13:26	CUD0061	CD11113
Di-isopropyl ether	ND (0.0329)	0.0062		1	04/11/11 13:26	CUD0061	CD11113
Ethyl tertiary-butyl ether	ND (0.0329)	0.0083		1	04/11/11 13:26	CUD0061	CD11113
Ethylbenzene	ND (0.0329)	0.0043	10000	1	04/11/11 13:26	CUD0061	CD11113
Hexachlorobutadiene	ND (0.0329)	0.0110	73	1	04/11/11 13:26	CUD0061	CD11113
Isopropylbenzene	ND (0.0329)	0.0058	10000	1	04/11/11 13:26	CUD0061	CD11113
Methyl tert-Butyl Ether	ND (0.0329)	0.0053	10000	1	04/11/11 13:26	CUD0061	CD11113
Methylene Chloride	ND (0.164)	0.0086	760	1	04/11/11 13:26	CUD0061	CD11113
Naphthalene	ND (0.0329)	0.0086	10000	1	04/11/11 13:26	CUD0061	CD11113
n-Butylbenzene	ND (0.0329)	0.0081		1	04/11/11 13:26	CUD0061	CD11113
n-Propylbenzene	ND (0.0329)	0.0080		1	04/11/11 13:26	CUD0061	CD11113
sec-Butylbenzene	ND (0.0329)	0.0044		1	04/11/11 13:26	CUD0061	CD11113
Styrene	ND (0.0329)	0.0043	190	1	04/11/11 13:26	CUD0061	CD11113
tert-Butylbenzene	ND (0.0329)	0.0077		1	04/11/11 13:26	CUD0061	CD11113
Tertiary-amyl methyl ether	ND (0.0329)	0.0047		1	04/11/11 13:26	CUD0061	CD11113



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-1 3ft
 Date Sampled: 04/07/11 11:40
 Percent Solids: 94
 Initial Volume: 26.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104085
 ESS Laboratory Sample ID: 1104085-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0329)	0.0110	110	1	04/11/11 13:26	CUD0061	CD11113
Tetrahydrofuran	ND (0.329)	0.0848		1	04/11/11 13:26	CUD0061	CD11113
Toluene	J 0.0210 (0.0329)	0.0083	10000	1	04/11/11 13:26	CUD0061	CD11113
trans-1,2-Dichloroethene	ND (0.0329)	0.0108	10000	1	04/11/11 13:26	CUD0061	CD11113
trans-1,3-Dichloropropene	ND (0.0329)	0.0101		1	04/11/11 13:26	CUD0061	CD11113
Trichloroethene	ND (0.0329)	0.0068	520	1	04/11/11 13:26	CUD0061	CD11113
Trichlorofluoromethane	ND (0.0329)	0.0087		1	04/11/11 13:26	CUD0061	CD11113
Vinyl Acetate	ND (0.164)	0.0068		1	04/11/11 13:26	CUD0061	CD11113
Vinyl Chloride	ND (0.0329)	0.0108	3	1	04/11/11 13:26	CUD0061	CD11113
Xylene O	ND (0.0329)	0.0063	10000	1	04/11/11 13:26	CUD0061	CD11113
Xylene P,M	ND (0.0657)	0.0127	10000	1	04/11/11 13:26	CUD0061	CD11113
Xylenes (Total)	ND (0.0986)		10000	1	04/11/11 13:26		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	102 %		70-130
Surrogate: 4-Bromofluorobenzene	90 %		70-130
Surrogate: Dibromofluoromethane	98 %		70-130
Surrogate: Toluene-d8	88 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-1 3ft
Date Sampled: 04/07/11 11:40
Percent Solids: 94
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104085
ESS Laboratory Sample ID: 1104085-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/7/11 16:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	154 (39.7)	2500	1	04/07/11 18:27	CUD0037	CD10614
	<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: GRS-1 3ft
 Date Sampled: 04/07/11 11:40
 Percent Solids: 94
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104085
 ESS Laboratory Sample ID: 1104085-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/7/11 16:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Acenaphthene	ND (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Acenaphthylene	ND (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Anthracene	ND (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Benzo(a)anthracene	2.03 (0.354)	7.8	1	04/08/11 15:57	CUD0044	CD10615
Benzo(a)pyrene	1.49 (0.178)	0.8	1	04/08/11 15:57	CUD0044	CD10615
Benzo(b)fluoranthene	2.35 (0.354)	7.8	1	04/08/11 15:57	CUD0044	CD10615
Benzo(g,h,i)perylene	0.474 (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Benzo(k)fluoranthene	0.704 (0.354)	78	1	04/08/11 15:57	CUD0044	CD10615
Chrysene	2.30 (0.178)	780	1	04/08/11 15:57	CUD0044	CD10615
Dibenzo(a,h)Anthracene	0.180 (0.178)	0.8	1	04/08/11 15:57	CUD0044	CD10615
Fluoranthene	3.20 (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Fluorene	ND (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Indeno(1,2,3-cd)Pyrene	0.539 (0.354)	7.8	1	04/08/11 15:57	CUD0044	CD10615
Naphthalene	ND (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Phenanthrene	2.35 (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615
Pyrene	3.84 (0.354)	10000	1	04/08/11 15:57	CUD0044	CD10615

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	65 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	73 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	69 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	91 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-1 3ft
Date Sampled: 04/07/11 11:40
Percent Solids: 94

ESS Laboratory Work Order: 1104085
ESS Laboratory Sample ID: 1104085-02
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.04)	9014	10000	1	KJK	04/07/11 15:46	mg/kg dry	CD10707	
Total Organic Carbon	5710 (100)	§			§	04/11/11 0:00	mg/kg	CD11213	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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1311/6000/7000 TCLP Metals

Batch CD10802 - 3005A

Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
LCS										
Cadmium	2.42	0.0500	mg/L	2.500		97	80-120			
Chromium	4.94	0.200	mg/L	5.000		99	80-120			
Lead	4.92	0.200	mg/L	5.000		98	80-120			
LCS Dup										
Cadmium	2.40	0.0500	mg/L	2.500		96	80-120	0.7	20	
Chromium	4.86	0.200	mg/L	5.000		97	80-120	2	20	
Lead	4.92	0.200	mg/L	5.000		98	80-120	0.06	20	

3050B/6000/7000 Total Metals

Batch CD10725 - 3050B

Blank										
Arsenic	ND	2.5	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
LCS										
Arsenic	80.1	8.9	mg/kg wet	92.60		86	80-120			
Cadmium	52.1	1.79	mg/kg wet	61.80		84	80-120			
Chromium	59.0	3.6	mg/kg wet	71.30		83	80-120			
Lead	81.1	17.9	mg/kg wet	92.40		88	80-120			
LCS Dup										
Arsenic	83.7	9.1	mg/kg wet	92.60		90	80-120	4	20	
Cadmium	55.7	1.83	mg/kg wet	61.80		90	80-120	7	20	
Chromium	60.6	3.6	mg/kg wet	71.30		85	80-120	3	20	
Lead	83.1	18.2	mg/kg wet	92.40		90	80-120	2	20	

5035/8260B Volatile Organic Compounds / Methanol

Batch CD11113 - 5035

Blank										
1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD11113 - 5035

1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							
2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							
Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	ND	0.0500	mg/kg wet							
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Dibromochloromethane	ND	0.0500	mg/kg wet							
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD11113 - 5035

Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							
Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	2.52		mg/kg wet	2.500		101	70-130			
Surrogate: 4-Bromofluorobenzene	2.29		mg/kg wet	2.500		92	70-130			
Surrogate: Dibromofluoromethane	2.49		mg/kg wet	2.500		99	70-130			
Surrogate: Toluene-d8	2.20		mg/kg wet	2.500		88	70-130			

LCS

1,1,1,2-Tetrachloroethane	2.34	0.100	mg/kg wet	2.500		94	70-130			
1,1,1-Trichloroethane	2.60	0.0500	mg/kg wet	2.500		104	70-130			
1,1,2,2-Tetrachloroethane	2.51	0.0500	mg/kg wet	2.500		100	70-130			
1,1,2-Trichloroethane	2.33	0.0500	mg/kg wet	2.500		93	70-130			
1,1-Dichloroethane	2.37	0.0500	mg/kg wet	2.500		95	70-130			
1,1-Dichloroethene	2.47	0.0500	mg/kg wet	2.500		99	70-130			
1,1-Dichloropropene	2.56	0.0500	mg/kg wet	2.500		102	70-130			
1,2,3-Trichlorobenzene	2.28	0.0500	mg/kg wet	2.500		91	70-130			
1,2,3-Trichloropropane	2.56	0.0500	mg/kg wet	2.500		103	70-130			
1,2,4-Trichlorobenzene	2.40	0.0500	mg/kg wet	2.500		96	70-130			
1,2,4-Trimethylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,2-Dibromo-3-Chloropropane	2.73	0.300	mg/kg wet	2.500		109	70-130			
1,2-Dibromoethane	2.39	0.0500	mg/kg wet	2.500		95	70-130			
1,2-Dichlorobenzene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,2-Dichloroethane	2.90	0.0500	mg/kg wet	2.500		116	70-130			
1,2-Dichloropropane	2.32	0.0500	mg/kg wet	2.500		93	70-130			
1,3,5-Trimethylbenzene	2.50	0.0500	mg/kg wet	2.500		100	70-130			
1,3-Dichlorobenzene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,3-Dichloropropane	2.34	0.0500	mg/kg wet	2.500		94	70-130			
1,4-Dichlorobenzene	2.45	0.0500	mg/kg wet	2.500		98	70-130			
1,4-Dioxane - Screen	51.9	5.00	mg/kg wet	50.00		104	44-241			
1-Chlorohexane	2.42	0.0500	mg/kg wet	2.500		97	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD11113 - 5035										
2,2-Dichloropropane	2.69	0.100	mg/kg wet	2.500		108	70-130			
2-Butanone	12.3	1.25	mg/kg wet	12.50		98	70-130			
2-Chlorotoluene	2.37	0.0500	mg/kg wet	2.500		95	70-130			
2-Hexanone	13.0	0.500	mg/kg wet	12.50		104	70-130			
4-Chlorotoluene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
4-Isopropyltoluene	2.26	0.0500	mg/kg wet	2.500		90	70-130			
4-Methyl-2-Pentanone	12.1	0.500	mg/kg wet	12.50		97	70-130			
Acetone	11.5	1.25	mg/kg wet	12.50		92	70-130			
Benzene	2.36	0.0500	mg/kg wet	2.500		94	70-130			
Bromobenzene	2.45	0.0500	mg/kg wet	2.500		98	70-130			
Bromochloromethane	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Bromodichloromethane	2.69	0.0500	mg/kg wet	2.500		108	70-130			
Bromoform	2.65	0.0500	mg/kg wet	2.500		106	70-130			
Bromomethane	3.42	0.100	mg/kg wet	2.500		137	70-130			B+
Carbon Disulfide	2.44	0.0500	mg/kg wet	2.500		98	70-130			
Carbon Tetrachloride	2.89	0.0500	mg/kg wet	2.500		116	70-130			
Chlorobenzene	2.36	0.0500	mg/kg wet	2.500		94	70-130			
Chloroethane	3.07	0.100	mg/kg wet	2.500		123	70-130			
Chloroform	2.52	0.0500	mg/kg wet	2.500		101	70-130			
Chloromethane	2.13	0.100	mg/kg wet	2.500		85	70-130			
cis-1,2-Dichloroethene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
cis-1,3-Dichloropropene	2.51	0.0500	mg/kg wet	2.500		100	70-130			
Dibromochloromethane	2.68	0.0500	mg/kg wet	2.500		107	70-130			
Dibromomethane	2.28	0.0500	mg/kg wet	2.500		91	70-130			
Dichlorodifluoromethane	2.00	0.0500	mg/kg wet	2.500		80	70-130			
Diethyl Ether	2.37	0.0500	mg/kg wet	2.500		95	70-130			
Di-isopropyl ether	2.46	0.0500	mg/kg wet	2.500		99	70-130			
Ethyl tertiary-butyl ether	2.51	0.0500	mg/kg wet	2.500		100	70-130			
Ethylbenzene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
Hexachlorobutadiene	2.66	0.0500	mg/kg wet	2.500		106	70-130			
Isopropylbenzene	2.03	0.0500	mg/kg wet	2.500		81	70-130			
Methyl tert-Butyl Ether	2.55	0.0500	mg/kg wet	2.500		102	70-130			
Methylene Chloride	2.57	0.250	mg/kg wet	2.500		103	70-130			
Naphthalene	2.37	0.0500	mg/kg wet	2.500		95	70-130			
n-Butylbenzene	2.65	0.0500	mg/kg wet	2.500		106	70-130			
n-Propylbenzene	2.54	0.0500	mg/kg wet	2.500		101	70-130			
sec-Butylbenzene	2.40	0.0500	mg/kg wet	2.500		96	70-130			
Styrene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
tert-Butylbenzene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
Tertiary-amyl methyl ether	2.44	0.0500	mg/kg wet	2.500		98	70-130			
Tetrachloroethene	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Tetrahydrofuran	2.47	0.500	mg/kg wet	2.500		99	70-130			
Toluene	2.39	0.0500	mg/kg wet	2.500		95	70-130			
trans-1,2-Dichloroethene	2.30	0.0500	mg/kg wet	2.500		92	70-130			
trans-1,3-Dichloropropene	2.38	0.0500	mg/kg wet	2.500		95	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD11113 - 5035										
Trichloroethene	2.44	0.0500	mg/kg wet	2.500		98	70-130			
Vinyl Acetate	2.87	0.250	mg/kg wet	2.500		115	70-130			
Vinyl Chloride	2.43	0.0500	mg/kg wet	2.500		97	70-130			
Xylene O	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Xylene P,M	4.72	0.100	mg/kg wet	5.000		94	70-130			
Surrogate: 1,2-Dichloroethane-d4	2.59		mg/kg wet	2.500		104	70-130			
Surrogate: 4-Bromofluorobenzene	2.34		mg/kg wet	2.500		93	70-130			
Surrogate: Dibromofluoromethane	2.40		mg/kg wet	2.500		96	70-130			
Surrogate: Toluene-d8	2.22		mg/kg wet	2.500		89	70-130			
LCS Dup										
1,1,1,2-Tetrachloroethane	2.42	0.100	mg/kg wet	2.500		97	70-130	3	25	
1,1,1-Trichloroethane	2.67	0.0500	mg/kg wet	2.500		107	70-130	3	25	
1,1,2,2-Tetrachloroethane	2.52	0.0500	mg/kg wet	2.500		101	70-130	0.4	25	
1,1,2-Trichloroethane	2.42	0.0500	mg/kg wet	2.500		97	70-130	4	25	
1,1-Dichloroethane	2.47	0.0500	mg/kg wet	2.500		99	70-130	4	25	
1,1-Dichloroethene	2.57	0.0500	mg/kg wet	2.500		103	70-130	4	25	
1,1-Dichloropropene	2.63	0.0500	mg/kg wet	2.500		105	70-130	3	25	
1,2,3-Trichlorobenzene	2.39	0.0500	mg/kg wet	2.500		95	70-130	4	25	
1,2,3-Trichloropropane	2.45	0.0500	mg/kg wet	2.500		98	70-130	5	25	
1,2,4-Trichlorobenzene	2.49	0.0500	mg/kg wet	2.500		99	70-130	4	25	
1,2,4-Trimethylbenzene	2.45	0.0500	mg/kg wet	2.500		98	70-130	3	25	
1,2-Dibromo-3-Chloropropane	2.64	0.300	mg/kg wet	2.500		106	70-130	3	25	
1,2-Dibromoethane	2.46	0.0500	mg/kg wet	2.500		98	70-130	3	25	
1,2-Dichlorobenzene	2.46	0.0500	mg/kg wet	2.500		98	70-130	2	25	
1,2-Dichloroethane	2.97	0.0500	mg/kg wet	2.500		119	70-130	2	25	
1,2-Dichloropropane	2.41	0.0500	mg/kg wet	2.500		96	70-130	4	25	
1,3,5-Trimethylbenzene	2.57	0.0500	mg/kg wet	2.500		103	70-130	3	25	
1,3-Dichlorobenzene	2.48	0.0500	mg/kg wet	2.500		99	70-130	2	25	
1,3-Dichloropropane	2.42	0.0500	mg/kg wet	2.500		97	70-130	3	25	
1,4-Dichlorobenzene	2.48	0.0500	mg/kg wet	2.500		99	70-130	1	25	
1,4-Dioxane - Screen	55.0	5.00	mg/kg wet	50.00		110	44-241	6	200	
1-Chlorohexane	2.52	0.0500	mg/kg wet	2.500		101	70-130	4	25	
2,2-Dichloropropane	2.78	0.100	mg/kg wet	2.500		111	70-130	3	25	
2-Butanone	12.4	1.25	mg/kg wet	12.50		99	70-130	1	25	
2-Chlorotoluene	2.44	0.0500	mg/kg wet	2.500		98	70-130	3	25	
2-Hexanone	13.0	0.500	mg/kg wet	12.50		104	70-130	0.1	25	
4-Chlorotoluene	2.52	0.0500	mg/kg wet	2.500		101	70-130	2	25	
4-Isopropyltoluene	2.32	0.0500	mg/kg wet	2.500		93	70-130	3	25	
4-Methyl-2-Pentanone	12.2	0.500	mg/kg wet	12.50		98	70-130	0.8	25	
Acetone	11.3	1.25	mg/kg wet	12.50		91	70-130	2	25	
Benzene	2.47	0.0500	mg/kg wet	2.500		99	70-130	5	25	
Bromobenzene	2.51	0.0500	mg/kg wet	2.500		100	70-130	3	25	
Bromochloromethane	2.32	0.0500	mg/kg wet	2.500		93	70-130	3	25	
Bromodichloromethane	2.81	0.0500	mg/kg wet	2.500		112	70-130	4	25	
Bromoform	2.71	0.0500	mg/kg wet	2.500		108	70-130	2	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD11113 - 5035

Bromomethane	3.37	0.100	mg/kg wet	2.500	135	70-130	1	25	B+
Carbon Disulfide	2.54	0.0500	mg/kg wet	2.500	101	70-130	4	25	
Carbon Tetrachloride	3.01	0.0500	mg/kg wet	2.500	120	70-130	4	25	
Chlorobenzene	2.45	0.0500	mg/kg wet	2.500	98	70-130	4	25	
Chloroethane	3.26	0.100	mg/kg wet	2.500	130	70-130	6	25	
Chloroform	2.57	0.0500	mg/kg wet	2.500	103	70-130	2	25	
Chloromethane	2.20	0.100	mg/kg wet	2.500	88	70-130	4	25	
cis-1,2-Dichloroethene	2.54	0.0500	mg/kg wet	2.500	102	70-130	5	25	
cis-1,3-Dichloropropene	2.56	0.0500	mg/kg wet	2.500	103	70-130	2	25	
Dibromochloromethane	2.76	0.0500	mg/kg wet	2.500	110	70-130	3	25	
Dibromomethane	2.35	0.0500	mg/kg wet	2.500	94	70-130	3	25	
Dichlorodifluoromethane	2.07	0.0500	mg/kg wet	2.500	83	70-130	3	25	
Diethyl Ether	2.45	0.0500	mg/kg wet	2.500	98	70-130	3	25	
Di-isopropyl ether	2.53	0.0500	mg/kg wet	2.500	101	70-130	3	25	
Ethyl tertiary-butyl ether	2.57	0.0500	mg/kg wet	2.500	103	70-130	2	25	
Ethylbenzene	2.52	0.0500	mg/kg wet	2.500	101	70-130	4	25	
Hexachlorobutadiene	2.75	0.0500	mg/kg wet	2.500	110	70-130	3	25	
Isopropylbenzene	2.09	0.0500	mg/kg wet	2.500	83	70-130	3	25	
Methyl tert-Butyl Ether	2.59	0.0500	mg/kg wet	2.500	104	70-130	2	25	
Methylene Chloride	2.67	0.250	mg/kg wet	2.500	107	70-130	4	25	
Naphthalene	2.42	0.0500	mg/kg wet	2.500	97	70-130	2	25	
n-Butylbenzene	2.74	0.0500	mg/kg wet	2.500	109	70-130	3	25	
n-Propylbenzene	2.63	0.0500	mg/kg wet	2.500	105	70-130	4	25	
sec-Butylbenzene	2.46	0.0500	mg/kg wet	2.500	98	70-130	3	25	
Styrene	2.55	0.0500	mg/kg wet	2.500	102	70-130	5	25	
tert-Butylbenzene	2.48	0.0500	mg/kg wet	2.500	99	70-130	2	25	
Tertiary-amyl methyl ether	2.51	0.0500	mg/kg wet	2.500	101	70-130	3	25	
Tetrachloroethene	2.33	0.0500	mg/kg wet	2.500	93	70-130	3	25	
Tetrahydrofuran	2.28	0.500	mg/kg wet	2.500	91	70-130	8	25	
Toluene	2.46	0.0500	mg/kg wet	2.500	98	70-130	3	25	
trans-1,2-Dichloroethene	2.38	0.0500	mg/kg wet	2.500	95	70-130	3	25	
trans-1,3-Dichloropropene	2.46	0.0500	mg/kg wet	2.500	98	70-130	3	25	
Trichloroethene	2.51	0.0500	mg/kg wet	2.500	100	70-130	3	25	
Vinyl Acetate	2.92	0.250	mg/kg wet	2.500	117	70-130	2	25	
Vinyl Chloride	2.58	0.0500	mg/kg wet	2.500	103	70-130	6	25	
Xylene O	2.42	0.0500	mg/kg wet	2.500	97	70-130	3	25	
Xylene P,M	4.96	0.100	mg/kg wet	5.000	99	70-130	5	25	
Surrogate: 1,2-Dichloroethane-d4	2.64		mg/kg wet	2.500	106	70-130			
Surrogate: 4-Bromofluorobenzene	2.44		mg/kg wet	2.500	97	70-130			
Surrogate: Dibromofluoromethane	2.49		mg/kg wet	2.500	100	70-130			
Surrogate: Toluene-d8	2.32		mg/kg wet	2.500	93	70-130			

8082 Polychlorinated Biphenyls (PCB)

Batch CD10619 - 3540

Blank

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082 Polychlorinated Biphenyls (PCB)

Batch CD10619 - 3540

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0180		mg/kg wet	0.02500		72	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0184		mg/kg wet	0.02500		73	30-150			
Surrogate: Tetrachloro-m-xylene	0.0185		mg/kg wet	0.02500		74	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0193		mg/kg wet	0.02500		77	30-150			

LCS

Aroclor 1016	0.423	0.0500	mg/kg wet	0.5000		85	40-140			
Aroclor 1260	0.384	0.0500	mg/kg wet	0.5000		77	40-140			

Surrogate: Decachlorobiphenyl	0.0206		mg/kg wet	0.02500		83	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0208		mg/kg wet	0.02500		83	30-150			
Surrogate: Tetrachloro-m-xylene	0.0211		mg/kg wet	0.02500		84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0217		mg/kg wet	0.02500		87	30-150			

LCS Dup

Aroclor 1016	0.425	0.0500	mg/kg wet	0.5000		85	40-140	0.4	50	
Aroclor 1260	0.381	0.0500	mg/kg wet	0.5000		76	40-140	0.6	50	

Surrogate: Decachlorobiphenyl	0.0204		mg/kg wet	0.02500		82	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0201		mg/kg wet	0.02500		80	30-150			
Surrogate: Tetrachloro-m-xylene	0.0207		mg/kg wet	0.02500		83	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0210		mg/kg wet	0.02500		84	30-150			

8100M Total Petroleum Hydrocarbons

Batch CD10614 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CD10614 - 3546

Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
<i>Surrogate: O-Terphenyl</i>	4.54		mg/kg wet	5.000		91	40-140			

LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Docosane (C22)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		106	40-140			
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Total Petroleum Hydrocarbons	36.1	37.5	mg/kg wet	35.00		103	40-140			
Triacontane (C30)	2.0	0.2	mg/kg wet	2.500		79	40-140			

Surrogate: O-Terphenyl

4.58 mg/kg wet 5.000 92 40-140

LCS Dup

Decane (C10)	2.0	0.2	mg/kg wet	2.500		79	40-140	2	50	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		105	40-140	0.7	50	
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	50	
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		106	40-140	0.2	50	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		102	40-140	2	50	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		100	40-140	1	50	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		98	40-140	0.2	50	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		65	30-140	2	50	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	50	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		103	40-140	0.5	50	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		104	40-140	1	50	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		98	40-140	1	50	
Total Petroleum Hydrocarbons	35.7	37.5	mg/kg wet	35.00		102	40-140	1	50	
Triacontane (C30)	2.0	0.2	mg/kg wet	2.500		78	40-140	1	50	

Surrogate: O-Terphenyl

4.54 mg/kg wet 5.000 91 40-140

8270C Polynuclear Aromatic Hydrocarbons

Batch CD10615 - 3546

Blank

2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Polynuclear Aromatic Hydrocarbons

Batch CD10615 - 3546

Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.64		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorobiphenyl	2.77		mg/kg wet	3.333		83	30-130			
Surrogate: Nitrobenzene-d5	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: p-Terphenyl-d14	3.52		mg/kg wet	3.333		106	30-130			

LCS

2-Methylnaphthalene	2.71	0.333	mg/kg wet	3.333		81	40-140			
Acenaphthene	3.39	0.333	mg/kg wet	3.333		102	40-140			
Acenaphthylene	2.79	0.333	mg/kg wet	3.333		84	40-140			
Anthracene	3.90	0.333	mg/kg wet	3.333		117	40-140			
Benzo(a)anthracene	3.88	0.333	mg/kg wet	3.333		116	40-140			
Benzo(a)pyrene	3.98	0.167	mg/kg wet	3.333		119	40-140			
Benzo(b)fluoranthene	3.96	0.333	mg/kg wet	3.333		119	40-140			
Benzo(g,h,i)perylene	3.82	0.333	mg/kg wet	3.333		115	40-140			
Benzo(k)fluoranthene	3.90	0.333	mg/kg wet	3.333		117	40-140			
Chrysene	4.02	0.167	mg/kg wet	3.333		120	40-140			
Dibenzo(a,h)Anthracene	3.69	0.167	mg/kg wet	3.333		111	40-140			
Fluoranthene	3.40	0.333	mg/kg wet	3.333		102	40-140			
Fluorene	3.77	0.333	mg/kg wet	3.333		113	40-140			
Indeno(1,2,3-cd)Pyrene	3.66	0.333	mg/kg wet	3.333		110	40-140			
Naphthalene	2.58	0.333	mg/kg wet	3.333		77	40-140			
Phenanthrene	3.92	0.333	mg/kg wet	3.333		118	40-140			
Pyrene	3.95	0.333	mg/kg wet	3.333		118	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.32		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.40		mg/kg wet	3.333		72	30-130			
Surrogate: Nitrobenzene-d5	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: p-Terphenyl-d14	3.00		mg/kg wet	3.333		90	30-130			

LCS Dup

2-Methylnaphthalene	2.65	0.333	mg/kg wet	3.333		80	40-140	2	30	
Acenaphthene	3.32	0.333	mg/kg wet	3.333		100	40-140	2	30	
Acenaphthylene	2.72	0.333	mg/kg wet	3.333		82	40-140	2	30	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Polynuclear Aromatic Hydrocarbons

Batch CD10615 - 3546

Anthracene	3.94	0.333	mg/kg wet	3.333		118	40-140	1	30	
Benzo(a)anthracene	3.93	0.333	mg/kg wet	3.333		118	40-140	1	30	
Benzo(a)pyrene	4.13	0.167	mg/kg wet	3.333		124	40-140	4	30	
Benzo(b)fluoranthene	4.12	0.333	mg/kg wet	3.333		124	40-140	4	30	
Benzo(g,h,i)perylene	3.79	0.333	mg/kg wet	3.333		114	40-140	0.9	30	
Benzo(k)fluoranthene	3.75	0.333	mg/kg wet	3.333		113	40-140	4	30	
Chrysene	4.05	0.167	mg/kg wet	3.333		122	40-140	0.9	30	
Dibenzo(a,h)Anthracene	3.59	0.167	mg/kg wet	3.333		108	40-140	3	30	
Fluoranthene	3.44	0.333	mg/kg wet	3.333		103	40-140	1	30	
Fluorene	3.59	0.333	mg/kg wet	3.333		108	40-140	5	30	
Indeno(1,2,3-cd)Pyrene	3.65	0.333	mg/kg wet	3.333		110	40-140	0.2	30	
Naphthalene	2.64	0.333	mg/kg wet	3.333		79	40-140	2	30	
Phenanthrene	3.98	0.333	mg/kg wet	3.333		119	40-140	2	30	
Pyrene	3.91	0.333	mg/kg wet	3.333		117	40-140	0.9	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.27		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorobiphenyl	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: Nitrobenzene-d5	2.20		mg/kg wet	3.333		66	30-130			
Surrogate: p-Terphenyl-d14	2.98		mg/kg wet	3.333		89	30-130			

Classical Chemistry

Batch CD10707 - TCN Prep

Blank										
Total Cyanide	ND	1.00	mg/kg wet							
LCS										
Total Cyanide	5.02	1.00	mg/kg wet	5.015		100	90-110			
LCS										
Total Cyanide	20.2	1.00	mg/kg wet	20.06		101	90-110			
LCS Dup										
Total Cyanide	19.8	1.00	mg/kg wet	20.06		99	90-110	2	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

Notes and Definitions

- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- J Reported between MDL and MRL; Estimated value.
- D Diluted.
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104085

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>



R.I. ANALYTICAL
Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

ESS Laboratory
Attn: Ms. Liz Ouk
185 Frances Avenue
Cranston, RI 02910-2211

Date Received: 4/7/2011
Date Reported: 4/12/2011
P.O. #: 1104085
Work Order #: 1104-06388

DESCRIPTION: PROJECT# 1104085

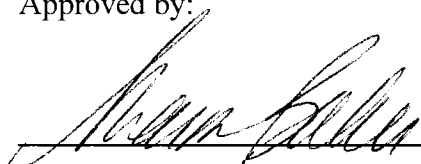
Subject sample(s) has/have been analyzed by our subcontracted laboratory with the attached results.

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.

If you have any questions regarding this work, or if we may be of further assistance, please contact us.

Approved by:



Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

ESS Laboratory
Date Received: 4/7/2011
Work Order #: 1104-06388

Sample # 001

SAMPLE DESCRIPTION: 1104085-02

SAMPLE TYPE: COMPOSITE

SAMPLE DATE/TIME: 4/7/2011

11:40

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/11/2011	SUB

Mt.Tom Generating Co. LLC Analytical Laboratory

15 Agawam Avenue
West Springfield, MA 01089
Phone (413) 214-6541 Fax (413) 214-6842
email-madhu.shah@gdfsuezna.com



Mass Certification - MA-00071
Conn Certification - PH-0520

Report Date April 11, 2011

Customer	Contact	Laboratory Supervisor	eMail
R.I.Analytical Laboratories,Inc.	K. Phelan	Madhu Shah	madhu.shah@gdfsuezna.com
Sample Description Analysis of Soil Sample			

Samples Analyzed

Enclosed are Report No(s): 27379

Reported on dry basis.

ICV 10,000 ppm = 9,969 ppm
CCV 1,000 ppm = 1,076 ppm

Thank you for your business

Madhu Shah, Laboratory Supervisor

Date

ALL the information contained in this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method.

This report may not be reproduced, except in full, without written approval from Mt.Tom Generating Co.LLC Analytical Laboratory.

Sample Analysis

Work Order 11-0483

Sample Description	Source	Taken/Time	Received		
27379 1104-06388-001	R.I.Analytical Laboratories, Inc.	4/7/11	4/8/11		
Parameter	Results	MDL	Method	Analyzed/Time	Tech
Total Organic Carbon	5,710	ppm	100.00 SW 846 9060	04/11/11	sjr

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: Standard _____ Other RUSH / P&A 96
 Reporting Limits: ESS LAB PROJECT ID: 1104085
 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: USACE _____ Navy _____ Other _____
 MA-MCP _____

Co. Name: GZA GEDENVIRONMENTAL INC
 Project # 436540
 Project Name (20 Char. or less): TIDEWATER GRS
 Contact Person: Meg Kilpatrick
 Address: 530 Broadway
 City: PROVIDENCE State: RI PO# _____
 Telephone # 401 421 4140 Zip 02909
 Email Address: MKILPATRICK@GZA.COM

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	PCBS (8082A)	Metals (Pb, Ag, Cu)	TPH	Voc's	PAH	TOC	Metals (Ar, Pb, Cu)	Write Required Analysis
01	4/5/11	11:08	X		S	GRS-1 0'-3" (48 MAT) (HOLD)	2 G	2	G	X	X						Hold / Freeze
02	4/5/11	11:10	X		S	GRS-1 9'-12" (HOLD)	2 G	2	G	X	X						X
03	4/5/11	11:46	X		S	GRS-1 3' (48 MAT) (HOLD)	4 G	4	G		X	X	X	X	X		X
04	4/5/11	11:45	X		S	GRS-1 30" (HOLD)	2 G	2	G		X	X	X	X	X		X
05	4/5/11	13:20	X		S	GRS-1 10'-36" (24 MAT) (HOLD)	2 G	2	G	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
 Cooler Present: Yes No Internal Use Only
 Seals Intact: Yes No NA: Pickup
 Cooler Temp: 2.3 [] Technicians _____
 Relinquished by: (Signature) [Signature] Date/Time 4/7/11 14:50 Received by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) [Signature] Date/Time 4/7/11 14:50 Relinquished by: (Signature) _____ Date/Time _____
 Comments: William Fortune
Metals (Pb, Ag, Cu) - Total and TCLP
 Sampled by: William Fortune
 Preservation Code: 1- NP, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAc₂, 9- _____
 Received by: (Signature) _____ Date/Time _____

*By circling MA-MCP, client acknowledges samples were collected in accordance with MATHRP C.A.M.VII A
 Please fax all changes to Chain of Custody in writing.
 1 (White) Lab Copy 2 (Yellow) Client Copy

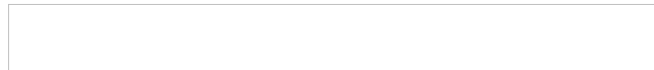


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.00)
ESS Laboratory Work Order Number: 1104050

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

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: 1104050

SAMPLE RECEIPT

The following samples were received on April 06, 2011 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 April 18, 2011: Client Sample IDs for 1104050-01, -04 through -10, -12 through -14, and -16 through -26 have been revised.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1104050-01	GRS-20 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-02	GRSBD040511-0-3	Soil	1311/6010B, 6010B, 8082
1104050-03	GRSBD040511-9-12	Soil	1311/6010B, 6010B, 8082
1104050-04	GRS-21 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-05	GRS-22 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-06	GRS-23 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-07	GRS-24 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-08	GRS-25 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-09	GRS-25 1.5ft	Soil	§, 8082, 8100M, 8260B, 8270C
1104050-10	GRS-BD-040611-1.5ft	Soil	§, 8082, 8100M, 8260B, 8270C
1104050-11	GRS-26	Soil	1311/6010B, 6010B, 8082
1104050-12	GRS-BD-040611-0-3in	Soil	1311/6010B, 6010B, 8082
1104050-13	GRSP-2 0-3in	Soil	8082
1104050-14	GRSP-2 9-12in	Soil	8082
1104050-15	GRSP-3 9-12	Soil	8082
1104050-16	GRSP-3 0-3in	Soil	8082
1104050-17	GRSP-4 0-3in	Soil	8082
1104050-18	GRSP-4 9-12in	Soil	8082
1104050-19	GRS-3 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-20	GRS-3 36in	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104050-21	GRS-2 0-3in	Soil	1311/6010B, 6010B, 8082
1104050-22	GRSP-5 0-3in	Soil	8082
1104050-23	GRSP-5 9-12in	Soil	8082
1104050-24	GRSP-1 0-3in	Soil	8082
1104050-25	GRSP-1 9-12in	Soil	8082
1104050-26	GRSP-1 21-24in	Soil	8082

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

PROJECT NARRATIVE

3050B/6000/7000 Total Metals

CD10616-MS1 Matrix Spike recovery is below lower control limit (M-).
Lead (45% @ 75-125%)

5035/8260B Volatile Organic Compounds / Methanol

1104050-20 Surrogate recovery(ies) above upper control limit (S+).
1,2-Dichloroethane-d4 (133% @ 70-130%), Dibromofluoromethane (131% @ 70-130%)
CD10608-BS1 Blank Spike recovery is above upper control limit (B+).
Bromomethane (138% @ 70-130%), Chloroethane (131% @ 70-130%)
CD10608-BSD1 Blank Spike recovery is above upper control limit (B+).
Bromomethane (134% @ 70-130%)
CUD0029-CCV1 Continuing Calibration recovery is above upper control limit (C+).
Chloroethane (137% @ 70-130%)

8082 Polychlorinated Biphenyls (PCB)

1104050-19 Surrogate recovery(ies) below lower control limit (S-).
Decachlorobiphenyl [2C] (26% @ 30-150%)
1104050-24 Surrogate recovery(ies) diluted below the MRL (SD).
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1104050-25 Surrogate recovery(ies) diluted below the MRL (SD).
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1104050-26 Surrogate recovery(ies) diluted below the MRL (SD).
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

8100M Total Petroleum Hydrocarbons

CD10614-MS1 Due to high target values, matrix spike compound(s) is masked (MT).
Total Petroleum Hydrocarbons (541% @ 40-140%)
CD10614-MS1 Matrix Spike recovery is below lower control limit (M-).
Octadecane (C18) (-63% @ 40-140%), Tetracosane (C24) (16% @ 40-140%)
CD10614-MSD1 Due to high target values, matrix spike compound(s) is masked (MT).
Total Petroleum Hydrocarbons (446% @ 40-140%)
CD10614-MSD1 Matrix Spike recovery is above upper control limit (M+).
Docosane (C22) (169% @ 40-140%), Eicosane (C20) (166% @ 40-140%), Octadecane (C18) (327% @ 40-140%)
CD10614-MSD1 Relative percent difference for duplicate is outside of criteria (D+).
Eicosane (C20) (60%), Octadecane (C18) (89%)

8270C Polynuclear Aromatic Hydrocarbons

1104050-20 Elevated Method Reporting Limits due to sample matrix (EL).
CD10615-MS1 Majority of matrix spike compounds are outside of criteria due to matrix interferences (MM).



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Tidewater GH

ESS Laboratory Work Order: 1104050

CD10615-MSD1 Majority of matrix spike compounds are outside of criteria due to matrix interferences (MM).

CUD0034-CCV1 Calibration required quadratic regression (Q).

Benzo(b)fluoranthene (101% @ 70-130%), Dibenzo(a,h)Anthracene (99% @ 70-130%),

Indeno(1,2,3-cd)Pyrene (97% @ 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
Client Sample ID: GRS-20 0-3in
Date Sampled: 04/05/11 14:50
Percent Solids: 88

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-01
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 17:30	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:30	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:30	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-20 0-3in
Date Sampled: 04/05/11 14:50
Percent Solids: 88

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-01
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.52)	6010B	1000	1	SVD	04/06/11 19:59	2.21	100	CD10616	
Chromium	7.7 (1.0)	6010B	10000	1	SVD	04/06/11 19:59	2.21	100	CD10616	
Lead	36.1 (5.1)	6010B	500	1	SVD	04/06/11 19:59	2.21	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-20 0-3in
Date Sampled: 04/05/11 14:50
Percent Solids: 88
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1221	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1232	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1242	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1248	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1254	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1260	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1262	ND (0.0565)	10	1	04/07/11 10:05		CD10520
Aroclor 1268	ND (0.0565)	10	1	04/07/11 10:05		CD10520

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	85 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	83 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	82 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	89 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSBD040511-0-3
Date Sampled: 04/05/11 12:00
Percent Solids: 95

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-02
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 17:34	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:34	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:34	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSBD040511-0-3
 Date Sampled: 04/05/11 12:00
 Percent Solids: 95

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-02
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.45)	6010B	1000	1	SVD	04/06/11 20:04	2.33	100	CD10616	
Chromium	7.1 (0.9)	6010B	10000	1	SVD	04/06/11 20:04	2.33	100	CD10616	
Lead	25.3 (4.5)	6010B	500	1	SVD	04/06/11 20:04	2.33	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSBD040511-0-3
Date Sampled: 04/05/11 12:00
Percent Solids: 95
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1221	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1232	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1242	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1248	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1254	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1260	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1262	ND (0.0526)	10	1	04/07/11 10:26		CD10520
Aroclor 1268	ND (0.0526)	10	1	04/07/11 10:26		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	83 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	83 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	82 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	89 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSBD040511-9-12
Date Sampled: 04/05/11 12:05
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-03
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP</u>		<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 17:46	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:46	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:46	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSBD040511-9-12
Date Sampled: 04/05/11 12:05
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-03
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.49)	6010B	1000	1	SVD	04/06/11 20:09	2.18	100	CD10616	
Chromium	4.5 (1.0)	6010B	10000	1	SVD	04/06/11 20:09	2.18	100	CD10616	
Lead	18.2 (4.9)	6010B	500	1	SVD	04/06/11 20:09	2.18	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSBD040511-9-12
Date Sampled: 04/05/11 12:05
Percent Solids: 94
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1221	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1232	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1242	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1248	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1254	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1260	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1262	ND (0.0532)	10	1	04/07/11 10:43		CD10520
Aroclor 1268	ND (0.0532)	10	1	04/07/11 10:43		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	80 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	87 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-21 0-3in
 Date Sampled: 04/06/11 07:35
 Percent Solids: 92

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-04
 Sample Matrix: Soil
 Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 17:50	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:50	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:50	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-21 0-3in
Date Sampled: 04/06/11 07:35
Percent Solids: 92

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-04
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.53)	6010B	1000	1	SVD	04/06/11 20:13	2.08	100	CD10616	
Chromium	6.0 (1.0)	6010B	10000	1	SVD	04/06/11 20:13	2.08	100	CD10616	
Lead	54.0 (5.2)	6010B	500	1	SVD	04/06/11 20:13	2.08	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-21 0-3in
 Date Sampled: 04/06/11 07:35
 Percent Solids: 92
 Initial Volume: 19.9
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-04
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1221	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1232	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1242	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1248	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1254	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1260	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1262	ND (0.0546)	10	1	04/07/11 11:02		CD10520
Aroclor 1268	ND (0.0546)	10	1	04/07/11 11:02		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	57 %		30-150
Surrogate: Decachlorobiphenyl [2C]	57 %		30-150
Surrogate: Tetrachloro-m-xylene	61 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	61 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-22 0-3in
Date Sampled: 04/06/11 07:52
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-05
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 17:59	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:59	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 17:59	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-22 0-3in
Date Sampled: 04/06/11 07:52
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-05
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.40)	6010B	1000	1	SVD	04/06/11 20:18	2.64	100	CD10616	
Chromium	4.8 (0.8)	6010B	10000	1	SVD	04/06/11 20:18	2.64	100	CD10616	
Lead	30.5 (4.0)	6010B	500	1	SVD	04/06/11 20:18	2.64	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-22 0-3in
Date Sampled: 04/06/11 07:52
Percent Solids: 94
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1221	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1232	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1242	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1248	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1254	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1260	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1262	ND (0.0527)	10	1	04/07/11 11:21		CD10520
Aroclor 1268	ND (0.0527)	10	1	04/07/11 11:21		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	77 %		30-150
Surrogate: Decachlorobiphenyl [2C]	75 %		30-150
Surrogate: Tetrachloro-m-xylene	75 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	81 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-23 0-3in
 Date Sampled: 04/06/11 08:00
 Percent Solids: 92

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-06
 Sample Matrix: Soil
 Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 18:03	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:03	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:03	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-23 0-3in
Date Sampled: 04/06/11 08:00
Percent Solids: 92

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-06
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.47)	6010B	1000	1	SVD	04/06/11 20:23	2.31	100	CD10616	
Chromium	12.4 (0.9)	6010B	10000	1	SVD	04/06/11 20:23	2.31	100	CD10616	
Lead	74.6 (4.7)	6010B	500	1	SVD	04/06/11 20:23	2.31	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-23 0-3in
 Date Sampled: 04/06/11 08:00
 Percent Solids: 92
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1221	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1232	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1242	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1248	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1254	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1260	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1262	ND (0.0543)	10	1	04/07/11 11:40		CD10520
Aroclor 1268	ND (0.0543)	10	1	04/07/11 11:40		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	79 %		30-150
Surrogate: Decachlorobiphenyl [2C]	81 %		30-150
Surrogate: Tetrachloro-m-xylene	75 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	84 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-24 0-3in
Date Sampled: 04/06/11 08:08
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-07
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 18:07	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:07	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:07	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-24 0-3in
Date Sampled: 04/06/11 08:08
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-07
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.52)	6010B	1000	1	SVD	04/06/11 20:27	2.04	100	CD10616	
Chromium	4.5 (1.0)	6010B	10000	1	SVD	04/06/11 20:27	2.04	100	CD10616	
Lead	29.0 (5.2)	6010B	500	1	SVD	04/06/11 20:27	2.04	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-24 0-3in
 Date Sampled: 04/06/11 08:08
 Percent Solids: 94
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-07
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1221	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1232	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1242	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1248	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1254	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1260	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1262	ND (0.0529)	10	1	04/07/11 11:59		CD10520
Aroclor 1268	ND (0.0529)	10	1	04/07/11 11:59		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	84 %		30-150
Surrogate: Decachlorobiphenyl [2C]	80 %		30-150
Surrogate: Tetrachloro-m-xylene	79 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	87 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-25 0-3in
Date Sampled: 04/06/11 08:15
Percent Solids: 88

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-08
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 18:11	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:11	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:11	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-25 0-3in
Date Sampled: 04/06/11 08:15
Percent Solids: 88

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-08
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.52)	6010B	1000	1	SVD	04/06/11 20:40	2.18	100	CD10616	
Chromium	6.8 (1.0)	6010B	10000	1	SVD	04/06/11 20:40	2.18	100	CD10616	
Lead	37.2 (5.2)	6010B	500	1	SVD	04/06/11 20:40	2.18	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-25 0-3in
 Date Sampled: 04/06/11 08:15
 Percent Solids: 88
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-08
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1221	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1232	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1242	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1248	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1254	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1260	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1262	ND (0.0568)	10	1	04/07/11 12:17		CD10520
Aroclor 1268	ND (0.0568)	10	1	04/07/11 12:17		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	82 %		30-150
Surrogate: Decachlorobiphenyl [2C]	84 %		30-150
Surrogate: Tetrachloro-m-xylene	80 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	88 %		30-150

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-25 1.5ft
 Date Sampled: 04/06/11 08:20
 Percent Solids: 95
 Initial Volume: 32.4
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-09
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0540)	220	1	04/06/11 17:47	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0270)	29	1	04/06/11 17:47	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0270)	100	1	04/06/11 17:47	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0270)	9.5	1	04/06/11 17:47	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.162)	4.1	1	04/06/11 17:47	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0270)	0.07	1	04/06/11 17:47	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0270)	63	1	04/06/11 17:47	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0270)	84	1	04/06/11 17:47	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0270)	240	1	04/06/11 17:47	CUD0029	CD10608
1,4-Dioxane - Screen	ND (2.70)		1	04/06/11 17:47	CUD0029	CD10608
1-Chlorohexane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0540)		1	04/06/11 17:47	CUD0029	CD10608
2-Butanone	ND (0.675)	10000	1	04/06/11 17:47	CUD0029	CD10608
2-Chlorotoluene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
2-Hexanone	ND (0.270)		1	04/06/11 17:47	CUD0029	CD10608
4-Chlorotoluene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.270)	10000	1	04/06/11 17:47	CUD0029	CD10608
Acetone	ND (0.675)	10000	1	04/06/11 17:47	CUD0029	CD10608
Benzene	ND (0.0270)	200	1	04/06/11 17:47	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-25 1.5ft
Date Sampled: 04/06/11 08:20
Percent Solids: 95
Initial Volume: 32.4
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Bromochloromethane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Bromodichloromethane	ND (0.0270)	92	1	04/06/11 17:47	CUD0029	CD10608
Bromoform	ND (0.0270)	720	1	04/06/11 17:47	CUD0029	CD10608
Bromomethane	ND (0.0540)	2900	1	04/06/11 17:47	CUD0029	CD10608
Carbon Disulfide	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0270)	44	1	04/06/11 17:47	CUD0029	CD10608
Chlorobenzene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
Chloroethane	ND (0.0540)		1	04/06/11 17:47	CUD0029	CD10608
Chloroform	ND (0.0270)	940	1	04/06/11 17:47	CUD0029	CD10608
Chloromethane	ND (0.0540)		1	04/06/11 17:47	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Dibromochloromethane	ND (0.0270)	68	1	04/06/11 17:47	CUD0029	CD10608
Dibromomethane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Diethyl Ether	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Di-isopropyl ether	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Ethylbenzene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0270)	73	1	04/06/11 17:47	CUD0029	CD10608
Isopropylbenzene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
Methylene Chloride	ND (0.135)	760	1	04/06/11 17:47	CUD0029	CD10608
Naphthalene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
n-Butylbenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
n-Propylbenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
sec-Butylbenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Styrene	ND (0.0270)	190	1	04/06/11 17:47	CUD0029	CD10608
tert-Butylbenzene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-25 1.5ft
 Date Sampled: 04/06/11 08:20
 Percent Solids: 95
 Initial Volume: 32.4
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-09
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0270)	110	1	04/06/11 17:47	CUD0029	CD10608
Tetrahydrofuran	ND (0.270)		1	04/06/11 17:47	CUD0029	CD10608
Toluene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Trichloroethene	ND (0.0270)	520	1	04/06/11 17:47	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0270)		1	04/06/11 17:47	CUD0029	CD10608
Vinyl Acetate	ND (0.135)		1	04/06/11 17:47	CUD0029	CD10608
Vinyl Chloride	ND (0.0270)	3	1	04/06/11 17:47	CUD0029	CD10608
Xylene O	ND (0.0270)	10000	1	04/06/11 17:47	CUD0029	CD10608
Xylene P,M	ND (0.0540)	10000	1	04/06/11 17:47	CUD0029	CD10608
Xylenes (Total)	ND (0.0810)	10000	1	04/06/11 17:47		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	110 %		70-130
Surrogate: 4-Bromofluorobenzene	106 %		70-130
Surrogate: Dibromofluoromethane	110 %		70-130
Surrogate: Toluene-d8	101 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-25 1.5ft
 Date Sampled: 04/06/11 08:20
 Percent Solids: 95
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-09
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1221	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1232	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1242	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1248	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1254	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1260	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1262	ND (0.0526)	10	1	04/07/11 12:36		CD10520
Aroclor 1268	ND (0.0526)	10	1	04/07/11 12:36		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	90 %		30-150
Surrogate: Decachlorobiphenyl [2C]	88 %		30-150
Surrogate: Tetrachloro-m-xylene	86 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	96 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-25 1.5ft
 Date Sampled: 04/06/11 08:20
 Percent Solids: 95
 Initial Volume: 19.8
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-09
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 18:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	ND (39.9)	2500	1	04/07/11 12:29	CUD0037	CD10614
	<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: GRS-25 1.5ft
 Date Sampled: 04/06/11 08:20
 Percent Solids: 95
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-09
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 18:30

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Acenaphthene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Acenaphthylene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Anthracene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Benzo(a)anthracene	ND (0.351)	7.8	1	04/07/11 12:55	CUD0034	CD10615
Benzo(a)pyrene	ND (0.176)	0.8	1	04/07/11 12:55	CUD0034	CD10615
Benzo(b)fluoranthene	ND (0.351)	7.8	1	04/07/11 12:55	CUD0034	CD10615
Benzo(g,h,i)perylene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Benzo(k)fluoranthene	ND (0.351)	78	1	04/07/11 12:55	CUD0034	CD10615
Chrysene	ND (0.176)	780	1	04/07/11 12:55	CUD0034	CD10615
Dibenzo(a,h)Anthracene	ND (0.176)	0.8	1	04/07/11 12:55	CUD0034	CD10615
Fluoranthene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Fluorene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Indeno(1,2,3-cd)Pyrene	ND (0.351)	7.8	1	04/07/11 12:55	CUD0034	CD10615
Naphthalene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Phenanthrene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615
Pyrene	ND (0.351)	10000	1	04/07/11 12:55	CUD0034	CD10615

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichlorobenzene-d4	66 %		30-130
Surrogate: 2-Fluorobiphenyl	71 %		30-130
Surrogate: Nitrobenzene-d5	63 %		30-130
Surrogate: p-Terphenyl-d14	89 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-25 1.5ft
Date Sampled: 04/06/11 08:20
Percent Solids: 95

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-09
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Total Organic Carbon	1200 (100)	§				§	04/11/11 0:00	mg/kg	CD11220



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-BD-040611-1.5ft
Date Sampled: 04/06/11 08:25
Percent Solids: 95
Initial Volume: 28.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0611)	220	1	04/06/11 18:16	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0305)	29	1	04/06/11 18:16	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0305)	100	1	04/06/11 18:16	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0305)	9.5	1	04/06/11 18:16	CUD0029	CD10608
1,1-Dichloropropene	0.306 (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.183)	4.1	1	04/06/11 18:16	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0305)	0.07	1	04/06/11 18:16	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0305)	63	1	04/06/11 18:16	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0305)	84	1	04/06/11 18:16	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0305)	240	1	04/06/11 18:16	CUD0029	CD10608
1,4-Dioxane - Screen	ND (3.05)		1	04/06/11 18:16	CUD0029	CD10608
1-Chlorohexane	0.0403 (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0611)		1	04/06/11 18:16	CUD0029	CD10608
2-Butanone	ND (0.763)	10000	1	04/06/11 18:16	CUD0029	CD10608
2-Chlorotoluene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
2-Hexanone	0.411 (0.305)		1	04/06/11 18:16	CUD0029	CD10608
4-Chlorotoluene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.305)	10000	1	04/06/11 18:16	CUD0029	CD10608
Acetone	ND (0.763)	10000	1	04/06/11 18:16	CUD0029	CD10608
Benzene	ND (0.0305)	200	1	04/06/11 18:16	CUD0029	CD10608

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-BD-040611-1.5ft
 Date Sampled: 04/06/11 08:25
 Percent Solids: 95
 Initial Volume: 28.3
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Bromochloromethane	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Bromodichloromethane	ND (0.0305)	92	1	04/06/11 18:16	CUD0029	CD10608
Bromoform	ND (0.0305)	720	1	04/06/11 18:16	CUD0029	CD10608
Bromomethane	ND (0.0611)	2900	1	04/06/11 18:16	CUD0029	CD10608
Carbon Disulfide	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Carbon Tetrachloride	0.259 (0.0305)	44	1	04/06/11 18:16	CUD0029	CD10608
Chlorobenzene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
Chloroethane	ND (0.0611)		1	04/06/11 18:16	CUD0029	CD10608
Chloroform	ND (0.0305)	940	1	04/06/11 18:16	CUD0029	CD10608
Chloromethane	0.0965 (0.0611)		1	04/06/11 18:16	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Dibromochloromethane	ND (0.0305)	68	1	04/06/11 18:16	CUD0029	CD10608
Dibromomethane	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Diethyl Ether	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Di-isopropyl ether	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Ethylbenzene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0305)	73	1	04/06/11 18:16	CUD0029	CD10608
Isopropylbenzene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
Methylene Chloride	ND (0.153)	760	1	04/06/11 18:16	CUD0029	CD10608
Naphthalene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
n-Butylbenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
n-Propylbenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
sec-Butylbenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Styrene	ND (0.0305)	190	1	04/06/11 18:16	CUD0029	CD10608
tert-Butylbenzene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-BD-040611-1.5ft
 Date Sampled: 04/06/11 08:25
 Percent Solids: 95
 Initial Volume: 28.3
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0305)	110	1	04/06/11 18:16	CUD0029	CD10608
Tetrahydrofuran	ND (0.305)		1	04/06/11 18:16	CUD0029	CD10608
Toluene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Trichloroethene	ND (0.0305)	520	1	04/06/11 18:16	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0305)		1	04/06/11 18:16	CUD0029	CD10608
Vinyl Acetate	ND (0.153)		1	04/06/11 18:16	CUD0029	CD10608
Vinyl Chloride	ND (0.0305)	3	1	04/06/11 18:16	CUD0029	CD10608
Xylene O	ND (0.0305)	10000	1	04/06/11 18:16	CUD0029	CD10608
Xylene P,M	ND (0.0611)	10000	1	04/06/11 18:16	CUD0029	CD10608
Xylenes (Total)	ND (0.0916)	10000	1	04/06/11 18:16		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	104 %		70-130
Surrogate: 4-Bromofluorobenzene	96 %		70-130
Surrogate: Dibromofluoromethane	103 %		70-130
Surrogate: Toluene-d8	93 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-BD-040611-1.5ft
 Date Sampled: 04/06/11 08:25
 Percent Solids: 95
 Initial Volume: 20.3
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1221	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1232	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1242	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1248	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1254	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1260	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1262	ND (0.0519)	10	1	04/07/11 12:55		CD10520
Aroclor 1268	ND (0.0519)	10	1	04/07/11 12:55		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	90 %		30-150
Surrogate: Decachlorobiphenyl [2C]	90 %		30-150
Surrogate: Tetrachloro-m-xylene	84 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	92 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-BD-040611-1.5ft
Date Sampled: 04/06/11 08:25
Percent Solids: 95
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 18:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	ND (39.3)	2500	1	04/07/11 13:04	CUD0037	CD10614
	<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: GRS-BD-040611-1.5ft
 Date Sampled: 04/06/11 08:25
 Percent Solids: 95
 Initial Volume: 15.1
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 18:30

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Acenaphthene	ND (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Acenaphthylene	ND (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Anthracene	ND (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Benzo(a)anthracene	0.954 (0.348)	7.8	1	04/07/11 13:25	CUD0034	CD10615
Benzo(a)pyrene	0.863 (0.175)	0.8	1	04/07/11 13:25	CUD0034	CD10615
Benzo(b)fluoranthene	1.27 (0.348)	7.8	1	04/07/11 13:25	CUD0034	CD10615
Benzo(g,h,i)perylene	0.540 (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Benzo(k)fluoranthene	0.442 (0.348)	78	1	04/07/11 13:25	CUD0034	CD10615
Chrysene	1.14 (0.175)	780	1	04/07/11 13:25	CUD0034	CD10615
Dibenzo(a,h)Anthracene	ND (0.175)	0.8	1	04/07/11 13:25	CUD0034	CD10615
Fluoranthene	2.49 (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Fluorene	ND (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Indeno(1,2,3-cd)Pyrene	0.587 (0.348)	7.8	1	04/07/11 13:25	CUD0034	CD10615
Naphthalene	ND (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Phenanthrene	2.28 (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615
Pyrene	2.15 (0.348)	10000	1	04/07/11 13:25	CUD0034	CD10615

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	66 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	72 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	63 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	94 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-BD-040611-1.5ft
Date Sampled: 04/06/11 08:25
Percent Solids: 95

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-10
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Total Organic Carbon	1510 (100)	§				§	04/11/11 0:00	mg/kg	CD11220



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-26
Date Sampled: 04/06/11 08:40
Percent Solids: 95

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-11
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 18:15	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:15	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:15	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-26
 Date Sampled: 04/06/11 08:40
 Percent Solids: 95

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-11
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

RI - IC DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.48)	6010B	1000	1	SVD	04/06/11 20:45	2.22	100	CD10616
Chromium	4.8 (0.9)	6010B	10000	1	SVD	04/06/11 20:45	2.22	100	CD10616
Lead	34.1 (4.7)	6010B	500	1	SVD	04/06/11 20:45	2.22	100	CD10616



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-26
 Date Sampled: 04/06/11 08:40
 Percent Solids: 95
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-11
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1221	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1232	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1242	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1248	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1254	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1260	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1262	ND (0.0526)	10	1	04/07/11 12:06		CD10619
Aroclor 1268	ND (0.0526)	10	1	04/07/11 12:06		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	79 %		30-150
Surrogate: Decachlorobiphenyl [2C]	75 %		30-150
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	84 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-BD-040611-0-3in
Date Sampled: 04/06/11 09:00
Percent Solids: 94

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-12
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 18:19	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:19	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:19	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-BD-040611-0-3in
 Date Sampled: 04/06/11 09:00
 Percent Solids: 94

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-12
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.47)	6010B	1000	1	SVD	04/06/11 20:49	2.27	100	CD10616	
Chromium	6.0 (0.9)	6010B	10000	1	SVD	04/06/11 20:49	2.27	100	CD10616	
Lead	43.5 (4.7)	6010B	500	1	SVD	04/06/11 20:49	2.27	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-BD-040611-0-3in
 Date Sampled: 04/06/11 09:00
 Percent Solids: 94
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-12
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1221	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1232	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1242	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1248	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1254	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1260	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1262	ND (0.0532)	10	1	04/07/11 12:35		CD10619
Aroclor 1268	ND (0.0532)	10	1	04/07/11 12:35		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	80 %		30-150
Surrogate: Decachlorobiphenyl [2C]	81 %		30-150
Surrogate: Tetrachloro-m-xylene	80 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	82 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-2 0-3in
 Date Sampled: 04/06/11 09:06
 Percent Solids: 93
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-13
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1221	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1232	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1242	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1248	1.86 (0.267)	10	5	04/07/11 16:27		CD10619
Aroclor 1254	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1260	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1262	ND (0.0535)	10	1	04/07/11 13:04		CD10619
Aroclor 1268	ND (0.0535)	10	1	04/07/11 13:04		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	77 %		30-150
Surrogate: Decachlorobiphenyl [2C]	75 %		30-150
Surrogate: Tetrachloro-m-xylene	77 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	80 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-2 9-12in
 Date Sampled: 04/06/11 09:09
 Percent Solids: 94
 Initial Volume: 20.4
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-14
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1221	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1232	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1242	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1248	0.161 (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1254	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1260	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1262	ND (0.0521)	10	1	04/07/11 13:33		CD10619
Aroclor 1268	ND (0.0521)	10	1	04/07/11 13:33		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	77 %		30-150
Surrogate: Decachlorobiphenyl [2C]	75 %		30-150
Surrogate: Tetrachloro-m-xylene	83 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	85 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-3 9-12
Date Sampled: 04/06/11 09:23
Percent Solids: 93
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1221	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1232	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1242	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1248	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1254	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1260	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1262	ND (0.0535)	10	1	04/07/11 14:02		CD10619
Aroclor 1268	ND (0.0535)	10	1	04/07/11 14:02		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	46 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	39 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	45 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	47 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-3 0-3in
 Date Sampled: 04/06/11 09:20
 Percent Solids: 97
 Initial Volume: 20.6
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-16
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1221	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1232	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1242	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1248	0.188 (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1254	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1260	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1262	ND (0.0500)	10	1	04/07/11 14:31		CD10619
Aroclor 1268	ND (0.0500)	10	1	04/07/11 14:31		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	37 %		30-150
Surrogate: Decachlorobiphenyl [2C]	35 %		30-150
Surrogate: Tetrachloro-m-xylene	32 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	33 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-4 0-3in
Date Sampled: 04/06/11 10:15
Percent Solids: 94
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1221	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1232	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1242	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1248	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1254	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1260	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1262	ND (0.0532)	10	1	04/08/11 10:00		CD10619
Aroclor 1268	ND (0.0532)	10	1	04/08/11 10:00		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	54 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	59 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	53 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	50 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-4 9-12in
 Date Sampled: 04/06/11 10:17
 Percent Solids: 95
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-18
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1221	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1232	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1242	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1248	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1254	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1260	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1262	ND (0.0524)	10	1	04/08/11 10:18		CD10619
Aroclor 1268	ND (0.0524)	10	1	04/08/11 10:18		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	71 %		30-150
Surrogate: Decachlorobiphenyl [2C]	73 %		30-150
Surrogate: Tetrachloro-m-xylene	89 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	77 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-3 0-3in
Date Sampled: 04/06/11 10:45
Percent Solids: 92

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-19
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 18:52	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 18:52	5	50	CD10704
Lead	0.221 (0.200)	1311/6010B	5	1	SVD	04/07/11 18:52	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 0-3in
 Date Sampled: 04/06/11 10:45
 Percent Solids: 92

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-19
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.46)	6010B	1000	1	SVD	04/06/11 21:12	2.35	100	CD10616	
Chromium	6.5 (0.9)	6010B	10000	1	SVD	04/06/11 21:12	2.35	100	CD10616	
Lead	47.4 (4.6)	6010B	500	1	SVD	04/06/11 21:12	2.35	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 0-3in
 Date Sampled: 04/06/11 10:45
 Percent Solids: 92
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-19
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1221	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1232	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1242	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1248	0.0713 (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1254	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1260	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1262	ND (0.0541)	10	1	04/07/11 15:59		CD10619
Aroclor 1268	ND (0.0541)	10	1	04/07/11 15:59		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	36 %		30-150
Surrogate: Decachlorobiphenyl [2C]	26 %	S-	30-150
Surrogate: Tetrachloro-m-xylene	32 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	33 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-3 36in
Date Sampled: 04/06/11 11:15
Percent Solids: 76

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-20
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	5.0 (2.9)	6010B	7	1	SVD	04/06/11 21:39	2.27	100	CD10616	
Lead	73.3 (5.8)	6010B	500	1	SVD	04/06/11 21:39	2.27	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 36in
 Date Sampled: 04/06/11 11:15
 Percent Solids: 76
 Initial Volume: 25
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-20
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.111)	220	1	04/06/11 18:46	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0553)	29	1	04/06/11 18:46	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0553)	100	1	04/06/11 18:46	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0553)	9.5	1	04/06/11 18:46	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
1,2,4-Trimethylbenzene	0.0995 (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.332)	4.1	1	04/06/11 18:46	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0553)	0.07	1	04/06/11 18:46	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0553)	63	1	04/06/11 18:46	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0553)	84	1	04/06/11 18:46	CUD0029	CD10608
1,3,5-Trimethylbenzene	0.0641 (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0553)	240	1	04/06/11 18:46	CUD0029	CD10608
1,4-Dioxane - Screen	ND (5.53)		1	04/06/11 18:46	CUD0029	CD10608
1-Chlorohexane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
2,2-Dichloropropane	ND (0.111)		1	04/06/11 18:46	CUD0029	CD10608
2-Butanone	ND (1.38)	10000	1	04/06/11 18:46	CUD0029	CD10608
2-Chlorotoluene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
2-Hexanone	ND (0.553)		1	04/06/11 18:46	CUD0029	CD10608
4-Chlorotoluene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.553)	10000	1	04/06/11 18:46	CUD0029	CD10608
Acetone	ND (1.38)	10000	1	04/06/11 18:46	CUD0029	CD10608
Benzene	0.103 (0.0553)	200	1	04/06/11 18:46	CUD0029	CD10608

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 36in
 Date Sampled: 04/06/11 11:15
 Percent Solids: 76
 Initial Volume: 25
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-20
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Bromochloromethane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Bromodichloromethane	ND (0.0553)	92	1	04/06/11 18:46	CUD0029	CD10608
Bromoform	ND (0.0553)	720	1	04/06/11 18:46	CUD0029	CD10608
Bromomethane	ND (0.111)	2900	1	04/06/11 18:46	CUD0029	CD10608
Carbon Disulfide	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0553)	44	1	04/06/11 18:46	CUD0029	CD10608
Chlorobenzene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
Chloroethane	ND (0.111)		1	04/06/11 18:46	CUD0029	CD10608
Chloroform	ND (0.0553)	940	1	04/06/11 18:46	CUD0029	CD10608
Chloromethane	ND (0.111)		1	04/06/11 18:46	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Dibromochloromethane	ND (0.0553)	68	1	04/06/11 18:46	CUD0029	CD10608
Dibromomethane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Diethyl Ether	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Di-isopropyl ether	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Ethylbenzene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0553)	73	1	04/06/11 18:46	CUD0029	CD10608
Isopropylbenzene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
Methylene Chloride	ND (0.276)	760	1	04/06/11 18:46	CUD0029	CD10608
Naphthalene	1.13 (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
n-Butylbenzene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
n-Propylbenzene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
sec-Butylbenzene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Styrene	ND (0.0553)	190	1	04/06/11 18:46	CUD0029	CD10608
tert-Butylbenzene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 36in
 Date Sampled: 04/06/11 11:15
 Percent Solids: 76
 Initial Volume: 25
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-20
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0553)	110	1	04/06/11 18:46	CUD0029	CD10608
Tetrahydrofuran	ND (0.553)		1	04/06/11 18:46	CUD0029	CD10608
Toluene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Trichloroethene	ND (0.0553)	520	1	04/06/11 18:46	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0553)		1	04/06/11 18:46	CUD0029	CD10608
Vinyl Acetate	ND (0.276)		1	04/06/11 18:46	CUD0029	CD10608
Vinyl Chloride	ND (0.0553)	3	1	04/06/11 18:46	CUD0029	CD10608
Xylene O	0.0729 (0.0553)	10000	1	04/06/11 18:46	CUD0029	CD10608
Xylene P,M	0.149 (0.111)	10000	1	04/06/11 18:46	CUD0029	CD10608
Xylenes (Total)	0.222 (0.166)	10000	1	04/06/11 18:46		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	133 %	S+	70-130
Surrogate: 4-Bromofluorobenzene	121 %		70-130
Surrogate: Dibromofluoromethane	131 %	S+	70-130
Surrogate: Toluene-d8	118 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 36in
 Date Sampled: 04/06/11 11:15
 Percent Solids: 76
 Initial Volume: 20.2
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-20
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1221	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1232	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1242	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1248	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1254	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1260	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1262	ND (0.0651)	10	1	04/07/11 13:14		CD10619
Aroclor 1268	ND (0.0651)	10	1	04/07/11 13:14		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	46 %		30-150
Surrogate: Decachlorobiphenyl [2C]	43 %		30-150
Surrogate: Tetrachloro-m-xylene	35 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	33 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-3 36in
 Date Sampled: 04/06/11 11:15
 Percent Solids: 76
 Initial Volume: 20.1
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-20
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 18:30

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	1520 (49.1)	2500	1	04/07/11 13:38	CUD0037	CD10614
		<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: GRS-3 36in
 Date Sampled: 04/06/11 11:15
 Percent Solids: 76
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-20
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 18:30

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Acenaphthene	ND (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Acenaphthylene	ND (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Anthracene	ND (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Benzo(a)anthracene	12.0 (4.38)	7.8	10	04/07/11 13:55	CUD0034	CD10615
Benzo(a)pyrene	10.8 (2.20)	0.8	10	04/07/11 13:55	CUD0034	CD10615
Benzo(b)fluoranthene	14.1 (4.38)	7.8	10	04/07/11 13:55	CUD0034	CD10615
Benzo(g,h,i)perylene	7.24 (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Benzo(k)fluoranthene	ND (4.38)	78	10	04/07/11 13:55	CUD0034	CD10615
Chrysene	10.3 (2.20)	780	10	04/07/11 13:55	CUD0034	CD10615
Dibenzo(a,h)Anthracene	ND (2.20)	0.8	10	04/07/11 13:55	CUD0034	CD10615
Fluoranthene	17.5 (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Fluorene	ND (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Indeno(1,2,3-cd)Pyrene	7.31 (4.38)	7.8	10	04/07/11 13:55	CUD0034	CD10615
Naphthalene	ND (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Phenanthrene	9.11 (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615
Pyrene	27.7 (4.38)	10000	10	04/07/11 13:55	CUD0034	CD10615

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	55 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	54 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	45 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	70 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-3 36in
Date Sampled: 04/06/11 11:15
Percent Solids: 76

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-20
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.26)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	18500 (100)	§			§	04/11/11 0:00	mg/kg	CD11220	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-2 0-3in
Date Sampled: 04/06/11 11:45
Percent Solids: 91

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-21
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/6/11 18:38

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/07/11 19:00	5	50	CD10704
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 19:00	5	50	CD10704
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/07/11 19:00	5	50	CD10704



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-2 0-3in
Date Sampled: 04/06/11 11:45
Percent Solids: 91

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-21
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.46)	6010B	1000	1	SVD	04/06/11 21:17	2.42	100	CD10616	
Chromium	7.3 (0.9)	6010B	10000	1	SVD	04/06/11 21:17	2.42	100	CD10616	
Lead	54.1 (4.5)	6010B	500	1	SVD	04/06/11 21:17	2.42	100	CD10616	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-2 0-3in
 Date Sampled: 04/06/11 11:45
 Percent Solids: 91
 Initial Volume: 20.3
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-21
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1221	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1232	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1242	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1248	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1254	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1260	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1262	ND (0.0541)	10	1	04/07/11 13:33		CD10619
Aroclor 1268	ND (0.0541)	10	1	04/07/11 13:33		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	41 %		30-150
Surrogate: Decachlorobiphenyl [2C]	43 %		30-150
Surrogate: Tetrachloro-m-xylene	35 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	38 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-5 0-3in
Date Sampled: 04/06/11 12:56
Percent Solids: 88
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-22
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1221	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1232	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1242	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1248	0.486 (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1254	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1260	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1262	ND (0.0568)	10	1	04/07/11 13:51		CD10619
Aroclor 1268	ND (0.0568)	10	1	04/07/11 13:51		CD10619

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	48 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	44 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	43 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	44 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-5 9-12in
Date Sampled: 04/06/11 12:58
Percent Solids: 91
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104050
ESS Laboratory Sample ID: 1104050-23
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1221	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1232	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1242	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1248	0.121 (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1254	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1260	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1262	ND (0.0552)	10	1	04/07/11 14:10		CD10619
Aroclor 1268	ND (0.0552)	10	1	04/07/11 14:10		CD10619

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	49 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	46 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	46 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	48 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-1 0-3in
 Date Sampled: 04/06/11 14:32
 Percent Solids: 71
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-24
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1221	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1232	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1242	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1248	2540 (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1254	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1260	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1262	ND (352)	10	5000	04/07/11 16:56		CD10619
Aroclor 1268	ND (352)	10	5000	04/07/11 16:56		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-1 9-12in
 Date Sampled: 04/06/11 14:35
 Percent Solids: 88
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-25
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1221	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1232	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1242	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1248	159 (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1254	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1260	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1262	ND (56.8)	10	1000	04/07/11 17:25		CD10619
Aroclor 1268	ND (56.8)	10	1000	04/07/11 17:25		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-1 21-24in
 Date Sampled: 04/06/11 14:38
 Percent Solids: 90
 Initial Volume: 20.2
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104050
 ESS Laboratory Sample ID: 1104050-26
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/6/11 17:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1221	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1232	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1242	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1248	63.6 (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1254	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1260	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1262	ND (5.50)	10	100	04/07/11 17:54		CD10619
Aroclor 1268	ND (5.50)	10	100	04/07/11 17:54		CD10619

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
1311/6000/7000 TCLP Metals										
Batch CD10704 - 3005A										
Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
LCS										
Cadmium	2.37	0.0500	mg/L	2.500		95	80-120			
Chromium	4.82	0.200	mg/L	5.000		96	80-120			
Lead	4.87	0.200	mg/L	5.000		97	80-120			
LCS Dup										
Cadmium	2.42	0.0500	mg/L	2.500		97	80-120	2	20	
Chromium	4.77	0.200	mg/L	5.000		95	80-120	1	20	
Lead	4.92	0.200	mg/L	5.000		98	80-120	1	20	
Duplicate Source: 1104050-12										
Cadmium	0.0229	0.0500	mg/L		0.0205			11	20	
Chromium	ND	0.200	mg/L		ND				20	
Lead	ND	0.200	mg/L		ND				20	
Duplicate Source: 1104050-21										
Cadmium	0.0195	0.0500	mg/L		0.0202			3	20	
Chromium	ND	0.200	mg/L		ND				20	
Lead	0.159	0.200	mg/L		0.134			17	20	
Matrix Spike Source: 1104050-12										
Cadmium	2.34	0.0500	mg/L	2.500	0.0205	93	75-125			
Chromium	4.73	0.200	mg/L	5.000	ND	95	75-125			
Lead	4.81	0.200	mg/L	5.000	ND	96	75-125			
Matrix Spike Source: 1104050-21										
Cadmium	2.30	0.0500	mg/L	2.500	0.0202	91	75-125			
Chromium	4.94	0.200	mg/L	5.000	ND	99	75-125			
Lead	4.94	0.200	mg/L	5.000	0.134	96	75-125			

3050B/6000/7000 Total Metals

Batch CD10616 - 3050B

Blank										
Arsenic	ND	2.5	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CD10616 - 3050B										
Lead	ND	5.0	mg/kg wet							
LCS										
Arsenic	93.4	9.1	mg/kg wet	92.60		101	80-120			
Cadmium	59.2	1.83	mg/kg wet	61.80		96	80-120			
Chromium	65.1	3.6	mg/kg wet	71.30		91	80-120			
Lead	90.0	18.2	mg/kg wet	92.40		97	80-120			
LCS Dup										
Arsenic	91.0	9.1	mg/kg wet	92.60		98	80-120	3	20	
Cadmium	60.8	1.83	mg/kg wet	61.80		98	80-120	3	20	
Chromium	66.7	3.6	mg/kg wet	71.30		94	80-120	2	20	
Lead	91.6	18.2	mg/kg wet	92.40		99	80-120	2	20	
Duplicate Source: 1104050-12										
Arsenic	2.43	2.3	mg/kg dry		2.26			7	35	
Cadmium	ND	0.47	mg/kg dry		ND				35	
Chromium	5.15	0.9	mg/kg dry		5.99			15	35	
Lead	33.2	4.7	mg/kg dry		43.5			27	35	
Duplicate Source: 1104050-20										
Arsenic	5.68	2.8	mg/kg dry		4.97			13	35	
Cadmium	ND	0.57	mg/kg dry		ND				35	
Chromium	6.97	1.1	mg/kg dry		7.34			5	35	
Lead	69.4	5.6	mg/kg dry		73.3			5	35	
Matrix Spike Source: 1104050-12										
Arsenic	21.6	2.3	mg/kg dry	22.73	2.26	85	75-125			
Cadmium	9.74	0.46	mg/kg dry	11.37	ND	86	75-125			
Chromium	25.3	0.9	mg/kg dry	22.73	5.99	85	75-125			
Lead	53.7	4.5	mg/kg dry	22.73	43.5	45	75-125			M-
Matrix Spike Source: 1104050-20										
Arsenic	29.3	2.7	mg/kg dry	27.41	4.97	89	75-125			
Cadmium	11.6	0.55	mg/kg dry	13.71	ND	85	75-125			
Chromium	31.6	1.1	mg/kg dry	27.41	7.34	89	75-125			
Lead	99.3	5.5	mg/kg dry	27.41	73.3	95	75-125			

5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							
2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							
Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	ND	0.0500	mg/kg wet							
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Dibromochloromethane	ND	0.0500	mg/kg wet							
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							
Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							
Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	2.37		mg/kg wet	2.500		95	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	2.22		mg/kg wet	2.500		89	70-130			
<i>Surrogate: Dibromofluoromethane</i>	2.36		mg/kg wet	2.500		94	70-130			
<i>Surrogate: Toluene-d8</i>	2.09		mg/kg wet	2.500		84	70-130			

LCS

1,1,1,2-Tetrachloroethane	2.31	0.100	mg/kg wet	2.500		92	70-130			
1,1,1-Trichloroethane	2.52	0.0500	mg/kg wet	2.500		101	70-130			
1,1,2,2-Tetrachloroethane	2.51	0.0500	mg/kg wet	2.500		100	70-130			
1,1,2-Trichloroethane	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,1-Dichloroethane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,1-Dichloroethene	2.51	0.0500	mg/kg wet	2.500		101	70-130			
1,1-Dichloropropene	2.56	0.0500	mg/kg wet	2.500		103	70-130			
1,2,3-Trichlorobenzene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
1,2,3-Trichloropropane	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,2,4-Trichlorobenzene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,2,4-Trimethylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
1,2-Dibromo-3-Chloropropane	2.60	0.300	mg/kg wet	2.500		104	70-130			
1,2-Dibromoethane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
1,2-Dichlorobenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
1,2-Dichloroethane	2.80	0.0500	mg/kg wet	2.500		112	70-130			
1,2-Dichloropropane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,3,5-Trimethylbenzene	2.47	0.0500	mg/kg wet	2.500		99	70-130			
1,3-Dichlorobenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
1,3-Dichloropropane	2.34	0.0500	mg/kg wet	2.500		94	70-130			
1,4-Dichlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,4-Dioxane - Screen	54.4	5.00	mg/kg wet	50.00		109	44-241			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
1-Chlorohexane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
2,2-Dichloropropane	2.65	0.100	mg/kg wet	2.500		106	70-130			
2-Butanone	13.0	1.25	mg/kg wet	12.50		104	70-130			
2-Chlorotoluene	2.27	0.0500	mg/kg wet	2.500		91	70-130			
2-Hexanone	13.2	0.500	mg/kg wet	12.50		106	70-130			
4-Chlorotoluene	2.39	0.0500	mg/kg wet	2.500		95	70-130			
4-Isopropyltoluene	2.21	0.0500	mg/kg wet	2.500		88	70-130			
4-Methyl-2-Pentanone	12.6	0.500	mg/kg wet	12.50		101	70-130			
Acetone	10.9	1.25	mg/kg wet	12.50		88	70-130			
Benzene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
Bromobenzene	2.40	0.0500	mg/kg wet	2.500		96	70-130			
Bromochloromethane	2.32	0.0500	mg/kg wet	2.500		93	70-130			
Bromodichloromethane	2.70	0.0500	mg/kg wet	2.500		108	70-130			
Bromoform	2.60	0.0500	mg/kg wet	2.500		104	70-130			
Bromomethane	3.46	0.100	mg/kg wet	2.500		138	70-130			B+
Carbon Disulfide	2.50	0.0500	mg/kg wet	2.500		100	70-130			
Carbon Tetrachloride	2.82	0.0500	mg/kg wet	2.500		113	70-130			
Chlorobenzene	2.33	0.0500	mg/kg wet	2.500		93	70-130			
Chloroethane	3.27	0.100	mg/kg wet	2.500		131	70-130			B+
Chloroform	2.46	0.0500	mg/kg wet	2.500		98	70-130			
Chloromethane	2.27	0.100	mg/kg wet	2.500		91	70-130			
cis-1,2-Dichloroethene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
cis-1,3-Dichloropropene	2.53	0.0500	mg/kg wet	2.500		101	70-130			
Dibromochloromethane	2.58	0.0500	mg/kg wet	2.500		103	70-130			
Dibromomethane	2.32	0.0500	mg/kg wet	2.500		93	70-130			
Dichlorodifluoromethane	1.97	0.0500	mg/kg wet	2.500		79	70-130			
Diethyl Ether	2.37	0.0500	mg/kg wet	2.500		95	70-130			
Di-isopropyl ether	2.50	0.0500	mg/kg wet	2.500		100	70-130			
Ethyl tertiary-butyl ether	2.51	0.0500	mg/kg wet	2.500		100	70-130			
Ethylbenzene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
Hexachlorobutadiene	2.56	0.0500	mg/kg wet	2.500		102	70-130			
Isopropylbenzene	2.00	0.0500	mg/kg wet	2.500		80	70-130			
Methyl tert-Butyl Ether	2.52	0.0500	mg/kg wet	2.500		101	70-130			
Methylene Chloride	2.59	0.250	mg/kg wet	2.500		104	70-130			
Naphthalene	2.70	0.0500	mg/kg wet	2.500		108	70-130			
n-Butylbenzene	2.64	0.0500	mg/kg wet	2.500		106	70-130			
n-Propylbenzene	2.52	0.0500	mg/kg wet	2.500		101	70-130			
sec-Butylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Styrene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
tert-Butylbenzene	2.36	0.0500	mg/kg wet	2.500		94	70-130			
Tertiary-amyl methyl ether	2.49	0.0500	mg/kg wet	2.500		99	70-130			
Tetrachloroethene	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Tetrahydrofuran	2.34	0.500	mg/kg wet	2.500		93	70-130			
Toluene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
trans-1,2-Dichloroethene	2.29	0.0500	mg/kg wet	2.500		92	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
trans-1,3-Dichloropropene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
Trichloroethene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
Vinyl Acetate	2.80	0.250	mg/kg wet	2.500		112	70-130			
Vinyl Chloride	2.57	0.0500	mg/kg wet	2.500		103	70-130			
Xylene O	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Xylene P,M	4.72	0.100	mg/kg wet	5.000		94	70-130			
Surrogate: 1,2-Dichloroethane-d4	2.43		mg/kg wet	2.500		97	70-130			
Surrogate: 4-Bromofluorobenzene	2.21		mg/kg wet	2.500		89	70-130			
Surrogate: Dibromofluoromethane	2.33		mg/kg wet	2.500		93	70-130			
Surrogate: Toluene-d8	2.16		mg/kg wet	2.500		87	70-130			
LCS Dup										
1,1,1,2-Tetrachloroethane	2.28	0.100	mg/kg wet	2.500		91	70-130	1	25	
1,1,1-Trichloroethane	2.44	0.0500	mg/kg wet	2.500		98	70-130	3	25	
1,1,2,2-Tetrachloroethane	2.54	0.0500	mg/kg wet	2.500		102	70-130	1	25	
1,1,2-Trichloroethane	2.41	0.0500	mg/kg wet	2.500		96	70-130	0.2	25	
1,1-Dichloroethane	2.39	0.0500	mg/kg wet	2.500		96	70-130	1	25	
1,1-Dichloroethene	2.43	0.0500	mg/kg wet	2.500		97	70-130	3	25	
1,1-Dichloropropene	2.50	0.0500	mg/kg wet	2.500		100	70-130	2	25	
1,2,3-Trichlorobenzene	2.42	0.0500	mg/kg wet	2.500		97	70-130	0.5	25	
1,2,3-Trichloropropane	2.42	0.0500	mg/kg wet	2.500		97	70-130	2	25	
1,2,4-Trichlorobenzene	2.52	0.0500	mg/kg wet	2.500		101	70-130	5	25	
1,2,4-Trimethylbenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130	0.4	25	
1,2-Dibromo-3-Chloropropane	2.65	0.300	mg/kg wet	2.500		106	70-130	2	25	
1,2-Dibromoethane	2.38	0.0500	mg/kg wet	2.500		95	70-130	0.9	25	
1,2-Dichlorobenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130	0.3	25	
1,2-Dichloroethane	2.80	0.0500	mg/kg wet	2.500		112	70-130	0.1	25	
1,2-Dichloropropane	2.37	0.0500	mg/kg wet	2.500		95	70-130	2	25	
1,3,5-Trimethylbenzene	2.43	0.0500	mg/kg wet	2.500		97	70-130	1	25	
1,3-Dichlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	1	25	
1,3-Dichloropropane	2.32	0.0500	mg/kg wet	2.500		93	70-130	1	25	
1,4-Dichlorobenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130	1	25	
1,4-Dioxane - Screen	55.8	5.00	mg/kg wet	50.00		112	44-241	3	200	
1-Chlorohexane	2.37	0.0500	mg/kg wet	2.500		95	70-130	1	25	
2,2-Dichloropropane	2.56	0.100	mg/kg wet	2.500		103	70-130	3	25	
2-Butanone	13.5	1.25	mg/kg wet	12.50		108	70-130	4	25	
2-Chlorotoluene	2.48	0.0500	mg/kg wet	2.500		99	70-130	9	25	
2-Hexanone	13.1	0.500	mg/kg wet	12.50		105	70-130	1	25	
4-Chlorotoluene	2.34	0.0500	mg/kg wet	2.500		94	70-130	2	25	
4-Isopropyltoluene	2.19	0.0500	mg/kg wet	2.500		88	70-130	1	25	
4-Methyl-2-Pentanone	12.9	0.500	mg/kg wet	12.50		103	70-130	2	25	
Acetone	12.9	1.25	mg/kg wet	12.50		103	70-130	16	25	
Benzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	1	25	
Bromobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	0.9	25	
Bromochloromethane	2.26	0.0500	mg/kg wet	2.500		90	70-130	3	25	
Bromodichloromethane	2.64	0.0500	mg/kg wet	2.500		105	70-130	2	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
Bromoform	2.57	0.0500	mg/kg wet	2.500		103	70-130	0.9	25	
Bromomethane	3.35	0.100	mg/kg wet	2.500		134	70-130	3	25	B+
Carbon Disulfide	2.54	0.0500	mg/kg wet	2.500		101	70-130	1	25	
Carbon Tetrachloride	2.74	0.0500	mg/kg wet	2.500		109	70-130	3	25	
Chlorobenzene	2.32	0.0500	mg/kg wet	2.500		93	70-130	0.6	25	
Chloroethane	3.19	0.100	mg/kg wet	2.500		128	70-130	2	25	
Chloroform	2.44	0.0500	mg/kg wet	2.500		97	70-130	1	25	
Chloromethane	2.22	0.100	mg/kg wet	2.500		89	70-130	2	25	
cis-1,2-Dichloroethene	2.45	0.0500	mg/kg wet	2.500		98	70-130	0.4	25	
cis-1,3-Dichloropropene	2.48	0.0500	mg/kg wet	2.500		99	70-130	2	25	
Dibromochloromethane	2.59	0.0500	mg/kg wet	2.500		104	70-130	0.2	25	
Dibromomethane	2.33	0.0500	mg/kg wet	2.500		93	70-130	0.5	25	
Dichlorodifluoromethane	1.92	0.0500	mg/kg wet	2.500		77	70-130	3	25	
Diethyl Ether	2.35	0.0500	mg/kg wet	2.500		94	70-130	0.8	25	
Di-isopropyl ether	2.50	0.0500	mg/kg wet	2.500		100	70-130	0.08	25	
Ethyl tertiary-butyl ether	2.49	0.0500	mg/kg wet	2.500		100	70-130	0.8	25	
Ethylbenzene	2.37	0.0500	mg/kg wet	2.500		95	70-130	2	25	
Hexachlorobutadiene	2.66	0.0500	mg/kg wet	2.500		106	70-130	4	25	
Isopropylbenzene	1.98	0.0500	mg/kg wet	2.500		79	70-130	0.9	25	
Methyl tert-Butyl Ether	2.55	0.0500	mg/kg wet	2.500		102	70-130	1	25	
Methylene Chloride	2.57	0.250	mg/kg wet	2.500		103	70-130	0.9	25	
Naphthalene	2.82	0.0500	mg/kg wet	2.500		113	70-130	4	25	
n-Butylbenzene	2.63	0.0500	mg/kg wet	2.500		105	70-130	0.6	25	
n-Propylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130	7	25	
sec-Butylbenzene	2.31	0.0500	mg/kg wet	2.500		92	70-130	2	25	
Styrene	2.40	0.0500	mg/kg wet	2.500		96	70-130	1	25	
tert-Butylbenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130	0.6	25	
Tertiary-amyl methyl ether	2.49	0.0500	mg/kg wet	2.500		100	70-130	0.08	25	
Tetrachloroethene	2.19	0.0500	mg/kg wet	2.500		88	70-130	3	25	
Tetrahydrofuran	2.49	0.500	mg/kg wet	2.500		99	70-130	6	25	
Toluene	2.40	0.0500	mg/kg wet	2.500		96	70-130	1	25	
trans-1,2-Dichloroethene	2.27	0.0500	mg/kg wet	2.500		91	70-130	1	25	
trans-1,3-Dichloropropene	2.40	0.0500	mg/kg wet	2.500		96	70-130	0.4	25	
Trichloroethene	2.39	0.0500	mg/kg wet	2.500		96	70-130	2	25	
Vinyl Acetate	2.77	0.250	mg/kg wet	2.500		111	70-130	1	25	
Vinyl Chloride	2.50	0.0500	mg/kg wet	2.500		100	70-130	2	25	
Xylene O	2.30	0.0500	mg/kg wet	2.500		92	70-130	2	25	
Xylene P,M	4.64	0.100	mg/kg wet	5.000		93	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	2.46		mg/kg wet	2.500		98	70-130			
Surrogate: 4-Bromofluorobenzene	2.24		mg/kg wet	2.500		90	70-130			
Surrogate: Dibromofluoromethane	2.32		mg/kg wet	2.500		93	70-130			
Surrogate: Toluene-d8	2.15		mg/kg wet	2.500		86	70-130			

8082 Polychlorinated Biphenyls (PCB)

Batch CD10520 - 3540



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD10520 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
<i>Surrogate: Decachlorobiphenyl</i>	0.0228		mg/kg wet	0.02500		91	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0223		mg/kg wet	0.02500		89	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0229		mg/kg wet	0.02500		92	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0236		mg/kg wet	0.02500		94	30-150			
LCS										
Aroclor 1016	0.493	0.0500	mg/kg wet	0.5000		99	40-140			
Aroclor 1260	0.454	0.0500	mg/kg wet	0.5000		91	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	0.0244		mg/kg wet	0.02500		97	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0239		mg/kg wet	0.02500		95	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0249		mg/kg wet	0.02500		100	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0251		mg/kg wet	0.02500		101	30-150			
LCS Dup										
Aroclor 1016	0.492	0.0500	mg/kg wet	0.5000		98	40-140	0.2	50	
Aroclor 1260	0.458	0.0500	mg/kg wet	0.5000		92	40-140	1	50	
<i>Surrogate: Decachlorobiphenyl</i>	0.0245		mg/kg wet	0.02500		98	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0241		mg/kg wet	0.02500		96	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0236		mg/kg wet	0.02500		94	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0237		mg/kg wet	0.02500		95	30-150			
Batch CD10619 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
<i>Surrogate: Decachlorobiphenyl</i>	0.0180		mg/kg wet	0.02500		72	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0184		mg/kg wet	0.02500		73	30-150			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082 Polychlorinated Biphenyls (PCB)

Batch CD10619 - 3540

Surrogate: Tetrachloro-m-xylene	0.0185		mg/kg wet	0.02500		74	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0193		mg/kg wet	0.02500		77	30-150			
LCS										
Aroclor 1016	0.423	0.0500	mg/kg wet	0.5000		85	40-140			
Aroclor 1260	0.384	0.0500	mg/kg wet	0.5000		77	40-140			
Surrogate: Decachlorobiphenyl	0.0206		mg/kg wet	0.02500		83	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0208		mg/kg wet	0.02500		83	30-150			
Surrogate: Tetrachloro-m-xylene	0.0211		mg/kg wet	0.02500		84	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0217		mg/kg wet	0.02500		87	30-150			

LCS Dup										
Aroclor 1016	0.425	0.0500	mg/kg wet	0.5000		85	40-140	0.4	50	
Aroclor 1260	0.381	0.0500	mg/kg wet	0.5000		76	40-140	0.6	50	

Surrogate: Decachlorobiphenyl	0.0204		mg/kg wet	0.02500		82	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0201		mg/kg wet	0.02500		80	30-150			
Surrogate: Tetrachloro-m-xylene	0.0207		mg/kg wet	0.02500		83	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0210		mg/kg wet	0.02500		84	30-150			

8100M Total Petroleum Hydrocarbons

Batch CD10614 - 3546

Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacotane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	4.54		mg/kg wet	5.000		91	40-140			
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LCS										
Decane (C10)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Docosane (C22)	2.7	0.2	mg/kg wet	2.500		106	40-140			
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		96	40-140			
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Hexacosane (C26)	2.6	0.2	mg/kg wet	2.500		103	40-140			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CD10614 - 3546										
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		67	30-140			
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		97	40-140			
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		106	40-140			
Tetradecane (C14)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Total Petroleum Hydrocarbons	36.1	37.5	mg/kg wet	35.00		103	40-140			
Triacontane (C30)	2.0	0.2	mg/kg wet	2.500		79	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>4.58</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>92</i>	<i>40-140</i>			
LCS Dup										
Decane (C10)	2.0	0.2	mg/kg wet	2.500		79	40-140	2	50	
Docosane (C22)	2.6	0.2	mg/kg wet	2.500		105	40-140	0.7	50	
Dodecane (C12)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	50	
Eicosane (C20)	2.7	0.2	mg/kg wet	2.500		106	40-140	0.2	50	
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		102	40-140	2	50	
Hexadecane (C16)	2.5	0.2	mg/kg wet	2.500		100	40-140	1	50	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		98	40-140	0.2	50	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		65	30-140	2	50	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	50	
Octadecane (C18)	2.6	0.2	mg/kg wet	2.500		103	40-140	0.5	50	
Tetracosane (C24)	2.6	0.2	mg/kg wet	2.500		104	40-140	1	50	
Tetradecane (C14)	2.4	0.2	mg/kg wet	2.500		98	40-140	1	50	
Total Petroleum Hydrocarbons	35.7	37.5	mg/kg wet	35.00		102	40-140	1	50	
Triacontane (C30)	2.0	0.2	mg/kg wet	2.500		78	40-140	1	50	
<i>Surrogate: O-Terphenyl</i>	<i>4.54</i>		<i>mg/kg wet</i>	<i>5.000</i>		<i>91</i>	<i>40-140</i>			
Matrix Spike Source: 1104050-20										
Decane (C10)	3.5	0.2	mg/kg dry	3.225	0.7	88	40-140			
Docosane (C22)	4.3	0.2	mg/kg dry	3.225	ND	133	40-140			
Dodecane (C12)	3.8	0.2	mg/kg dry	3.225	0.4	106	40-140			
Eicosane (C20)	3.9	0.2	mg/kg dry	3.225	1.7	67	40-140			
Hexacosane (C26)	3.9	0.2	mg/kg dry	3.225	0.5	105	40-140			
Hexadecane (C16)	4.1	0.2	mg/kg dry	3.225	0.6	108	40-140			
Nonadecane (C19)	4.3	0.2	mg/kg dry	3.225	1.3	93	40-140			
Nonane (C9)	2.7	0.2	mg/kg dry	3.225	0.9	55	30-140			
Octacosane (C28)	3.4	0.2	mg/kg dry	3.225	ND	106	40-140			
Octadecane (C18)	8.0	0.2	mg/kg dry	3.225	10.0	NR	40-140			M-
Tetracosane (C24)	2.9	0.2	mg/kg dry	3.225	2.4	16	40-140			M-
Tetradecane (C14)	3.9	0.2	mg/kg dry	3.225	0.8	97	40-140			
Total Petroleum Hydrocarbons	1770	48.4	mg/kg dry	45.15	1520	541	40-140			MT
Triacontane (C30)	3.7	0.2	mg/kg dry	3.225	ND	115	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>5.35</i>		<i>mg/kg dry</i>	<i>6.450</i>		<i>83</i>	<i>40-140</i>			
Matrix Spike Dup Source: 1104050-20										

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CD10614 - 3546

Decane (C10)	3.8	0.2	mg/kg dry	3.306	0.7	96	40-140	9	50	
Docosane (C22)	5.6	0.2	mg/kg dry	3.306	ND	169	40-140	26	50	M+
Dodecane (C12)	3.6	0.2	mg/kg dry	3.306	0.4	97	40-140	5	50	
Eicosane (C20)	7.2	0.2	mg/kg dry	3.306	1.7	166	40-140	60	50	D+, M+
Hexacosane (C26)	3.7	0.2	mg/kg dry	3.306	0.5	97	40-140	5	50	
Hexadecane (C16)	3.9	0.2	mg/kg dry	3.306	0.6	100	40-140	4	50	
Nonadecane (C19)	3.7	0.2	mg/kg dry	3.306	1.3	71	40-140	16	50	
Nonane (C9)	2.6	0.2	mg/kg dry	3.306	0.9	51	30-140	3	50	
Octacosane (C28)	3.5	0.2	mg/kg dry	3.306	ND	107	40-140	3	50	
Octadecane (C18)	20.8	0.2	mg/kg dry	3.306	10.0	327	40-140	89	50	D+, M+
Tetracosane (C24)	4.1	0.2	mg/kg dry	3.306	2.4	51	40-140	33	50	
Tetradecane (C14)	3.9	0.2	mg/kg dry	3.306	0.8	95	40-140	0.4	50	
Total Petroleum Hydrocarbons	1730	49.6	mg/kg dry	46.28	1520	446	40-140	2	50	MT
Triacotane (C30)	3.9	0.2	mg/kg dry	3.306	ND	117	40-140	3	50	

Surrogate: *O-Terphenyl* 4.71 mg/kg dry 6.612 71 40-140

8270C Polynuclear Aromatic Hydrocarbons

Batch CD10615 - 3546

Blank

2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.64		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorobiphenyl	2.77		mg/kg wet	3.333		83	30-130			
Surrogate: Nitrobenzene-d5	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: p-Terphenyl-d14	3.52		mg/kg wet	3.333		106	30-130			

LCS

2-Methylnaphthalene	2.71	0.333	mg/kg wet	3.333		81	40-140			
Acenaphthene	3.39	0.333	mg/kg wet	3.333		102	40-140			
Acenaphthylene	2.79	0.333	mg/kg wet	3.333		84	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Polynuclear Aromatic Hydrocarbons

Batch CD10615 - 3546

Anthracene	3.90	0.333	mg/kg wet	3.333		117	40-140			
Benzo(a)anthracene	3.88	0.333	mg/kg wet	3.333		116	40-140			
Benzo(a)pyrene	3.98	0.167	mg/kg wet	3.333		119	40-140			
Benzo(b)fluoranthene	3.96	0.333	mg/kg wet	3.333		119	40-140			
Benzo(g,h,i)perylene	3.82	0.333	mg/kg wet	3.333		115	40-140			
Benzo(k)fluoranthene	3.90	0.333	mg/kg wet	3.333		117	40-140			
Chrysene	4.02	0.167	mg/kg wet	3.333		120	40-140			
Dibenzo(a,h)Anthracene	3.69	0.167	mg/kg wet	3.333		111	40-140			
Fluoranthene	3.40	0.333	mg/kg wet	3.333		102	40-140			
Fluorene	3.77	0.333	mg/kg wet	3.333		113	40-140			
Indeno(1,2,3-cd)Pyrene	3.66	0.333	mg/kg wet	3.333		110	40-140			
Naphthalene	2.58	0.333	mg/kg wet	3.333		77	40-140			
Phenanthrene	3.92	0.333	mg/kg wet	3.333		118	40-140			
Pyrene	3.95	0.333	mg/kg wet	3.333		118	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.32		mg/kg wet	3.333		70	30-130			
Surrogate: 2-Fluorobiphenyl	2.40		mg/kg wet	3.333		72	30-130			
Surrogate: Nitrobenzene-d5	2.12		mg/kg wet	3.333		64	30-130			
Surrogate: p-Terphenyl-d14	3.00		mg/kg wet	3.333		90	30-130			

LCS Dup

2-Methylnaphthalene	2.65	0.333	mg/kg wet	3.333		80	40-140	2	30	
Acenaphthene	3.32	0.333	mg/kg wet	3.333		100	40-140	2	30	
Acenaphthylene	2.72	0.333	mg/kg wet	3.333		82	40-140	2	30	
Anthracene	3.94	0.333	mg/kg wet	3.333		118	40-140	1	30	
Benzo(a)anthracene	3.93	0.333	mg/kg wet	3.333		118	40-140	1	30	
Benzo(a)pyrene	4.13	0.167	mg/kg wet	3.333		124	40-140	4	30	
Benzo(b)fluoranthene	4.12	0.333	mg/kg wet	3.333		124	40-140	4	30	
Benzo(g,h,i)perylene	3.79	0.333	mg/kg wet	3.333		114	40-140	0.9	30	
Benzo(k)fluoranthene	3.75	0.333	mg/kg wet	3.333		113	40-140	4	30	
Chrysene	4.05	0.167	mg/kg wet	3.333		122	40-140	0.9	30	
Dibenzo(a,h)Anthracene	3.59	0.167	mg/kg wet	3.333		108	40-140	3	30	
Fluoranthene	3.44	0.333	mg/kg wet	3.333		103	40-140	1	30	
Fluorene	3.59	0.333	mg/kg wet	3.333		108	40-140	5	30	
Indeno(1,2,3-cd)Pyrene	3.65	0.333	mg/kg wet	3.333		110	40-140	0.2	30	
Naphthalene	2.64	0.333	mg/kg wet	3.333		79	40-140	2	30	
Phenanthrene	3.98	0.333	mg/kg wet	3.333		119	40-140	2	30	
Pyrene	3.91	0.333	mg/kg wet	3.333		117	40-140	0.9	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.27		mg/kg wet	3.333		68	30-130			
Surrogate: 2-Fluorobiphenyl	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: Nitrobenzene-d5	2.20		mg/kg wet	3.333		66	30-130			
Surrogate: p-Terphenyl-d14	2.98		mg/kg wet	3.333		89	30-130			

Matrix Spike Source: 1104050-20

MM

2-Methylnaphthalene	4.04	4.38	mg/kg dry	4.386	ND	92	40-140			
Acenaphthene	5.13	4.38	mg/kg dry	4.386	ND	117	40-140			
Acenaphthylene	6.22	4.38	mg/kg dry	4.386	1.63	105	40-140			
Anthracene	7.81	4.38	mg/kg dry	4.386	1.80	137	40-140			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Polynuclear Aromatic Hydrocarbons

Batch CD10615 - 3546

Benzo(a)anthracene	26.9	4.38	mg/kg dry	4.386	12.0	341	40-140			
Benzo(a)pyrene	22.6	2.20	mg/kg dry	4.386	10.8	267	40-140			
Benzo(b)fluoranthene	24.6	4.38	mg/kg dry	4.386	14.1	239	40-140			
Benzo(g,h,i)perylene	15.1	4.38	mg/kg dry	4.386	7.24	180	40-140			
Benzo(k)fluoranthene	12.8	4.38	mg/kg dry	4.386	4.19	196	40-140			
Chrysene	25.6	2.20	mg/kg dry	4.386	10.3	348	40-140			
Dibenzo(a,h)Anthracene	4.74	2.20	mg/kg dry	4.386	1.46	75	40-140			
Fluoranthene	37.4	4.38	mg/kg dry	4.386	17.5	454	40-140			
Fluorene	6.81	4.38	mg/kg dry	4.386	1.43	123	40-140			
Indeno(1,2,3-cd)Pyrene	14.3	4.38	mg/kg dry	4.386	7.31	160	40-140			
Naphthalene	4.04	4.38	mg/kg dry	4.386	1.07	68	40-140			
Phenanthrene	26.0	4.38	mg/kg dry	4.386	9.11	386	40-140			
Pyrene	69.6	4.38	mg/kg dry	4.386	27.7	954	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.36		mg/kg dry	4.386		54	30-130			
Surrogate: 2-Fluorobiphenyl	2.70		mg/kg dry	4.386		61	30-130			
Surrogate: Nitrobenzene-d5	2.58		mg/kg dry	4.386		59	30-130			
Surrogate: p-Terphenyl-d14	3.24		mg/kg dry	4.386		74	30-130			

Matrix Spike Dup Source: 1104050-20

MM

2-Methylnaphthalene	3.82	4.35	mg/kg dry	4.357	ND	88	40-140	6	30	
Acenaphthene	4.61	4.35	mg/kg dry	4.357	ND	106	40-140	11	30	
Acenaphthylene	5.74	4.35	mg/kg dry	4.357	1.63	94	40-140	8	30	
Anthracene	6.93	4.35	mg/kg dry	4.357	1.80	118	40-140	12	30	
Benzo(a)anthracene	24.4	4.35	mg/kg dry	4.357	12.0	286	40-140	10	30	
Benzo(a)pyrene	25.4	2.18	mg/kg dry	4.357	10.8	333	40-140	12	30	
Benzo(b)fluoranthene	26.2	4.35	mg/kg dry	4.357	14.1	277	40-140	6	30	
Benzo(g,h,i)perylene	15.7	4.35	mg/kg dry	4.357	7.24	194	40-140	4	30	
Benzo(k)fluoranthene	14.0	4.35	mg/kg dry	4.357	4.19	225	40-140	9	30	
Chrysene	22.0	2.18	mg/kg dry	4.357	10.3	269	40-140	15	30	
Dibenzo(a,h)Anthracene	9.62	2.18	mg/kg dry	4.357	1.46	187	40-140	68	30	
Fluoranthene	29.5	4.35	mg/kg dry	4.357	17.5	277	40-140	24	30	
Fluorene	6.30	4.35	mg/kg dry	4.357	1.43	112	40-140	8	30	
Indeno(1,2,3-cd)Pyrene	15.2	4.35	mg/kg dry	4.357	7.31	180	40-140	6	30	
Naphthalene	4.02	4.35	mg/kg dry	4.357	1.07	68	40-140	0.6	30	
Phenanthrene	16.7	4.35	mg/kg dry	4.357	9.11	174	40-140	44	30	
Pyrene	52.4	4.35	mg/kg dry	4.357	27.7	566	40-140	28	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.34		mg/kg dry	4.357		54	30-130			
Surrogate: 2-Fluorobiphenyl	2.48		mg/kg dry	4.357		57	30-130			
Surrogate: Nitrobenzene-d5	2.58		mg/kg dry	4.357		59	30-130			
Surrogate: p-Terphenyl-d14	2.96		mg/kg dry	4.357		68	30-130			

Classical Chemistry

Batch CD10707 - TCN Prep

Blank										
Total Cyanide	ND	1.00	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CD10707 - TCN Prep										
LCS										
Total Cyanide	5.02	1.00	mg/kg wet	5.015		100	90-110			
LCS										
Total Cyanide	20.2	1.00	mg/kg wet	20.06		101	90-110			
LCS Dup										
Total Cyanide	19.8	1.00	mg/kg wet	20.06		99	90-110	2	20	
Duplicate Source: 1104050-20										
Total Cyanide	ND	1.27	mg/kg dry		ND				20	
Matrix Spike Source: 1104050-20										
Total Cyanide	12.8	1.26	mg/kg dry	12.68	ND	101	75-125			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

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) above upper control limit (S+).
- S- Surrogate recovery(ies) below lower control limit (S-).
- Q Calibration required quadratic regression (Q).
- MT Due to high target values, matrix spike compound(s) is masked (MT).
- MM Majority of matrix spike compounds are outside of criteria due to matrix interferences (MM).
- M+ Matrix Spike recovery is above upper control limit (M+).
- M- Matrix Spike recovery is below lower control limit (M-).
- EL Elevated Method Reporting Limits due to sample matrix (EL).
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- D Diluted.
- C+ Continuing Calibration recovery is above upper control limit (C+).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104050

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>



R.I. ANALYTICAL
Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

ESS Laboratory
Attn: Ms. Liz Ouk
185 Frances Avenue
Cranston, RI 02910-2211

Date Received: 4/7/2011
Date Reported: 4/12/2011
P.O. #: 1104050
Work Order #: 1104-06357

DESCRIPTION: PROJECT# 1104050

Subject sample(s) has/have been analyzed by our subcontracted 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.

If you have any questions regarding this work, or if we may be of further assistance, please contact us.

Approved by:

Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

ESS Laboratory

Date Received: 4/7/2011

Work Order #: 1104-06357

Sample # 001

SAMPLE DESCRIPTION: 1104050-09

SAMPLE TYPE: COMPOSITE

SAMPLE DATE/TIME: 4/6/2011

8:20

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/11/2011	SUB

Sample # 002

SAMPLE DESCRIPTION: 1104050-10

SAMPLE TYPE: COMPOSITE

SAMPLE DATE/TIME: 4/6/2011

8:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/11/2011	SUB

Sample # 003

SAMPLE DESCRIPTION: 1104050-20

SAMPLE TYPE: COMPOSITE

SAMPLE DATE/TIME: 4/6/2011

11:15

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/11/2011	SUB

Mt.Tom Generating Co. LLC Analytical Laboratory

15 Agawam Avenue
West Springfield, MA 01089
Phone (413) 214-6541 Fax (413) 214-6842
email-madhu.shah@gdfsuezna.com



Mass Certification - MA-00071
Conn Certification - PH-0520

Report Date April 11, 2011

Customer	Contact	Laboratory Supervisor	eMail
R.I.Analytical Laboratories, Inc.	K. Phelan	Madhu Shah	madhu.shah@gdfsuezna.com
Sample Description Analysis of Soil Samples			

Samples Analyzed

Enclosed are Report No(s): 27376 to 27378

Reported on dry basis.

ICV 10,000ppm = 9,969 ppm

CCV 1,000 ppm =1,076 ppm

Thank you for your business

Madhu Shah, Laboratory Supervisor

4/11/11
Date

ALL the information contained in this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method.

This report may not be reproduced, except in full, without written approval from Mt.Tom Generating Co.LLC Analytical Laboratory.

Sample Analysis

Work Order 11-0482

Sample Description	Source	Taken/Time	Received
27376 1104-06357-001	R.I.Analytical Laboratories,Inc.	4/6/11	4/8/11

Parameter	Results	MDL	Method	Analyzed/Time	Tech
Total Organic Carbon	1,200	ppm	100.00 SW 846 9060	04/11/11	sjr

Sample Description	Source	Taken/Time	Received
27377 1104-06357-002	R.I.Analytical Laboratories,Inc.	4/6/11	4/8/11

Parameter	Results	MDL	Method	Analyzed/Time	Tech
Total Organic Carbon	1,510	ppm	100.00 SW 846 9060	04/11/11	sjr

Sample Description	Source	Taken/Time	Received
27378 1104-06357-003	R.I.Analytical Laboratories,Inc.	4/6/11	4/8/11

Parameter	Results	MDL	Method	Analyzed/Time	Tech
Total Organic Carbon	18,520	ppm	100.00 SW 846 9060	04/11/11	sjr

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 6

Turn Time: Standard RCR Other RCR
 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: USACE Other _____
 Navy _____

ESS LAB PROJECT ID: 11040SD
 Reporting Limits: Yes X No _____
 Electronic Deliverable: Access X PDF X Other _____
 Format: Excel _____

Co. Name	Project #	Project Name (20 Char. or less)	Number of Containers	Type of Containers	Write Required Analysis					
GZA Geo-Environmental Inc.	4365410	Tidewater - GRS								
Contact Person: Meg Kilpatrick	Address: 530 Broadway	PO#								
City: Providence	State: RI	Zip: 02909								
Telephone #	Fax #	Email Address: mkilpatrick@gza.com								
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
01	4-5-11	1450	X		S	GRS-20 0-3"				
02		1453	X		S	GRS-20 9-12"				
03		1200	X		S	GRSBD040511-0-3				
04	4-6-11	0735	X		S	GRSBD040511-9-12				
05		0740	X		S	GRS-21 0-3"				
		0752	X		S	GRS-21 9-12"				
		0755	X		S	GRS-22 0-3"				
		0800	X		S	GRS-22 9-12"				
06		0804	X		S	GRS-23 0-3"				
			X		S	GRS-23 9-12"				

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: 2.3 (C)

Relinquished by: (Signature) <u>[Signature]</u>	Date/Time: <u>4-6-11 1519</u>	Received by: (Signature) _____	Date/Time: _____
Relinquished by: (Signature) _____	Date/Time: _____	Received by: (Signature) _____	Date/Time: _____

Comments: Metals (Pb, Cd, Cr - Total) and TCDA

Sampled by: WF/EMB

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

ESS Laboratory

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 www.esslaboratory.com

CHAIN OF CUSTODY

Page 2 of 6

Turn Time: Standard Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following:
 MA-MCP Navy USACE Other _____

Reporting Limits
 ESS LAB PROJECT ID: 1104050
 Electronic Deliverable: Yes ___ No ___
 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	
								Project Name (20 Char. or less)	Address	PCBs (882A)	Metals (Pb, Cd, Cr)	PCBs (882A)	Metals (Pb, Cd, Cr)
07	4-6-11	0828	X		S	GRS-24 0-3"							
08		0810	X		S	GRS-24 9-12"							
09		0815	X		S	GRS-25 0-3"							
10		0817	X		S	GRS-25 9-12"							
11		0820	X		S	GRS-25 1.5'							
12		0825	X		S	GRS-BD-040611-1.5'							
13		0840	X		S	GRS-26							
		0845	X		S	GRS-26							
		0900	X		S	GRS-BD-040611-0-3"							
		0906				GRSP-A 0-3"							

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 ___
 Seals Intact: Yes ___ No NA: ___ [] Pickup
 Cooler Temp: 2.3 ice

Preservation Code: 1-NP, 2-HCl, 3-H₂SO₄, 4-HNO₃, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-
 Sampled by: WF/EMB
 Comments: _____

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<i>[Signature]</i>	4-6-11 1519	<i>[Signature]</i>	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

ESS Laboratory

Division of Thielsch Engineering, Inc.
 185 Frances Avenue, Cranston, RI 02910-2211
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 www.esslaboratory.com

CHAIN OF CUSTODY

Page 3 of 6

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: USACE Other _____
 MA-MCP Navy _____

Reporting Limits _____
 ESS LAB PROJECT ID 1104050
 Electronic Deliverable Yes ___ No ___
 Format: Excel ___ Access ___ PDF ___ Other _____

Co. Name GEA Geo Environmental Inc
 Project # 436540 Project Name (20 Char. or less) TIDE WATER GRAS
 Contact Person Mrs Kilpatrick Address 330 Broadway
 City Providence State RI Zip 02909 PO# _____
 Telephone # _____ Fax # _____ Email Address MKILPATRICK@GEA.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	Write Required Analysis
14	0909	0909	X	S	S	GRSP-2 9-12"		PCB's 8082A	1	G	Metals (Pb, Cd, Ni)
15	0911	0911	X	S	S	GRSP-2 21-24"			1	G	Hold/Freeze
15	0923	0923	X	S	S	GRSP-3 9-12"			1	G	X
16	0926	0926	X	S	S	GRSP-3 21-24"			1	G	X
17	1015	1015	X	S	S	GRSP-3 0-3"			1	G	X
18	1017	1017	X	S	S	GRSP-4 9-12"			1	G	X
19	1045	1045	X	S	S	GRSP-4 21-24"			1	G	X
19	1050	1050	X	S	S	GRSP-3 9-12"			1	G	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 Internal Use Only
 Seals Intact Yes ___ No NA: Pickup
 Cooler Temp: 2.3 ice Technicians _____
 Preservation Code 1- NP, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____
 Sampled by: WF/EnB
 Comments: _____

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<u>[Signature]</u>	<u>4-6-11 1519</u>	<u>[Signature]</u>	<u>9-6-11 1719</u>
<u>[Signature]</u>	<u>4-6-11 1519</u>	<u>[Signature]</u>	<u>9-6-11 1719</u>

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 **4** of **6**

Turn Time _____ Standard _____ Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from: MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy

ESS LAB PROJECT ID **1104050**
 Reporting Limits _____
 Electronic Deliverable Yes ___ No ___
 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	Date/Time
20	4/16/11	11:15	X		S	GRS-3 36"		4 GM	Metals (Pb, Cd, Cr)	Metals (Ar, Hg, S), TOC, PAH, VOC, TPH	(Hold/Freeze)
21		11:45	X		S	GRS-2 0-3"		1			X
22		11:50	X		S	GRS-2 9"-12"		1			X
23		12:56	X		S	GRSP-5 0-3"		1			X
		12:58	X		S	GRSP-5 9'-12"		1			X
		13:00	X		S	GRSP-5 21-24"		1			X
		13:20	X		S	GRSP-6 0-3"		1			X
		13:23	X		S	GRSP-6 9'-12"		1			X
		13:25	X		S	GRSP-6 21-24"		1			X
		13:32	X		S	GRSP-7 0-3"		1			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 ___ Internal Use Only
 Seals Intact Yes ___ No NA: ___ () Pickup
 Cooler Temp: **2.3 ice** () Technicians ___
 Relinquished by: (Signature) **[Signature]** Date/Time **4-6-11/1519**
 Relinquished by: (Signature) **[Signature]** Date/Time **4-6-11/1519**
 Received by: (Signature) _____ Date/Time _____
 Received by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) _____ Date/Time _____
 Sampled by: **WF/ENB**
 Comments: **Metals (Pb, Cd, Cr) - Total and TCLA**
 Preservation Code 1- NP, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

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CHAIN OF CUSTODY

Page 5 of 6

Turn Time Standard Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy _____

Reporting Limits _____
 Electronic Deliverable Yes ___ No ___
 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
—	4-6-11	1335	X		S	GRSP-7 9-12"		1	(Bottle)	
—		1377	X		S	GRSP-7 21-24"		1	PCB's (Bottle)	Hold/Freeze
—		1344	X		S	GRSP-8 0-3"		1		
—		1347	X		S	GRSP-8 9-12"		1		
—		1350	X		S	GRSP-8 21-24"		1		
—		1407	X		S	GRSP-9 0-3"		1		
—		1428	X		S	GRSP-9 9-12"		1		
—		1410	X		S	GRSP-9 21-24"		1		
—		1418	X		S	GRSP-10 0-3"		1		
—		1421	X		S	GRSP-10 9-12"		1		

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: Technician's _____
 Cooler Temp: 2.3 ice
 Relinquished by: (Signature) [Signature] Date/Time 4-6-11 1519
 Relinquished by: (Signature) _____ Date/Time _____
 Received by: (Signature) _____ Date/Time _____
 Received by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) _____ Date/Time _____
 Relinquished by: (Signature) _____ Date/Time _____
 Sampled by: WF/FAB
 Comments: _____
 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 (43654.00)
ESS Laboratory Work Order Number: 1104021

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

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: 1104021

SAMPLE RECEIPT

The following samples were received on April 05, 2011 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 April 18, 2011: Client Sample IDs for 1104021-01 through -23 have been revised.

Lab Number	SampleName	Matrix	Analysis
1104021-01	GRS-4 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-02	GRS-5 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-03	GRS-5 1ft	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104021-04	GRS-6 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-05	GRS-7 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-06	GRS-8 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-07	GRS-8 9-12in	Soil	1311/6010B, 6010B, 8082
1104021-08	GRS-8 2ft	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104021-09	GRS-9 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-10	GRS-9 2ft	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104021-11	GRS-10 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-12	GRS-11 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-13	GRS-12 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-14	GRS-13 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-15	GRS-13 1ft	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104021-16	GRS-14 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-17	GRS-15 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-18	GRS-15 1.5ft	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104021-19	GRS-16 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-20	GRS-17 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-21	GRS-18 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-22	GRS-18 1ft	Soil	§, 6010B, 8082, 8100M, 8260B, 8270C, 9014
1104021-23	GRS-19 0-3in	Soil	1311/6010B, 6010B, 8082
1104021-24	CS-1	Solid	8082
1104021-25	CS-2	Solid	8082
1104021-26	CS-3	Solid	8082
1104021-27	RW-1	Solid	8082
1104021-28	RW-2	Solid	8082
1104021-29	RW-3	Solid	8082
1104021-30	RW-4	Solid	8082
1104021-31	Trip Blank	Solid	8260B

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

PROJECT NARRATIVE

3050B/6000/7000 Total Metals

CD10523-MS1 Matrix Spike recovery is above upper control limit (M+).
Chromium (183% @ 75-125%)
CD10524-MS1 Matrix Spike recovery is below lower control limit (M-).
Arsenic (73% @ 75-125%)

5035/8260B Volatile Organic Compounds / Methanol

CD10608-BS1 Blank Spike recovery is above upper control limit (B+).
Bromomethane (138% @ 70-130%), Chloroethane (131% @ 70-130%)
CD10608-BSD1 Blank Spike recovery is above upper control limit (B+).
Bromomethane (134% @ 70-130%)
CD10608-MSD1 Matrix Spike recovery is above upper control limit (M+).
Bromomethane (134% @ 70-130%), Chloroethane (136% @ 70-130%)
CUD0029-CCV1 Continuing Calibration recovery is above upper control limit (C+).
Chloroethane (137% @ 70-130%)

8082 Polychlorinated Biphenyls (PCB)

1104021-15 Percent difference between primary and confirmation results exceeds 40% (P).
Aroclor 1248
1104021-16 Surrogate recovery(ies) diluted below the MRL (SD).
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)
1104021-25 Surrogate recovery(ies) diluted below the MRL (SD).
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

8270C Polynuclear Aromatic Hydrocarbons

1104021-15 Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).
Perylene-d12 (46% @ 50-200%)
CUD0026-CCV1 Calibration required quadratic regression (Q).
Benzo(b)fluoranthene (101% @ 70-130%), Dibenzo(a,h)Anthracene (100% @ 70-130%),
Indeno(1,2,3-cd)Pyrene (98% @ 70-130%)

No other observations noted.

End of Project Narrative.



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

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: GRS-4 0-3in
Date Sampled: 04/05/11 10:37
Percent Solids: 91

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-01
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:21	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:21	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:21	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-4 0-3in
 Date Sampled: 04/05/11 10:37
 Percent Solids: 91

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-01
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.37)	6010B	1000	1	SVD	04/05/11 22:20	2.95	100	CD10523	
Chromium	10.6 (0.7)	6010B	10000	1	SVD	04/05/11 22:20	2.95	100	CD10523	
Lead	50.5 (3.7)	6010B	500	1	SVD	04/05/11 22:20	2.95	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-4 0-3in
Date Sampled: 04/05/11 10:37
Percent Solids: 91
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1221	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1232	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1242	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1248	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1254	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1260	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1262	ND (0.0544)	10	1	04/06/11 13:09		CD10519
Aroclor 1268	ND (0.0544)	10	1	04/06/11 13:09		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	93 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	88 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	94 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-5 0-3in
Date Sampled: 04/05/11 11:00
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-02
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:25	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:25	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:25	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-5 0-3in
Date Sampled: 04/05/11 11:00
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-02
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.51)	6010B	1000	1	SVD	04/05/11 22:33	2.13	100	CD10523	
Chromium	8.6 (1.0)	6010B	10000	1	SVD	04/05/11 22:33	2.13	100	CD10523	
Lead	48.2 (5.1)	6010B	500	1	SVD	04/05/11 22:33	2.13	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-5 0-3in
Date Sampled: 04/05/11 11:00
Percent Solids: 93
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1221	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1232	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1242	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1248	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1254	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1260	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1262	ND (0.0540)	10	1	04/06/11 13:26		CD10519
Aroclor 1268	ND (0.0540)	10	1	04/06/11 13:26		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	95 %		30-150
Surrogate: Decachlorobiphenyl [2C]	92 %		30-150
Surrogate: Tetrachloro-m-xylene	69 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	78 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-5 1ft
Date Sampled: 04/05/11 11:05
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-03
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	3.3 (2.1)	6010B	7	1	SVD	04/06/11 0:21	2.5	100	CD10523	
Lead	21.6 (4.3)	6010B	500	1	SVD	04/06/11 0:21	2.5	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-5 1ft
Date Sampled: 04/05/11 11:05
Percent Solids: 93
Initial Volume: 21.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0812)	220	1	04/06/11 12:23	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0406)	29	1	04/06/11 12:23	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0406)	100	1	04/06/11 12:23	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0406)	9.5	1	04/06/11 12:23	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.244)	4.1	1	04/06/11 12:23	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0406)	0.07	1	04/06/11 12:23	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0406)	63	1	04/06/11 12:23	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0406)	84	1	04/06/11 12:23	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0406)	240	1	04/06/11 12:23	CUD0029	CD10608
1,4-Dioxane - Screen	ND (4.06)		1	04/06/11 12:23	CUD0029	CD10608
1-Chlorohexane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0812)		1	04/06/11 12:23	CUD0029	CD10608
2-Butanone	ND (1.01)	10000	1	04/06/11 12:23	CUD0029	CD10608
2-Chlorotoluene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
2-Hexanone	ND (0.406)		1	04/06/11 12:23	CUD0029	CD10608
4-Chlorotoluene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.406)	10000	1	04/06/11 12:23	CUD0029	CD10608
Acetone	ND (1.01)	10000	1	04/06/11 12:23	CUD0029	CD10608
Benzene	ND (0.0406)	200	1	04/06/11 12:23	CUD0029	CD10608

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-5 1ft
 Date Sampled: 04/05/11 11:05
 Percent Solids: 93
 Initial Volume: 21.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Bromochloromethane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Bromodichloromethane	ND (0.0406)	92	1	04/06/11 12:23	CUD0029	CD10608
Bromoform	ND (0.0406)	720	1	04/06/11 12:23	CUD0029	CD10608
Bromomethane	ND (0.0812)	2900	1	04/06/11 12:23	CUD0029	CD10608
Carbon Disulfide	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0406)	44	1	04/06/11 12:23	CUD0029	CD10608
Chlorobenzene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
Chloroethane	ND (0.0812)		1	04/06/11 12:23	CUD0029	CD10608
Chloroform	ND (0.0406)	940	1	04/06/11 12:23	CUD0029	CD10608
Chloromethane	ND (0.0812)		1	04/06/11 12:23	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Dibromochloromethane	ND (0.0406)	68	1	04/06/11 12:23	CUD0029	CD10608
Dibromomethane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Diethyl Ether	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Di-isopropyl ether	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Ethylbenzene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0406)	73	1	04/06/11 12:23	CUD0029	CD10608
Isopropylbenzene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
Methylene Chloride	ND (0.203)	760	1	04/06/11 12:23	CUD0029	CD10608
Naphthalene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
n-Butylbenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
n-Propylbenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
sec-Butylbenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Styrene	ND (0.0406)	190	1	04/06/11 12:23	CUD0029	CD10608
tert-Butylbenzene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-5 1ft
 Date Sampled: 04/05/11 11:05
 Percent Solids: 93
 Initial Volume: 21.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0406)	110	1	04/06/11 12:23	CUD0029	CD10608
Tetrahydrofuran	ND (0.406)		1	04/06/11 12:23	CUD0029	CD10608
Toluene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Trichloroethene	ND (0.0406)	520	1	04/06/11 12:23	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0406)		1	04/06/11 12:23	CUD0029	CD10608
Vinyl Acetate	ND (0.203)		1	04/06/11 12:23	CUD0029	CD10608
Vinyl Chloride	ND (0.0406)	3	1	04/06/11 12:23	CUD0029	CD10608
Xylene O	ND (0.0406)	10000	1	04/06/11 12:23	CUD0029	CD10608
Xylene P,M	ND (0.0812)	10000	1	04/06/11 12:23	CUD0029	CD10608
Xylenes (Total)	ND (0.122)	10000	1	04/06/11 12:23		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	105 %		70-130
Surrogate: 4-Bromofluorobenzene	101 %		70-130
Surrogate: Dibromofluoromethane	105 %		70-130
Surrogate: Toluene-d8	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-5 1ft
 Date Sampled: 04/05/11 11:05
 Percent Solids: 93
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1221	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1232	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1242	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1248	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1254	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1260	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1262	ND (0.0538)	10	1	04/06/11 13:45		CD10519
Aroclor 1268	ND (0.0538)	10	1	04/06/11 13:45		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	97 %		30-150
Surrogate: Decachlorobiphenyl [2C]	96 %		30-150
Surrogate: Tetrachloro-m-xylene	99 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	106 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-5 1ft
 Date Sampled: 04/05/11 11:05
 Percent Solids: 93
 Initial Volume: 20.1
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	ND (40.1)	2500	1	04/06/11 15:09	CUD0032	CD10414
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>		
<i>Surrogate: O-Terphenyl</i>		93 %		40-140		



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-5 1ft
 Date Sampled: 04/05/11 11:05
 Percent Solids: 93
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Acenaphthene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Acenaphthylene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Anthracene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Benzo(a)anthracene	ND (0.358)	7.8	1	04/06/11 10:03	CUD0026	CD10415
Benzo(a)pyrene	ND (0.180)	0.8	1	04/06/11 10:03	CUD0026	CD10415
Benzo(b)fluoranthene	ND (0.358)	7.8	1	04/06/11 10:03	CUD0026	CD10415
Benzo(g,h,i)perylene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Benzo(k)fluoranthene	ND (0.358)	78	1	04/06/11 10:03	CUD0026	CD10415
Chrysene	ND (0.180)	780	1	04/06/11 10:03	CUD0026	CD10415
Dibenzo(a,h)Anthracene	ND (0.180)	0.8	1	04/06/11 10:03	CUD0026	CD10415
Fluoranthene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Fluorene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Indeno(1,2,3-cd)Pyrene	ND (0.358)	7.8	1	04/06/11 10:03	CUD0026	CD10415
Naphthalene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Phenanthrene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415
Pyrene	ND (0.358)	10000	1	04/06/11 10:03	CUD0026	CD10415

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichlorobenzene-d4	65 %		30-130
Surrogate: 2-Fluorobiphenyl	75 %		30-130
Surrogate: Nitrobenzene-d5	64 %		30-130
Surrogate: p-Terphenyl-d14	104 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-5 1ft
 Date Sampled: 04/05/11 11:05
 Percent Solids: 93

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-03
 Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.06)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	2350 (100)	§			§	04/05/11 0:00	mg/kg	CD10727	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-6 0-3in
Date Sampled: 04/05/11 11:11
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-04
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:29	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:29	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:29	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-6 0-3in
 Date Sampled: 04/05/11 11:11
 Percent Solids: 93

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-04
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.50)	6010B	1000	1	SVD	04/05/11 22:38	2.15	100	CD10523	
Chromium	6.2 (1.0)	6010B	10000	1	SVD	04/05/11 22:38	2.15	100	CD10523	
Lead	42.0 (5.0)	6010B	500	1	SVD	04/05/11 22:38	2.15	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-6 0-3in
Date Sampled: 04/05/11 11:11
Percent Solids: 93
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1221	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1232	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1242	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1248	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1254	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1260	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1262	ND (0.0538)	10	1	04/06/11 14:04		CD10519
Aroclor 1268	ND (0.0538)	10	1	04/06/11 14:04		CD10519

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	83 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	83 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	79 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	84 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-7 0-3in
Date Sampled: 04/05/11 11:21
Percent Solids: 89

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-05
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:33	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:33	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:33	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-7 0-3in
Date Sampled: 04/05/11 11:21
Percent Solids: 89

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-05
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.45)	6010B	1000	1	SVD	04/05/11 22:42	2.53	100	CD10523	
Chromium	5.2 (0.9)	6010B	10000	1	SVD	04/05/11 22:42	2.53	100	CD10523	
Lead	20.9 (4.4)	6010B	500	1	SVD	04/05/11 22:42	2.53	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-7 0-3in
 Date Sampled: 04/05/11 11:21
 Percent Solids: 89
 Initial Volume: 20.2
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-05
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1221	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1232	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1242	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1248	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1254	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1260	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1262	ND (0.0556)	10	1	04/06/11 14:23		CD10519
Aroclor 1268	ND (0.0556)	10	1	04/06/11 14:23		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	102 %		30-150
Surrogate: Decachlorobiphenyl [2C]	94 %		30-150
Surrogate: Tetrachloro-m-xylene	92 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 0-3in
Date Sampled: 04/05/11 11:28
Percent Solids: 76

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-06
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:37	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:37	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:37	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 0-3in
Date Sampled: 04/05/11 11:28
Percent Solids: 76

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-06
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.59)	6010B	1000	1	SVD	04/05/11 22:47	2.23	100	CD10523	
Chromium	8.5 (1.2)	6010B	10000	1	SVD	04/05/11 22:47	2.23	100	CD10523	
Lead	49.0 (5.9)	6010B	500	1	SVD	04/05/11 22:47	2.23	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 0-3in
Date Sampled: 04/05/11 11:28
Percent Solids: 76
Initial Volume: 20.6
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1221	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1232	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1242	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1248	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1254	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1260	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1262	ND (0.0639)	10	1	04/06/11 14:42		CD10519
Aroclor 1268	ND (0.0639)	10	1	04/06/11 14:42		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachlorobiphenyl [2C]	97 %		30-150
Surrogate: Tetrachloro-m-xylene	89 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	99 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 9-12in
Date Sampled: 04/05/11 11:30
Percent Solids: 91

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-07
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:45	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:45	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:45	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 9-12in
Date Sampled: 04/05/11 11:30
Percent Solids: 91

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-07
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

RI - IC DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.45)	6010B	1000	1	SVD	04/05/11 22:52	2.47	100	CD10523
Chromium	5.9 (0.9)	6010B	10000	1	SVD	04/05/11 22:52	2.47	100	CD10523
Lead	13.9 (4.5)	6010B	500	1	SVD	04/05/11 22:52	2.47	100	CD10523



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-8 9-12in
 Date Sampled: 04/05/11 11:30
 Percent Solids: 91
 Initial Volume: 19.9
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-07
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1221	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1232	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1242	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1248	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1254	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1260	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1262	ND (0.0552)	10	1	04/06/11 15:00		CD10519
Aroclor 1268	ND (0.0552)	10	1	04/06/11 15:00		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	91 %		30-150
Surrogate: Decachlorobiphenyl [2C]	91 %		30-150
Surrogate: Tetrachloro-m-xylene	91 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	100 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 2ft
Date Sampled: 04/05/11 11:36
Percent Solids: 92

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-08
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	ND (2.3)	6010B	7	1	SVD	04/06/11 0:26	2.32	100	CD10523	
Lead	19.5 (4.7)	6010B	500	1	SVD	04/06/11 0:26	2.32	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-8 2ft
 Date Sampled: 04/05/11 11:36
 Percent Solids: 92
 Initial Volume: 21.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-08
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0856)	220	1	04/06/11 12:52	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0428)	29	1	04/06/11 12:52	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0428)	100	1	04/06/11 12:52	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0428)	9.5	1	04/06/11 12:52	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.257)	4.1	1	04/06/11 12:52	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0428)	0.07	1	04/06/11 12:52	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0428)	63	1	04/06/11 12:52	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0428)	84	1	04/06/11 12:52	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0428)	240	1	04/06/11 12:52	CUD0029	CD10608
1,4-Dioxane - Screen	ND (4.28)		1	04/06/11 12:52	CUD0029	CD10608
1-Chlorohexane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0856)		1	04/06/11 12:52	CUD0029	CD10608
2-Butanone	ND (1.07)	10000	1	04/06/11 12:52	CUD0029	CD10608
2-Chlorotoluene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
2-Hexanone	ND (0.428)		1	04/06/11 12:52	CUD0029	CD10608
4-Chlorotoluene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.428)	10000	1	04/06/11 12:52	CUD0029	CD10608
Acetone	ND (1.07)	10000	1	04/06/11 12:52	CUD0029	CD10608
Benzene	ND (0.0428)	200	1	04/06/11 12:52	CUD0029	CD10608

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-8 2ft
 Date Sampled: 04/05/11 11:36
 Percent Solids: 92
 Initial Volume: 21.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-08
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Bromochloromethane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Bromodichloromethane	ND (0.0428)	92	1	04/06/11 12:52	CUD0029	CD10608
Bromoform	ND (0.0428)	720	1	04/06/11 12:52	CUD0029	CD10608
Bromomethane	ND (0.0856)	2900	1	04/06/11 12:52	CUD0029	CD10608
Carbon Disulfide	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0428)	44	1	04/06/11 12:52	CUD0029	CD10608
Chlorobenzene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
Chloroethane	ND (0.0856)		1	04/06/11 12:52	CUD0029	CD10608
Chloroform	ND (0.0428)	940	1	04/06/11 12:52	CUD0029	CD10608
Chloromethane	ND (0.0856)		1	04/06/11 12:52	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Dibromochloromethane	ND (0.0428)	68	1	04/06/11 12:52	CUD0029	CD10608
Dibromomethane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Diethyl Ether	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Di-isopropyl ether	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Ethylbenzene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0428)	73	1	04/06/11 12:52	CUD0029	CD10608
Isopropylbenzene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
Methylene Chloride	ND (0.214)	760	1	04/06/11 12:52	CUD0029	CD10608
Naphthalene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
n-Butylbenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
n-Propylbenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
sec-Butylbenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Styrene	ND (0.0428)	190	1	04/06/11 12:52	CUD0029	CD10608
tert-Butylbenzene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-8 2ft
 Date Sampled: 04/05/11 11:36
 Percent Solids: 92
 Initial Volume: 21.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-08
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0428)	110	1	04/06/11 12:52	CUD0029	CD10608
Tetrahydrofuran	ND (0.428)		1	04/06/11 12:52	CUD0029	CD10608
Toluene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Trichloroethene	ND (0.0428)	520	1	04/06/11 12:52	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0428)		1	04/06/11 12:52	CUD0029	CD10608
Vinyl Acetate	ND (0.214)		1	04/06/11 12:52	CUD0029	CD10608
Vinyl Chloride	ND (0.0428)	3	1	04/06/11 12:52	CUD0029	CD10608
Xylene O	ND (0.0428)	10000	1	04/06/11 12:52	CUD0029	CD10608
Xylene P,M	ND (0.0856)	10000	1	04/06/11 12:52	CUD0029	CD10608
Xylenes (Total)	ND (0.128)	10000	1	04/06/11 12:52		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	106 %		70-130
Surrogate: 4-Bromofluorobenzene	99 %		70-130
Surrogate: Dibromofluoromethane	107 %		70-130
Surrogate: Toluene-d8	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-8 2ft
 Date Sampled: 04/05/11 11:36
 Percent Solids: 92
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-08
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1221	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1232	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1242	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1248	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1254	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1260	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1262	ND (0.0543)	10	1	04/06/11 15:19		CD10519
Aroclor 1268	ND (0.0543)	10	1	04/06/11 15:19		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachlorobiphenyl [2C]	91 %		30-150
Surrogate: Tetrachloro-m-xylene	93 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	99 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-8 2ft
Date Sampled: 04/05/11 11:36
Percent Solids: 92
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	117 (40.6)	2500	1	04/06/11 12:50	CUD0033	CD10414
	<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: GRS-8 2ft
 Date Sampled: 04/05/11 11:36
 Percent Solids: 92
 Initial Volume: 15.2
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-08
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Acenaphthene	ND (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Acenaphthylene	0.372 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Anthracene	0.522 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Benzo(a)anthracene	2.81 (0.357)	7.8	1	04/06/11 12:34	CUD0026	CD10415
Benzo(a)pyrene	2.55 (0.179)	0.8	1	04/06/11 12:34	CUD0026	CD10415
Benzo(b)fluoranthene	3.52 (0.357)	7.8	1	04/06/11 12:34	CUD0026	CD10415
Benzo(g,h,i)perylene	0.866 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Benzo(k)fluoranthene	1.53 (0.357)	78	1	04/06/11 12:34	CUD0026	CD10415
Chrysene	3.18 (0.179)	780	1	04/06/11 12:34	CUD0026	CD10415
Dibenzo(a,h)Anthracene	0.457 (0.179)	0.8	1	04/06/11 12:34	CUD0026	CD10415
Fluoranthene	6.53 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Fluorene	ND (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Indeno(1,2,3-cd)Pyrene	0.903 (0.357)	7.8	1	04/06/11 12:34	CUD0026	CD10415
Naphthalene	ND (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Phenanthrene	3.29 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415
Pyrene	5.84 (0.357)	10000	1	04/06/11 12:34	CUD0026	CD10415

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichlorobenzene-d4	67 %		30-130
Surrogate: 2-Fluorobiphenyl	72 %		30-130
Surrogate: Nitrobenzene-d5	66 %		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: GRS-8 2ft
Date Sampled: 04/05/11 11:36
Percent Solids: 92

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-08
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.08)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	4940 (100)	§			§	04/05/11 0:00	mg/kg	CD10727	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-9 0-3in
Date Sampled: 04/05/11 12:28
Percent Solids: 89

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-09
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 16:58	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:58	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 16:58	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-9 0-3in
 Date Sampled: 04/05/11 12:28
 Percent Solids: 89

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-09
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.44)	6010B	1000	1	SVD	04/05/11 22:56	2.59	100	CD10523	
Chromium	4.3 (0.9)	6010B	10000	1	SVD	04/05/11 22:56	2.59	100	CD10523	
Lead	12.0 (4.3)	6010B	500	1	SVD	04/05/11 22:56	2.59	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-9 0-3in
Date Sampled: 04/05/11 12:28
Percent Solids: 89
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1221	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1232	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1242	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1248	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1254	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1260	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1262	ND (0.0556)	10	1	04/06/11 15:38		CD10519
Aroclor 1268	ND (0.0556)	10	1	04/06/11 15:38		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	91 %		30-150
Surrogate: Tetrachloro-m-xylene	96 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	103 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-9 2ft
Date Sampled: 04/05/11 12:35
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-10
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	ND (2.2)	6010B	7	1	SVD	04/06/11 0:30	2.44	100	CD10523	
Lead	11.9 (4.4)	6010B	500	1	SVD	04/06/11 0:30	2.44	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-9 2ft
 Date Sampled: 04/05/11 12:35
 Percent Solids: 93
 Initial Volume: 24.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0723)	220	1	04/06/11 13:22	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0362)	29	1	04/06/11 13:22	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0362)	100	1	04/06/11 13:22	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0362)	9.5	1	04/06/11 13:22	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.217)	4.1	1	04/06/11 13:22	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0362)	0.07	1	04/06/11 13:22	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0362)	63	1	04/06/11 13:22	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0362)	84	1	04/06/11 13:22	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0362)	240	1	04/06/11 13:22	CUD0029	CD10608
1,4-Dioxane - Screen	ND (3.62)		1	04/06/11 13:22	CUD0029	CD10608
1-Chlorohexane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0723)		1	04/06/11 13:22	CUD0029	CD10608
2-Butanone	ND (0.904)	10000	1	04/06/11 13:22	CUD0029	CD10608
2-Chlorotoluene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
2-Hexanone	ND (0.362)		1	04/06/11 13:22	CUD0029	CD10608
4-Chlorotoluene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.362)	10000	1	04/06/11 13:22	CUD0029	CD10608
Acetone	ND (0.904)	10000	1	04/06/11 13:22	CUD0029	CD10608
Benzene	ND (0.0362)	200	1	04/06/11 13:22	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-9 2ft
 Date Sampled: 04/05/11 12:35
 Percent Solids: 93
 Initial Volume: 24.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Bromochloromethane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Bromodichloromethane	ND (0.0362)	92	1	04/06/11 13:22	CUD0029	CD10608
Bromoform	ND (0.0362)	720	1	04/06/11 13:22	CUD0029	CD10608
Bromomethane	ND (0.0723)	2900	1	04/06/11 13:22	CUD0029	CD10608
Carbon Disulfide	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0362)	44	1	04/06/11 13:22	CUD0029	CD10608
Chlorobenzene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
Chloroethane	ND (0.0723)		1	04/06/11 13:22	CUD0029	CD10608
Chloroform	ND (0.0362)	940	1	04/06/11 13:22	CUD0029	CD10608
Chloromethane	ND (0.0723)		1	04/06/11 13:22	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Dibromochloromethane	ND (0.0362)	68	1	04/06/11 13:22	CUD0029	CD10608
Dibromomethane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Diethyl Ether	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Di-isopropyl ether	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Ethylbenzene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0362)	73	1	04/06/11 13:22	CUD0029	CD10608
Isopropylbenzene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
Methylene Chloride	ND (0.181)	760	1	04/06/11 13:22	CUD0029	CD10608
Naphthalene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
n-Butylbenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
n-Propylbenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
sec-Butylbenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Styrene	ND (0.0362)	190	1	04/06/11 13:22	CUD0029	CD10608
tert-Butylbenzene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-9 2ft
 Date Sampled: 04/05/11 12:35
 Percent Solids: 93
 Initial Volume: 24.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0362)	110	1	04/06/11 13:22	CUD0029	CD10608
Tetrahydrofuran	ND (0.362)		1	04/06/11 13:22	CUD0029	CD10608
Toluene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Trichloroethene	ND (0.0362)	520	1	04/06/11 13:22	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0362)		1	04/06/11 13:22	CUD0029	CD10608
Vinyl Acetate	ND (0.181)		1	04/06/11 13:22	CUD0029	CD10608
Vinyl Chloride	ND (0.0362)	3	1	04/06/11 13:22	CUD0029	CD10608
Xylene O	ND (0.0362)	10000	1	04/06/11 13:22	CUD0029	CD10608
Xylene P,M	ND (0.0723)	10000	1	04/06/11 13:22	CUD0029	CD10608
Xylenes (Total)	ND (0.108)	10000	1	04/06/11 13:22		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	108 %		70-130
Surrogate: 4-Bromofluorobenzene	100 %		70-130
Surrogate: Dibromofluoromethane	107 %		70-130
Surrogate: Toluene-d8	98 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-9 2ft
 Date Sampled: 04/05/11 12:35
 Percent Solids: 93
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1221	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1232	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1242	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1248	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1254	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1260	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1262	ND (0.0535)	10	1	04/06/11 15:57		CD10519
Aroclor 1268	ND (0.0535)	10	1	04/06/11 15:57		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	100 %		30-150
Surrogate: Tetrachloro-m-xylene	94 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	101 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-9 2ft
 Date Sampled: 04/05/11 12:35
 Percent Solids: 93
 Initial Volume: 20.1
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-10
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	121 (40.1)	2500	1	04/06/11 13:24	CUD0033	CD10414
	<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: GRS-9 2ft
Date Sampled: 04/05/11 12:35
Percent Solids: 93
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Acenaphthene	ND (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Acenaphthylene	ND (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Anthracene	ND (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Benzo(a)anthracene	4.14 (0.356)	7.8	1	04/06/11 13:04	CUD0026	CD10415
Benzo(a)pyrene	3.63 (0.178)	0.8	1	04/06/11 13:04	CUD0026	CD10415
Benzo(b)fluoranthene	4.44 (0.356)	7.8	1	04/06/11 13:04	CUD0026	CD10415
Benzo(g,h,i)perylene	1.60 (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Benzo(k)fluoranthene	1.79 (0.356)	78	1	04/06/11 13:04	CUD0026	CD10415
Chrysene	3.36 (0.178)	780	1	04/06/11 13:04	CUD0026	CD10415
Dibenzo(a,h)Anthracene	0.707 (0.178)	0.8	1	04/06/11 13:04	CUD0026	CD10415
Fluoranthene	7.87 (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Fluorene	ND (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Indeno(1,2,3-cd)Pyrene	1.51 (0.356)	7.8	1	04/06/11 13:04	CUD0026	CD10415
Naphthalene	ND (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Phenanthrene	0.723 (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415
Pyrene	6.35 (0.356)	10000	1	04/06/11 13:04	CUD0026	CD10415

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	73 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	82 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	73 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	90 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-9 2ft
Date Sampled: 04/05/11 12:35
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-10
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.08)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	2530 (100)	§			§	04/05/11 0:00	mg/kg	CD10727	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-10 0-3in
Date Sampled: 04/05/11 12:40
Percent Solids: 73

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-11
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:02	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:02	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:02	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-10 0-3in
Date Sampled: 04/05/11 12:40
Percent Solids: 73

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-11
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.63)	6010B	1000	1	SVD	04/05/11 23:01	2.17	100	CD10523	
Chromium	4.0 (1.3)	6010B	10000	1	SVD	04/05/11 23:01	2.17	100	CD10523	
Lead	13.0 (6.3)	6010B	500	1	SVD	04/05/11 23:01	2.17	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-10 0-3in
 Date Sampled: 04/05/11 12:40
 Percent Solids: 73
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-11
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1221	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1232	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1242	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1248	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1254	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1260	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1262	ND (0.0685)	10	1	04/06/11 16:16		CD10519
Aroclor 1268	ND (0.0685)	10	1	04/06/11 16:16		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	99 %		30-150
Surrogate: Decachlorobiphenyl [2C]	105 %		30-150
Surrogate: Tetrachloro-m-xylene	97 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	108 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-11 0-3in
Date Sampled: 04/05/11 12:50
Percent Solids: 92

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-12
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:06	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:06	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:06	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-11 0-3in
Date Sampled: 04/05/11 12:50
Percent Solids: 92

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-12
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.47)	6010B	1000	1	SVD	04/05/11 23:05	2.32	100	CD10523	
Chromium	5.1 (0.9)	6010B	10000	1	SVD	04/05/11 23:05	2.32	100	CD10523	
Lead	17.2 (4.7)	6010B	500	1	SVD	04/05/11 23:05	2.32	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-11 0-3in
 Date Sampled: 04/05/11 12:50
 Percent Solids: 92
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-12
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1221	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1232	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1242	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1248	0.619 (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1254	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1260	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1262	ND (0.0541)	10	1	04/06/11 16:35		CD10519
Aroclor 1268	ND (0.0541)	10	1	04/06/11 16:35		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	95 %		30-150
Surrogate: Decachlorobiphenyl [2C]	99 %		30-150
Surrogate: Tetrachloro-m-xylene	93 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	99 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-12 0-3in
Date Sampled: 04/05/11 13:02
Percent Solids: 90

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-13
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:27	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:27	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:27	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-12 0-3in
Date Sampled: 04/05/11 13:02
Percent Solids: 90

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-13
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.51)	6010B	1000	1	SVD	04/05/11 23:09	2.18	100	CD10523	
Chromium	8.6 (1.0)	6010B	10000	1	SVD	04/05/11 23:09	2.18	100	CD10523	
Lead	27.5 (5.1)	6010B	500	1	SVD	04/05/11 23:09	2.18	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-12 0-3in
Date Sampled: 04/05/11 13:02
Percent Solids: 90
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1221	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1232	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1242	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1248	0.451 (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1254	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1260	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1262	ND (0.0553)	10	1	04/06/11 16:53		CD10519
Aroclor 1268	ND (0.0553)	10	1	04/06/11 16:53		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	93 %		30-150
Surrogate: Tetrachloro-m-xylene	93 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	101 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-13 0-3in
Date Sampled: 04/05/11 13:09
Percent Solids: 87

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-14
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:31	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:31	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:31	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-13 0-3in
Date Sampled: 04/05/11 13:09
Percent Solids: 87

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-14
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.53)	6010B	1000	1	SVD	04/05/11 23:40	2.16	100	CD10523	
Chromium	16.7 (1.1)	6010B	10000	1	SVD	04/05/11 23:40	2.16	100	CD10523	
Lead	66.2 (5.3)	6010B	500	1	SVD	04/05/11 23:40	2.16	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-13 0-3in
 Date Sampled: 04/05/11 13:09
 Percent Solids: 87
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-14
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1221	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1232	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1242	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1248	0.293 (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1254	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1260	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1262	ND (0.0575)	10	1	04/06/11 17:12		CD10519
Aroclor 1268	ND (0.0575)	10	1	04/06/11 17:12		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	88 %		30-150
Surrogate: Decachlorobiphenyl [2C]	81 %		30-150
Surrogate: Tetrachloro-m-xylene	72 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	76 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-13 1ft
Date Sampled: 04/05/11 13:13
Percent Solids: 91

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-15
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	2.7 (2.5)	6010B	7	1	SVD	04/06/11 1:13	2.23	100	CD10524	
Lead	17.0 (4.9)	6010B	500	1	SVD	04/06/11 1:13	2.23	100	CD10524	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-13 1ft
 Date Sampled: 04/05/11 13:13
 Percent Solids: 91
 Initial Volume: 26.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-15
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0712)	220	1	04/06/11 13:52	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0356)	29	1	04/06/11 13:52	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0356)	100	1	04/06/11 13:52	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0356)	9.5	1	04/06/11 13:52	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.214)	4.1	1	04/06/11 13:52	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0356)	0.07	1	04/06/11 13:52	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0356)	63	1	04/06/11 13:52	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0356)	84	1	04/06/11 13:52	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0356)	240	1	04/06/11 13:52	CUD0029	CD10608
1,4-Dioxane - Screen	ND (3.56)		1	04/06/11 13:52	CUD0029	CD10608
1-Chlorohexane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0712)		1	04/06/11 13:52	CUD0029	CD10608
2-Butanone	ND (0.890)	10000	1	04/06/11 13:52	CUD0029	CD10608
2-Chlorotoluene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
2-Hexanone	ND (0.356)		1	04/06/11 13:52	CUD0029	CD10608
4-Chlorotoluene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.356)	10000	1	04/06/11 13:52	CUD0029	CD10608
Acetone	ND (0.890)	10000	1	04/06/11 13:52	CUD0029	CD10608
Benzene	ND (0.0356)	200	1	04/06/11 13:52	CUD0029	CD10608

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-13 1ft
 Date Sampled: 04/05/11 13:13
 Percent Solids: 91
 Initial Volume: 26.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-15
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Bromochloromethane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Bromodichloromethane	ND (0.0356)	92	1	04/06/11 13:52	CUD0029	CD10608
Bromoform	ND (0.0356)	720	1	04/06/11 13:52	CUD0029	CD10608
Bromomethane	ND (0.0712)	2900	1	04/06/11 13:52	CUD0029	CD10608
Carbon Disulfide	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0356)	44	1	04/06/11 13:52	CUD0029	CD10608
Chlorobenzene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
Chloroethane	ND (0.0712)		1	04/06/11 13:52	CUD0029	CD10608
Chloroform	ND (0.0356)	940	1	04/06/11 13:52	CUD0029	CD10608
Chloromethane	ND (0.0712)		1	04/06/11 13:52	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Dibromochloromethane	ND (0.0356)	68	1	04/06/11 13:52	CUD0029	CD10608
Dibromomethane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Diethyl Ether	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Di-isopropyl ether	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Ethylbenzene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0356)	73	1	04/06/11 13:52	CUD0029	CD10608
Isopropylbenzene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
Methylene Chloride	ND (0.178)	760	1	04/06/11 13:52	CUD0029	CD10608
Naphthalene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
n-Butylbenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
n-Propylbenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
sec-Butylbenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Styrene	ND (0.0356)	190	1	04/06/11 13:52	CUD0029	CD10608
tert-Butylbenzene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-13 1ft
 Date Sampled: 04/05/11 13:13
 Percent Solids: 91
 Initial Volume: 26.9
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-15
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0356)	110	1	04/06/11 13:52	CUD0029	CD10608
Tetrahydrofuran	ND (0.356)		1	04/06/11 13:52	CUD0029	CD10608
Toluene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Trichloroethene	ND (0.0356)	520	1	04/06/11 13:52	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0356)		1	04/06/11 13:52	CUD0029	CD10608
Vinyl Acetate	ND (0.178)		1	04/06/11 13:52	CUD0029	CD10608
Vinyl Chloride	ND (0.0356)	3	1	04/06/11 13:52	CUD0029	CD10608
Xylene O	ND (0.0356)	10000	1	04/06/11 13:52	CUD0029	CD10608
Xylene P,M	ND (0.0712)	10000	1	04/06/11 13:52	CUD0029	CD10608
Xylenes (Total)	ND (0.107)	10000	1	04/06/11 13:52		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	115 %		70-130
Surrogate: 4-Bromofluorobenzene	107 %		70-130
Surrogate: Dibromofluoromethane	116 %		70-130
Surrogate: Toluene-d8	105 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-13 1ft
Date Sampled: 04/05/11 13:13
Percent Solids: 91
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1221	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1232	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1242	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1248	P 0.0729 (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1254	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1260	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1262	ND (0.0552)	10	1	04/06/11 16:32		CD10519
Aroclor 1268	ND (0.0552)	10	1	04/06/11 16:32		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	100 %		30-150
Surrogate: Decachlorobiphenyl [2C]	87 %		30-150
Surrogate: Tetrachloro-m-xylene	62 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	65 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-13 1ft
Date Sampled: 04/05/11 13:13
Percent Solids: 91
Initial Volume: 20.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	2160 (40.4)	2500	1	04/06/11 13:59	CUD0033	CD10414
	<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: GRS-13 1ft
 Date Sampled: 04/05/11 13:13
 Percent Solids: 91
 Initial Volume: 14.9
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-15
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Acenaphthene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Acenaphthylene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Anthracene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Benzo(a)anthracene	0.437 (0.368)	7.8	1	04/06/11 13:34	CUD0026	CD10415
Benzo(a)pyrene	0.497 (0.185)	0.8	1	04/06/11 13:34	CUD0026	CD10415
Benzo(b)fluoranthene	1.06 (0.368)	7.8	1	04/06/11 13:34	CUD0026	CD10415
Benzo(g,h,i)perylene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Benzo(k)fluoranthene	ND (0.368)	78	1	04/06/11 13:34	CUD0026	CD10415
Chrysene	0.496 (0.185)	780	1	04/06/11 13:34	CUD0026	CD10415
Dibenzo(a,h)Anthracene	ND (0.185)	0.8	1	04/06/11 13:34	CUD0026	CD10415
Fluoranthene	0.961 (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Fluorene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Indeno(1,2,3-cd)Pyrene	0.369 (0.368)	7.8	1	04/06/11 13:34	CUD0026	CD10415
Naphthalene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Phenanthrene	ND (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415
Pyrene	0.895 (0.368)	10000	1	04/06/11 13:34	CUD0026	CD10415

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	71 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	73 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	70 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	107 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-13 1ft
Date Sampled: 04/05/11 13:13
Percent Solids: 91

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-15
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.07)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	12700 (100)	§			§	04/05/11 0:00	mg/kg	CD10727	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-14 0-3in
Date Sampled: 04/05/11 13:24
Percent Solids: 82

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-16
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:35	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:35	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:35	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-14 0-3in
Date Sampled: 04/05/11 13:24
Percent Solids: 82

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-16
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.48)	6010B	1000	1	SVD	04/05/11 23:45	2.55	100	CD10523	
Chromium	10.7 (1.0)	6010B	10000	1	SVD	04/05/11 23:45	2.55	100	CD10523	
Lead	56.2 (4.8)	6010B	500	1	SVD	04/05/11 23:45	2.55	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-14 0-3in
Date Sampled: 04/05/11 13:24
Percent Solids: 82
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1221	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1232	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1242	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1248	18.4 (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1254	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1260	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1262	ND (3.05)	10	50	04/07/11 9:46		CD10519
Aroclor 1268	ND (3.05)	10	50	04/07/11 9:46		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-15 0-3in
Date Sampled: 04/05/11 13:30
Percent Solids: 95

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-17
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:48	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:48	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:48	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-15 0-3in
Date Sampled: 04/05/11 13:30
Percent Solids: 95

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-17
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.47)	6010B	1000	1	SVD	04/05/11 23:50	2.23	100	CD10523	
Chromium	5.4 (0.9)	6010B	10000	1	SVD	04/05/11 23:50	2.23	100	CD10523	
Lead	18.0 (4.7)	6010B	500	1	SVD	04/05/11 23:50	2.23	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-15 0-3in
 Date Sampled: 04/05/11 13:30
 Percent Solids: 95
 Initial Volume: 20
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-17
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1221	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1232	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1242	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1248	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1254	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1260	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1262	ND (0.0526)	10	1	04/06/11 17:30		CD10519
Aroclor 1268	ND (0.0526)	10	1	04/06/11 17:30		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachlorobiphenyl [2C]	84 %		30-150
Surrogate: Tetrachloro-m-xylene	90 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-15 1.5ft
Date Sampled: 04/05/11 13:40
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-18
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	3.0 (2.0)	6010B	7	1	SVD	04/06/11 1:18	2.62	100	CD10524	
Lead	29.3 (4.1)	6010B	500	1	SVD	04/06/11 1:18	2.62	100	CD10524	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-15 1.5ft
 Date Sampled: 04/05/11 13:40
 Percent Solids: 93
 Initial Volume: 28.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-18
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0647)	220	1	04/06/11 14:21	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0324)	29	1	04/06/11 14:21	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0324)	100	1	04/06/11 14:21	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0324)	9.5	1	04/06/11 14:21	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.194)	4.1	1	04/06/11 14:21	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0324)	0.07	1	04/06/11 14:21	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0324)	63	1	04/06/11 14:21	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0324)	84	1	04/06/11 14:21	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0324)	240	1	04/06/11 14:21	CUD0029	CD10608
1,4-Dioxane - Screen	ND (3.24)		1	04/06/11 14:21	CUD0029	CD10608
1-Chlorohexane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0647)		1	04/06/11 14:21	CUD0029	CD10608
2-Butanone	ND (0.809)	10000	1	04/06/11 14:21	CUD0029	CD10608
2-Chlorotoluene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
2-Hexanone	ND (0.324)		1	04/06/11 14:21	CUD0029	CD10608
4-Chlorotoluene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.324)	10000	1	04/06/11 14:21	CUD0029	CD10608
Acetone	ND (0.809)	10000	1	04/06/11 14:21	CUD0029	CD10608
Benzene	ND (0.0324)	200	1	04/06/11 14:21	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-15 1.5ft
 Date Sampled: 04/05/11 13:40
 Percent Solids: 93
 Initial Volume: 28.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-18
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Bromochloromethane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Bromodichloromethane	ND (0.0324)	92	1	04/06/11 14:21	CUD0029	CD10608
Bromoform	ND (0.0324)	720	1	04/06/11 14:21	CUD0029	CD10608
Bromomethane	ND (0.0647)	2900	1	04/06/11 14:21	CUD0029	CD10608
Carbon Disulfide	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0324)	44	1	04/06/11 14:21	CUD0029	CD10608
Chlorobenzene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
Chloroethane	ND (0.0647)		1	04/06/11 14:21	CUD0029	CD10608
Chloroform	ND (0.0324)	940	1	04/06/11 14:21	CUD0029	CD10608
Chloromethane	ND (0.0647)		1	04/06/11 14:21	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Dibromochloromethane	ND (0.0324)	68	1	04/06/11 14:21	CUD0029	CD10608
Dibromomethane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Diethyl Ether	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Di-isopropyl ether	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Ethylbenzene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0324)	73	1	04/06/11 14:21	CUD0029	CD10608
Isopropylbenzene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
Methylene Chloride	ND (0.162)	760	1	04/06/11 14:21	CUD0029	CD10608
Naphthalene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
n-Butylbenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
n-Propylbenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
sec-Butylbenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Styrene	ND (0.0324)	190	1	04/06/11 14:21	CUD0029	CD10608
tert-Butylbenzene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-15 1.5ft
 Date Sampled: 04/05/11 13:40
 Percent Solids: 93
 Initial Volume: 28.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-18
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0324)	110	1	04/06/11 14:21	CUD0029	CD10608
Tetrahydrofuran	ND (0.324)		1	04/06/11 14:21	CUD0029	CD10608
Toluene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Trichloroethene	ND (0.0324)	520	1	04/06/11 14:21	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0324)		1	04/06/11 14:21	CUD0029	CD10608
Vinyl Acetate	ND (0.162)		1	04/06/11 14:21	CUD0029	CD10608
Vinyl Chloride	ND (0.0324)	3	1	04/06/11 14:21	CUD0029	CD10608
Xylene O	ND (0.0324)	10000	1	04/06/11 14:21	CUD0029	CD10608
Xylene P,M	ND (0.0647)	10000	1	04/06/11 14:21	CUD0029	CD10608
Xylenes (Total)	ND (0.0971)	10000	1	04/06/11 14:21		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	111 %		70-130
Surrogate: 4-Bromofluorobenzene	102 %		70-130
Surrogate: Dibromofluoromethane	112 %		70-130
Surrogate: Toluene-d8	100 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-15 1.5ft
Date Sampled: 04/05/11 13:40
Percent Solids: 93
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1221	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1232	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1242	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1248	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1254	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1260	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1262	ND (0.0535)	10	1	04/06/11 17:59		CD10519
Aroclor 1268	ND (0.0535)	10	1	04/06/11 17:59		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	85 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	82 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	85 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-15 1.5ft
Date Sampled: 04/05/11 13:40
Percent Solids: 93
Initial Volume: 20
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	320 (40.3)	2500	1	04/06/11 14:34	CUD0033	CD10414
	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
<i>Surrogate: O-Terphenyl</i>	<i>110 %</i>		<i>40-140</i>			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-15 1.5ft
 Date Sampled: 04/05/11 13:40
 Percent Solids: 93
 Initial Volume: 15
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-18
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Acenaphthene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Acenaphthylene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Anthracene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Benzo(a)anthracene	ND (0.358)	7.8	1	04/06/11 14:04	CUD0026	CD10415
Benzo(a)pyrene	0.370 (0.180)	0.8	1	04/06/11 14:04	CUD0026	CD10415
Benzo(b)fluoranthene	0.626 (0.358)	7.8	1	04/06/11 14:04	CUD0026	CD10415
Benzo(g,h,i)perylene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Benzo(k)fluoranthene	ND (0.358)	78	1	04/06/11 14:04	CUD0026	CD10415
Chrysene	0.314 (0.180)	780	1	04/06/11 14:04	CUD0026	CD10415
Dibenzo(a,h)Anthracene	ND (0.180)	0.8	1	04/06/11 14:04	CUD0026	CD10415
Fluoranthene	0.410 (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Fluorene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Indeno(1,2,3-cd)Pyrene	ND (0.358)	7.8	1	04/06/11 14:04	CUD0026	CD10415
Naphthalene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Phenanthrene	ND (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415
Pyrene	0.513 (0.358)	10000	1	04/06/11 14:04	CUD0026	CD10415

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	70 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	65 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	98 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-15 1.5ft
Date Sampled: 04/05/11 13:40
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-18
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (1.07)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	3210 (100)	§			§	04/05/11 0:00	mg/kg	CD10727	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-16 0-3in
Date Sampled: 04/05/11 13:44
Percent Solids: 94

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-19
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 17:56	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:56	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 17:56	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-16 0-3in
 Date Sampled: 04/05/11 13:44
 Percent Solids: 94

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-19
 Sample Matrix: Soil
 Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.42)	6010B	1000	1	SVD	04/05/11 23:54	2.53	100	CD10523	
Chromium	6.2 (0.8)	6010B	10000	1	SVD	04/05/11 23:54	2.53	100	CD10523	
Lead	19.7 (4.2)	6010B	500	1	SVD	04/05/11 23:54	2.53	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-16 0-3in
Date Sampled: 04/05/11 13:44
Percent Solids: 94
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-19
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1221	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1232	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1242	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1248	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1254	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1260	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1262	ND (0.0521)	10	1	04/06/11 18:28		CD10519
Aroclor 1268	ND (0.0521)	10	1	04/06/11 18:28		CD10519

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	<i>128 %</i>		<i>30-150</i>
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>89 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>97 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>98 %</i>		<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-17 0-3in
Date Sampled: 04/05/11 13:57
Percent Solids: 95

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-20
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 18:00	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 18:00	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 18:00	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-17 0-3in
Date Sampled: 04/05/11 13:57
Percent Solids: 95

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-20
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.41)	6010B	1000	1	SVD	04/05/11 23:59	2.61	100	CD10523	
Chromium	4.3 (0.8)	6010B	10000	1	SVD	04/05/11 23:59	2.61	100	CD10523	
Lead	5.7 (4.0)	6010B	500	1	SVD	04/05/11 23:59	2.61	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-17 0-3in
Date Sampled: 04/05/11 13:57
Percent Solids: 95
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-20
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1221	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1232	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1242	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1248	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1254	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1260	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1262	ND (0.0526)	10	1	04/06/11 12:34		CD10519
Aroclor 1268	ND (0.0526)	10	1	04/06/11 12:34		CD10519

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
<i>Surrogate: Decachlorobiphenyl</i>	80 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	83 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-18 0-3in
Date Sampled: 04/05/11 14:02
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-21
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 18:04	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 18:04	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 18:04	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-18 0-3in
Date Sampled: 04/05/11 14:02
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-21
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.46)	6010B	1000	1	SVD	04/06/11 0:03	2.36	100	CD10523	
Chromium	9.5 (0.9)	6010B	10000	1	SVD	04/06/11 0:03	2.36	100	CD10523	
Lead	18.2 (4.6)	6010B	500	1	SVD	04/06/11 0:03	2.36	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-18 0-3in
Date Sampled: 04/05/11 14:02
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-21
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1221	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1232	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1242	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1248	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1254	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1260	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1262	ND (0.0532)	10	1	04/06/11 11:06		CD10520
Aroclor 1268	ND (0.0532)	10	1	04/06/11 11:06		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	93 %		30-150
Surrogate: Decachlorobiphenyl [2C]	90 %		30-150
Surrogate: Tetrachloro-m-xylene	92 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	97 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-18 1ft
Date Sampled: 04/05/11 14:07
Percent Solids: 95

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-22
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Arsenic	4.8 (2.2)	6010B	7	1	SVD	04/06/11 1:23	2.37	100	CD10524	
Lead	5.5 (4.4)	6010B	500	1	SVD	04/06/11 1:23	2.37	100	CD10524	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-18 1ft
 Date Sampled: 04/05/11 14:07
 Percent Solids: 95
 Initial Volume: 28.8
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-22
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.0601)	220	1	04/06/11 14:51	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0300)	29	1	04/06/11 14:51	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0300)	100	1	04/06/11 14:51	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0300)	9.5	1	04/06/11 14:51	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.180)	4.1	1	04/06/11 14:51	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0300)	0.07	1	04/06/11 14:51	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0300)	63	1	04/06/11 14:51	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0300)	84	1	04/06/11 14:51	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0300)	240	1	04/06/11 14:51	CUD0029	CD10608
1,4-Dioxane - Screen	ND (3.00)		1	04/06/11 14:51	CUD0029	CD10608
1-Chlorohexane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
2,2-Dichloropropane	ND (0.0601)		1	04/06/11 14:51	CUD0029	CD10608
2-Butanone	ND (0.751)	10000	1	04/06/11 14:51	CUD0029	CD10608
2-Chlorotoluene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
2-Hexanone	ND (0.300)		1	04/06/11 14:51	CUD0029	CD10608
4-Chlorotoluene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.300)	10000	1	04/06/11 14:51	CUD0029	CD10608
Acetone	ND (0.751)	10000	1	04/06/11 14:51	CUD0029	CD10608
Benzene	ND (0.0300)	200	1	04/06/11 14:51	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-18 1ft
 Date Sampled: 04/05/11 14:07
 Percent Solids: 95
 Initial Volume: 28.8
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-22
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Bromochloromethane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Bromodichloromethane	ND (0.0300)	92	1	04/06/11 14:51	CUD0029	CD10608
Bromoform	ND (0.0300)	720	1	04/06/11 14:51	CUD0029	CD10608
Bromomethane	ND (0.0601)	2900	1	04/06/11 14:51	CUD0029	CD10608
Carbon Disulfide	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0300)	44	1	04/06/11 14:51	CUD0029	CD10608
Chlorobenzene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
Chloroethane	ND (0.0601)		1	04/06/11 14:51	CUD0029	CD10608
Chloroform	ND (0.0300)	940	1	04/06/11 14:51	CUD0029	CD10608
Chloromethane	ND (0.0601)		1	04/06/11 14:51	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Dibromochloromethane	ND (0.0300)	68	1	04/06/11 14:51	CUD0029	CD10608
Dibromomethane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Diethyl Ether	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Di-isopropyl ether	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Ethylbenzene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0300)	73	1	04/06/11 14:51	CUD0029	CD10608
Isopropylbenzene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
Methylene Chloride	ND (0.150)	760	1	04/06/11 14:51	CUD0029	CD10608
Naphthalene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
n-Butylbenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
n-Propylbenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
sec-Butylbenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Styrene	ND (0.0300)	190	1	04/06/11 14:51	CUD0029	CD10608
tert-Butylbenzene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-18 1ft
 Date Sampled: 04/05/11 14:07
 Percent Solids: 95
 Initial Volume: 28.8
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-22
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0300)	110	1	04/06/11 14:51	CUD0029	CD10608
Tetrahydrofuran	ND (0.300)		1	04/06/11 14:51	CUD0029	CD10608
Toluene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Trichloroethene	ND (0.0300)	520	1	04/06/11 14:51	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0300)		1	04/06/11 14:51	CUD0029	CD10608
Vinyl Acetate	ND (0.150)		1	04/06/11 14:51	CUD0029	CD10608
Vinyl Chloride	ND (0.0300)	3	1	04/06/11 14:51	CUD0029	CD10608
Xylene O	ND (0.0300)	10000	1	04/06/11 14:51	CUD0029	CD10608
Xylene P,M	ND (0.0601)	10000	1	04/06/11 14:51	CUD0029	CD10608
Xylenes (Total)	ND (0.0901)	10000	1	04/06/11 14:51		[CALC]

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	99 %		70-130
Surrogate: 4-Bromofluorobenzene	95 %		70-130
Surrogate: Dibromofluoromethane	102 %		70-130
Surrogate: Toluene-d8	92 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-18 1ft
 Date Sampled: 04/05/11 14:07
 Percent Solids: 95
 Initial Volume: 20.2
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-22
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1221	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1232	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1242	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1248	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1254	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1260	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1262	ND (0.0521)	10	1	04/06/11 11:23		CD10520
Aroclor 1268	ND (0.0521)	10	1	04/06/11 11:23		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	78 %		30-150
Surrogate: Decachlorobiphenyl [2C]	79 %		30-150
Surrogate: Tetrachloro-m-xylene	78 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-18 1ft
Date Sampled: 04/05/11 14:07
Percent Solids: 95
Initial Volume: 20
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-22
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Total Petroleum Hydrocarbons	ND (39.5)	2500	1	04/06/11 14:34	CUD0032	CD10414
	<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: GRS-18 1ft
 Date Sampled: 04/05/11 14:07
 Percent Solids: 95
 Initial Volume: 15.2
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-22
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 18:00

All methods used are in accordance with 40 CFR 136.

8270C Polynuclear Aromatic Hydrocarbons

RI - IC DEC

<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 (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Acenaphthene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Acenaphthylene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Anthracene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Benzo(a)anthracene	ND (0.346)	7.8	1	04/06/11 10:33	CUD0026	CD10415
Benzo(a)pyrene	ND (0.173)	0.8	1	04/06/11 10:33	CUD0026	CD10415
Benzo(b)fluoranthene	ND (0.346)	7.8	1	04/06/11 10:33	CUD0026	CD10415
Benzo(g,h,i)perylene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Benzo(k)fluoranthene	ND (0.346)	78	1	04/06/11 10:33	CUD0026	CD10415
Chrysene	ND (0.173)	780	1	04/06/11 10:33	CUD0026	CD10415
Dibenzo(a,h)Anthracene	ND (0.173)	0.8	1	04/06/11 10:33	CUD0026	CD10415
Fluoranthene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Fluorene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Indeno(1,2,3-cd)Pyrene	ND (0.346)	7.8	1	04/06/11 10:33	CUD0026	CD10415
Naphthalene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Phenanthrene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415
Pyrene	ND (0.346)	10000	1	04/06/11 10:33	CUD0026	CD10415

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichlorobenzene-d4	68 %		30-130
Surrogate: 2-Fluorobiphenyl	76 %		30-130
Surrogate: Nitrobenzene-d5	66 %		30-130
Surrogate: p-Terphenyl-d14	107 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-18 1ft
Date Sampled: 04/05/11 14:07
Percent Solids: 95

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-22
Sample Matrix: Soil

All methods used are in accordance with 40 CFR 136.

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>					
Total Cyanide	ND (0.98)	9014	10000	1	EEM	04/07/11 10:15	mg/kg dry	CD10707	
Total Organic Carbon	694 (100)	§			§	04/05/11 0:00	mg/kg	CD10727	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-19 0-3in
Date Sampled: 04/05/11 14:18
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-23
Sample Matrix: Soil
Units: mg/L

All methods used are in accordance with 40 CFR 136.

TCLP Extraction Date: 4/5/11 18:30

1311/6000/7000 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Cadmium	ND (0.0500)	1311/6010B	1	1	SVD	04/06/11 18:09	5	50	CD10601
Chromium	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 18:09	5	50	CD10601
Lead	ND (0.200)	1311/6010B	5	1	SVD	04/06/11 18:09	5	50	CD10601



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRS-19 0-3in
Date Sampled: 04/05/11 14:18
Percent Solids: 93

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-23
Sample Matrix: Soil
Units: mg/kg dry

All methods used are in accordance with 40 CFR 136.

3050B/6000/7000 Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Method</u>	<u>RI - IC DEC</u>			<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
			<u>Limit</u>	<u>DF</u>						
Cadmium	ND (0.48)	6010B	1000	1	SVD	04/06/11 0:08	2.27	100	CD10523	
Chromium	19.9 (0.9)	6010B	10000	1	SVD	04/06/11 0:08	2.27	100	CD10523	
Lead	114 (4.7)	6010B	500	1	SVD	04/06/11 0:08	2.27	100	CD10523	



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRS-19 0-3in
 Date Sampled: 04/05/11 14:18
 Percent Solids: 93
 Initial Volume: 20.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-23
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1221	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1232	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1242	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1248	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1254	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1260	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1262	ND (0.0535)	10	1	04/06/11 11:42		CD10520
Aroclor 1268	ND (0.0535)	10	1	04/06/11 11:42		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	84 %		30-150
Surrogate: Decachlorobiphenyl [2C]	103 %		30-150
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	90 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: CS-1
 Date Sampled: 04/05/11 09:10
 Percent Solids: 96
 Initial Volume: 10.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-24
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1221	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1232	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1242	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1248	0.148 (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1254	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1260	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1262	ND (0.103)	10	1	04/06/11 14:36		CD10520
Aroclor 1268	ND (0.103)	10	1	04/06/11 14:36		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	94 %		30-150
Surrogate: Decachlorobiphenyl [2C]	94 %		30-150
Surrogate: Tetrachloro-m-xylene	96 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	94 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: CS-2
 Date Sampled: 04/05/11 09:15
 Percent Solids: 94
 Initial Volume: 10.2
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-25
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1221	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1232	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1242	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1248	16.5 (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1254	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1260	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1262	ND (2.09)	10	20	04/06/11 22:20		CD10520
Aroclor 1268	ND (2.09)	10	20	04/06/11 22:20		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: CS-3
 Date Sampled: 04/05/11 09:20
 Percent Solids: 92
 Initial Volume: 10
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-26
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1221	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1232	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1242	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1248	10.1 (1.09)	10	10	04/06/11 22:49		CD10520
Aroclor 1254	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1260	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1262	ND (0.109)	10	1	04/06/11 15:05		CD10520
Aroclor 1268	ND (0.109)	10	1	04/06/11 15:05		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	84 %		30-150
Surrogate: Decachlorobiphenyl [2C]	78 %		30-150
Surrogate: Tetrachloro-m-xylene	74 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	76 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: RW-1
Date Sampled: 04/05/11 09:25
Percent Solids: 95
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-27
Sample Matrix: Solid
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1221	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1232	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1242	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1248	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1254	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1260	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1262	ND (0.105)	10	1	04/06/11 12:20		CD10520
Aroclor 1268	ND (0.105)	10	1	04/06/11 12:20		CD10520

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	80 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	78 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	81 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	91 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: RW-2
Date Sampled: 04/05/11 09:29
Percent Solids: 95
Initial Volume: 10
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-28
Sample Matrix: Solid
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1221	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1232	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1242	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1248	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1254	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1260	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1262	ND (0.105)	10	1	04/06/11 12:39		CD10520
Aroclor 1268	ND (0.105)	10	1	04/06/11 12:39		CD10520

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	51 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	44 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	42 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	47 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: RW-3
 Date Sampled: 04/05/11 09:48
 Percent Solids: 95
 Initial Volume: 10.1
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-29
 Sample Matrix: Solid
 Units: mg/kg dry
 Analyst: IBM
 Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1221	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1232	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1242	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1248	4.58 (0.521)	10	5	04/06/11 23:17		CD10520
Aroclor 1254	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1260	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1262	ND (0.104)	10	1	04/06/11 15:34		CD10520
Aroclor 1268	ND (0.104)	10	1	04/06/11 15:34		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	84 %		30-150
Surrogate: Decachlorobiphenyl [2C]	78 %		30-150
Surrogate: Tetrachloro-m-xylene	69 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	70 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: RW-4
Date Sampled: 04/05/11 10:05
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104021
ESS Laboratory Sample ID: 1104021-30
Sample Matrix: Solid
Units: mg/kg dry
Analyst: IBM
Prepared: 4/5/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Aroclor 1016	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1221	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1232	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1242	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1248	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1254	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1260	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1262	ND (0.102)	10	1	04/06/11 16:03		CD10520
Aroclor 1268	ND (0.102)	10	1	04/06/11 16:03		CD10520

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	79 %		30-150
Surrogate: Decachlorobiphenyl [2C]	77 %		30-150
Surrogate: Tetrachloro-m-xylene	80 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	81 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: Trip Blank
 Date Sampled: 04/05/11 00:00
 Percent Solids: N/A
 Initial Volume: 15
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-31
 Sample Matrix: Solid
 Units: mg/kg
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
1,1,1,2-Tetrachloroethane	ND (0.100)	220	1	04/06/11 11:53	CUD0029	CD10608
1,1,1-Trichloroethane	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
1,1,2,2-Tetrachloroethane	ND (0.0500)	29	1	04/06/11 11:53	CUD0029	CD10608
1,1,2-Trichloroethane	ND (0.0500)	100	1	04/06/11 11:53	CUD0029	CD10608
1,1-Dichloroethane	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
1,1-Dichloroethene	ND (0.0500)	9.5	1	04/06/11 11:53	CUD0029	CD10608
1,1-Dichloropropene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,2,3-Trichlorobenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,2,3-Trichloropropane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,2,4-Trichlorobenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,2,4-Trimethylbenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,2-Dibromo-3-Chloropropane	ND (0.300)	4.1	1	04/06/11 11:53	CUD0029	CD10608
1,2-Dibromoethane	ND (0.0500)	0.07	1	04/06/11 11:53	CUD0029	CD10608
1,2-Dichlorobenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,2-Dichloroethane	ND (0.0500)	63	1	04/06/11 11:53	CUD0029	CD10608
1,2-Dichloropropane	ND (0.0500)	84	1	04/06/11 11:53	CUD0029	CD10608
1,3,5-Trimethylbenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,3-Dichlorobenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,3-Dichloropropane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,4-Dichlorobenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
1,4-Dioxane - Screen	ND (5.00)		1	04/06/11 11:53	CUD0029	CD10608
1-Chlorohexane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
2,2-Dichloropropane	ND (0.100)		1	04/06/11 11:53	CUD0029	CD10608
2-Butanone	ND (1.25)	10000	1	04/06/11 11:53	CUD0029	CD10608
2-Chlorotoluene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
2-Hexanone	ND (0.500)		1	04/06/11 11:53	CUD0029	CD10608
4-Chlorotoluene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
4-Isopropyltoluene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
4-Methyl-2-Pentanone	ND (0.500)	10000	1	04/06/11 11:53	CUD0029	CD10608
Acetone	ND (1.25)	10000	1	04/06/11 11:53	CUD0029	CD10608
Benzene	ND (0.0500)	200	1	04/06/11 11:53	CUD0029	CD10608

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: Trip Blank
 Date Sampled: 04/05/11 00:00
 Percent Solids: N/A
 Initial Volume: 15
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-31
 Sample Matrix: Solid
 Units: mg/kg
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Bromobenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Bromochloromethane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Bromodichloromethane	ND (0.0500)	92	1	04/06/11 11:53	CUD0029	CD10608
Bromoform	ND (0.0500)	720	1	04/06/11 11:53	CUD0029	CD10608
Bromomethane	ND (0.100)	2900	1	04/06/11 11:53	CUD0029	CD10608
Carbon Disulfide	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Carbon Tetrachloride	ND (0.0500)	44	1	04/06/11 11:53	CUD0029	CD10608
Chlorobenzene	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
Chloroethane	ND (0.100)		1	04/06/11 11:53	CUD0029	CD10608
Chloroform	ND (0.0500)	940	1	04/06/11 11:53	CUD0029	CD10608
Chloromethane	ND (0.100)		1	04/06/11 11:53	CUD0029	CD10608
cis-1,2-Dichloroethene	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
cis-1,3-Dichloropropene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Dibromochloromethane	ND (0.0500)	68	1	04/06/11 11:53	CUD0029	CD10608
Dibromomethane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Dichlorodifluoromethane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Diethyl Ether	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Di-isopropyl ether	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Ethyl tertiary-butyl ether	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Ethylbenzene	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
Hexachlorobutadiene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Isopropylbenzene	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
Methyl tert-Butyl Ether	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
Methylene Chloride	ND (0.250)	760	1	04/06/11 11:53	CUD0029	CD10608
Naphthalene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
n-Butylbenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
n-Propylbenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
sec-Butylbenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Styrene	ND (0.0500)	190	1	04/06/11 11:53	CUD0029	CD10608
tert-Butylbenzene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Tertiary-amyl methyl ether	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: Trip Blank
 Date Sampled: 04/05/11 00:00
 Percent Solids: N/A
 Initial Volume: 15
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1104021
 ESS Laboratory Sample ID: 1104021-31
 Sample Matrix: Solid
 Units: mg/kg
 Analyst: MD

All methods used are in accordance with 40 CFR 136.

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>RI - IC DEC</u>		<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
		<u>Limit</u>	<u>DF</u>			
Tetrachloroethene	ND (0.0500)	110	1	04/06/11 11:53	CUD0029	CD10608
Tetrahydrofuran	ND (0.500)		1	04/06/11 11:53	CUD0029	CD10608
Toluene	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
trans-1,2-Dichloroethene	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
trans-1,3-Dichloropropene	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Trichloroethene	ND (0.0500)	520	1	04/06/11 11:53	CUD0029	CD10608
Trichlorofluoromethane	ND (0.0500)		1	04/06/11 11:53	CUD0029	CD10608
Vinyl Acetate	ND (0.250)		1	04/06/11 11:53	CUD0029	CD10608
Vinyl Chloride	ND (0.0500)	3	1	04/06/11 11:53	CUD0029	CD10608
Xylene O	ND (0.0500)	10000	1	04/06/11 11:53	CUD0029	CD10608
Xylene P,M	ND (0.100)	10000	1	04/06/11 11:53	CUD0029	CD10608
Xylenes (Total)	ND (0.300)		0	04/06/11 11:53	CUD0029	CD10608

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: 1,2-Dichloroethane-d4	101 %		70-130
Surrogate: 4-Bromofluorobenzene	94 %		70-130
Surrogate: Dibromofluoromethane	103 %		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: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
1311/6000/7000 TCLP Metals										
Batch CD10601 - 3005A										
Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
Blank										
Cadmium	ND	0.0500	mg/L							
Chromium	ND	0.200	mg/L							
Lead	ND	0.200	mg/L							
LCS										
Cadmium	2.41	0.0500	mg/L	2.500		97	80-120			
Chromium	4.82	0.200	mg/L	5.000		96	80-120			
Lead	4.85	0.200	mg/L	5.000		97	80-120			
LCS Dup										
Cadmium	2.40	0.0500	mg/L	2.500		96	80-120	0.7	20	
Chromium	4.78	0.200	mg/L	5.000		96	80-120	0.7	20	
Lead	4.84	0.200	mg/L	5.000		97	80-120	0.2	20	
Duplicate Source: 1104021-12										
Cadmium	0.0124	0.0500	mg/L		0.0151			20	20	
Chromium	ND	0.200	mg/L		ND				20	
Lead	ND	0.200	mg/L		ND				20	
Duplicate Source: 1104021-23										
Cadmium	0.0162	0.0500	mg/L		0.0151			7	20	
Chromium	ND	0.200	mg/L		ND				20	
Lead	0.155	0.200	mg/L		0.168			9	20	
Matrix Spike Source: 1104021-12										
Cadmium	2.38	0.0500	mg/L	2.500	0.0151	94	75-125			
Chromium	4.80	0.200	mg/L	5.000	ND	96	75-125			
Lead	4.80	0.200	mg/L	5.000	ND	96	75-125			
Matrix Spike Source: 1104021-23										
Cadmium	2.41	0.0500	mg/L	2.500	0.0151	96	75-125			
Chromium	4.78	0.200	mg/L	5.000	ND	96	75-125			
Lead	5.05	0.200	mg/L	5.000	0.168	98	75-125			

3050B/6000/7000 Total Metals

Batch CD10523 - 3050B

Blank										
Arsenic	ND	2.5	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.0	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
3050B/6000/7000 Total Metals										
Batch CD10523 - 3050B										
Lead	ND	5.0	mg/kg wet							
LCS										
Arsenic	87.9	9.1	mg/kg wet	92.60		95	80-120			
Cadmium	57.1	1.83	mg/kg wet	61.80		92	80-120			
Chromium	62.7	3.6	mg/kg wet	71.30		88	80-120			
Lead	87.1	18.2	mg/kg wet	92.40		94	80-120			
LCS Dup										
Arsenic	88.8	8.9	mg/kg wet	92.60		96	80-120	1	20	
Cadmium	56.1	1.79	mg/kg wet	61.80		91	80-120	2	20	
Chromium	61.2	3.6	mg/kg wet	71.30		86	80-120	2	20	
Lead	86.2	17.9	mg/kg wet	92.40		93	80-120	1	20	
Duplicate Source: 1104021-13										
Cadmium	ND	0.50	mg/kg dry		ND					35
Chromium	7.23	1.0	mg/kg dry		8.57			17		35
Lead	22.5	4.9	mg/kg dry		27.5			20		35
Duplicate Source: 1104021-10										
Arsenic	2.33	2.4	mg/kg dry		1.90			20		35
Lead	12.0	4.9	mg/kg dry		11.9			1		35
Matrix Spike Source: 1104021-13										
Cadmium	9.08	0.43	mg/kg dry	10.77	ND	84	75-125			
Chromium	47.9	0.9	mg/kg dry	21.53	8.57	183	75-125			M+
Lead	48.8	4.3	mg/kg dry	21.53	27.5	99	75-125			
Matrix Spike Source: 1104021-10										
Arsenic	20.0	2.3	mg/kg dry	23.07	1.90	79	75-125			
Lead	32.1	4.6	mg/kg dry	23.07	11.9	88	75-125			
Batch CD10524 - 3050B										
Blank										
Arsenic	ND	2.5	mg/kg wet							
Lead	ND	5.0	mg/kg wet							
LCS										
Arsenic	77.9	8.9	mg/kg wet	92.60		84	80-120			
Lead	81.4	17.9	mg/kg wet	92.40		88	80-120			
LCS Dup										
Arsenic	79.6	8.6	mg/kg wet	92.60		86	80-120	2	20	
Lead	83.6	17.2	mg/kg wet	92.40		90	80-120	3	20	
Duplicate Source: 1104021-22										
Arsenic	4.07	2.1	mg/kg dry		4.76			16		35
Lead	5.06	4.2	mg/kg dry		5.47			8		35
Matrix Spike Source: 1104021-22										
Arsenic	20.9	2.2	mg/kg dry	22.21	4.76	73	75-125			M-
Lead	23.2	4.4	mg/kg dry	22.21	5.47	80	75-125			

5035/8260B Volatile Organic Compounds / Methanol



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							
2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							
Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	ND	0.0500	mg/kg wet							
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

Dibromochloromethane	ND	0.0500	mg/kg wet							
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							
Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							
Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	2.37		mg/kg wet	2.500		95	70-130			
Surrogate: 4-Bromofluorobenzene	2.22		mg/kg wet	2.500		89	70-130			
Surrogate: Dibromofluoromethane	2.36		mg/kg wet	2.500		94	70-130			
Surrogate: Toluene-d8	2.09		mg/kg wet	2.500		84	70-130			

LCS

1,1,1,2-Tetrachloroethane	2.31	0.100	mg/kg wet	2.500		92	70-130			
1,1,1-Trichloroethane	2.52	0.0500	mg/kg wet	2.500		101	70-130			
1,1,2,2-Tetrachloroethane	2.51	0.0500	mg/kg wet	2.500		100	70-130			
1,1,2-Trichloroethane	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,1-Dichloroethane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,1-Dichloroethene	2.51	0.0500	mg/kg wet	2.500		101	70-130			
1,1-Dichloropropene	2.56	0.0500	mg/kg wet	2.500		103	70-130			
1,2,3-Trichlorobenzene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
1,2,3-Trichloropropane	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,2,4-Trichlorobenzene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,2,4-Trimethylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
1,2-Dibromo-3-Chloropropane	2.60	0.300	mg/kg wet	2.500		104	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
1,2-Dibromoethane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
1,2-Dichlorobenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
1,2-Dichloroethane	2.80	0.0500	mg/kg wet	2.500		112	70-130			
1,2-Dichloropropane	2.42	0.0500	mg/kg wet	2.500		97	70-130			
1,3,5-Trimethylbenzene	2.47	0.0500	mg/kg wet	2.500		99	70-130			
1,3-Dichlorobenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
1,3-Dichloropropane	2.34	0.0500	mg/kg wet	2.500		94	70-130			
1,4-Dichlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,4-Dioxane - Screen	54.4	5.00	mg/kg wet	50.00		109	44-241			
1-Chlorohexane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
2,2-Dichloropropane	2.65	0.100	mg/kg wet	2.500		106	70-130			
2-Butanone	13.0	1.25	mg/kg wet	12.50		104	70-130			
2-Chlorotoluene	2.27	0.0500	mg/kg wet	2.500		91	70-130			
2-Hexanone	13.2	0.500	mg/kg wet	12.50		106	70-130			
4-Chlorotoluene	2.39	0.0500	mg/kg wet	2.500		95	70-130			
4-Isopropyltoluene	2.21	0.0500	mg/kg wet	2.500		88	70-130			
4-Methyl-2-Pentanone	12.6	0.500	mg/kg wet	12.50		101	70-130			
Acetone	10.9	1.25	mg/kg wet	12.50		88	70-130			
Benzene	2.42	0.0500	mg/kg wet	2.500		97	70-130			
Bromobenzene	2.40	0.0500	mg/kg wet	2.500		96	70-130			
Bromochloromethane	2.32	0.0500	mg/kg wet	2.500		93	70-130			
Bromodichloromethane	2.70	0.0500	mg/kg wet	2.500		108	70-130			
Bromoform	2.60	0.0500	mg/kg wet	2.500		104	70-130			
Bromomethane	3.46	0.100	mg/kg wet	2.500		138	70-130			B+
Carbon Disulfide	2.50	0.0500	mg/kg wet	2.500		100	70-130			
Carbon Tetrachloride	2.82	0.0500	mg/kg wet	2.500		113	70-130			
Chlorobenzene	2.33	0.0500	mg/kg wet	2.500		93	70-130			
Chloroethane	3.27	0.100	mg/kg wet	2.500		131	70-130			B+
Chloroform	2.46	0.0500	mg/kg wet	2.500		98	70-130			
Chloromethane	2.27	0.100	mg/kg wet	2.500		91	70-130			
cis-1,2-Dichloroethene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
cis-1,3-Dichloropropene	2.53	0.0500	mg/kg wet	2.500		101	70-130			
Dibromochloromethane	2.58	0.0500	mg/kg wet	2.500		103	70-130			
Dibromomethane	2.32	0.0500	mg/kg wet	2.500		93	70-130			
Dichlorodifluoromethane	1.97	0.0500	mg/kg wet	2.500		79	70-130			
Diethyl Ether	2.37	0.0500	mg/kg wet	2.500		95	70-130			
Di-isopropyl ether	2.50	0.0500	mg/kg wet	2.500		100	70-130			
Ethyl tertiary-butyl ether	2.51	0.0500	mg/kg wet	2.500		100	70-130			
Ethylbenzene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
Hexachlorobutadiene	2.56	0.0500	mg/kg wet	2.500		102	70-130			
Isopropylbenzene	2.00	0.0500	mg/kg wet	2.500		80	70-130			
Methyl tert-Butyl Ether	2.52	0.0500	mg/kg wet	2.500		101	70-130			
Methylene Chloride	2.59	0.250	mg/kg wet	2.500		104	70-130			
Naphthalene	2.70	0.0500	mg/kg wet	2.500		108	70-130			
n-Butylbenzene	2.64	0.0500	mg/kg wet	2.500		106	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

n-Propylbenzene	2.52	0.0500	mg/kg wet	2.500		101	70-130			
sec-Butylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Styrene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
tert-Butylbenzene	2.36	0.0500	mg/kg wet	2.500		94	70-130			
Tertiary-amyl methyl ether	2.49	0.0500	mg/kg wet	2.500		99	70-130			
Tetrachloroethene	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Tetrahydrofuran	2.34	0.500	mg/kg wet	2.500		93	70-130			
Toluene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
trans-1,2-Dichloroethene	2.29	0.0500	mg/kg wet	2.500		92	70-130			
trans-1,3-Dichloropropene	2.41	0.0500	mg/kg wet	2.500		96	70-130			
Trichloroethene	2.43	0.0500	mg/kg wet	2.500		97	70-130			
Vinyl Acetate	2.80	0.250	mg/kg wet	2.500		112	70-130			
Vinyl Chloride	2.57	0.0500	mg/kg wet	2.500		103	70-130			
Xylene O	2.35	0.0500	mg/kg wet	2.500		94	70-130			
Xylene P,M	4.72	0.100	mg/kg wet	5.000		94	70-130			
Surrogate: 1,2-Dichloroethane-d4	2.43		mg/kg wet	2.500		97	70-130			
Surrogate: 4-Bromofluorobenzene	2.21		mg/kg wet	2.500		89	70-130			
Surrogate: Dibromofluoromethane	2.33		mg/kg wet	2.500		93	70-130			
Surrogate: Toluene-d8	2.16		mg/kg wet	2.500		87	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	2.28	0.100	mg/kg wet	2.500		91	70-130	1	25	
1,1,1-Trichloroethane	2.44	0.0500	mg/kg wet	2.500		98	70-130	3	25	
1,1,2,2-Tetrachloroethane	2.54	0.0500	mg/kg wet	2.500		102	70-130	1	25	
1,1,2-Trichloroethane	2.41	0.0500	mg/kg wet	2.500		96	70-130	0.2	25	
1,1-Dichloroethane	2.39	0.0500	mg/kg wet	2.500		96	70-130	1	25	
1,1-Dichloroethene	2.43	0.0500	mg/kg wet	2.500		97	70-130	3	25	
1,1-Dichloropropene	2.50	0.0500	mg/kg wet	2.500		100	70-130	2	25	
1,2,3-Trichlorobenzene	2.42	0.0500	mg/kg wet	2.500		97	70-130	0.5	25	
1,2,3-Trichloropropane	2.42	0.0500	mg/kg wet	2.500		97	70-130	2	25	
1,2,4-Trichlorobenzene	2.52	0.0500	mg/kg wet	2.500		101	70-130	5	25	
1,2,4-Trimethylbenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130	0.4	25	
1,2-Dibromo-3-Chloropropane	2.65	0.300	mg/kg wet	2.500		106	70-130	2	25	
1,2-Dibromoethane	2.38	0.0500	mg/kg wet	2.500		95	70-130	0.9	25	
1,2-Dichlorobenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130	0.3	25	
1,2-Dichloroethane	2.80	0.0500	mg/kg wet	2.500		112	70-130	0.1	25	
1,2-Dichloropropane	2.37	0.0500	mg/kg wet	2.500		95	70-130	2	25	
1,3,5-Trimethylbenzene	2.43	0.0500	mg/kg wet	2.500		97	70-130	1	25	
1,3-Dichlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	1	25	
1,3-Dichloropropane	2.32	0.0500	mg/kg wet	2.500		93	70-130	1	25	
1,4-Dichlorobenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130	1	25	
1,4-Dioxane - Screen	55.8	5.00	mg/kg wet	50.00		112	44-241	3	200	
1-Chlorohexane	2.37	0.0500	mg/kg wet	2.500		95	70-130	1	25	
2,2-Dichloropropane	2.56	0.100	mg/kg wet	2.500		103	70-130	3	25	
2-Butanone	13.5	1.25	mg/kg wet	12.50		108	70-130	4	25	
2-Chlorotoluene	2.48	0.0500	mg/kg wet	2.500		99	70-130	9	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
2-Hexanone	13.1	0.500	mg/kg wet	12.50		105	70-130	1	25	
4-Chlorotoluene	2.34	0.0500	mg/kg wet	2.500		94	70-130	2	25	
4-Isopropyltoluene	2.19	0.0500	mg/kg wet	2.500		88	70-130	1	25	
4-Methyl-2-Pentanone	12.9	0.500	mg/kg wet	12.50		103	70-130	2	25	
Acetone	12.9	1.25	mg/kg wet	12.50		103	70-130	16	25	
Benzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	1	25	
Bromobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	0.9	25	
Bromochloromethane	2.26	0.0500	mg/kg wet	2.500		90	70-130	3	25	
Bromodichloromethane	2.64	0.0500	mg/kg wet	2.500		105	70-130	2	25	
Bromoform	2.57	0.0500	mg/kg wet	2.500		103	70-130	0.9	25	
Bromomethane	3.35	0.100	mg/kg wet	2.500		134	70-130	3	25	B+
Carbon Disulfide	2.54	0.0500	mg/kg wet	2.500		101	70-130	1	25	
Carbon Tetrachloride	2.74	0.0500	mg/kg wet	2.500		109	70-130	3	25	
Chlorobenzene	2.32	0.0500	mg/kg wet	2.500		93	70-130	0.6	25	
Chloroethane	3.19	0.100	mg/kg wet	2.500		128	70-130	2	25	
Chloroform	2.44	0.0500	mg/kg wet	2.500		97	70-130	1	25	
Chloromethane	2.22	0.100	mg/kg wet	2.500		89	70-130	2	25	
cis-1,2-Dichloroethene	2.45	0.0500	mg/kg wet	2.500		98	70-130	0.4	25	
cis-1,3-Dichloropropene	2.48	0.0500	mg/kg wet	2.500		99	70-130	2	25	
Dibromochloromethane	2.59	0.0500	mg/kg wet	2.500		104	70-130	0.2	25	
Dibromomethane	2.33	0.0500	mg/kg wet	2.500		93	70-130	0.5	25	
Dichlorodifluoromethane	1.92	0.0500	mg/kg wet	2.500		77	70-130	3	25	
Diethyl Ether	2.35	0.0500	mg/kg wet	2.500		94	70-130	0.8	25	
Di-isopropyl ether	2.50	0.0500	mg/kg wet	2.500		100	70-130	0.08	25	
Ethyl tertiary-butyl ether	2.49	0.0500	mg/kg wet	2.500		100	70-130	0.8	25	
Ethylbenzene	2.37	0.0500	mg/kg wet	2.500		95	70-130	2	25	
Hexachlorobutadiene	2.66	0.0500	mg/kg wet	2.500		106	70-130	4	25	
Isopropylbenzene	1.98	0.0500	mg/kg wet	2.500		79	70-130	0.9	25	
Methyl tert-Butyl Ether	2.55	0.0500	mg/kg wet	2.500		102	70-130	1	25	
Methylene Chloride	2.57	0.250	mg/kg wet	2.500		103	70-130	0.9	25	
Naphthalene	2.82	0.0500	mg/kg wet	2.500		113	70-130	4	25	
n-Butylbenzene	2.63	0.0500	mg/kg wet	2.500		105	70-130	0.6	25	
n-Propylbenzene	2.35	0.0500	mg/kg wet	2.500		94	70-130	7	25	
sec-Butylbenzene	2.31	0.0500	mg/kg wet	2.500		92	70-130	2	25	
Styrene	2.40	0.0500	mg/kg wet	2.500		96	70-130	1	25	
tert-Butylbenzene	2.34	0.0500	mg/kg wet	2.500		94	70-130	0.6	25	
Tertiary-amyl methyl ether	2.49	0.0500	mg/kg wet	2.500		100	70-130	0.08	25	
Tetrachloroethene	2.19	0.0500	mg/kg wet	2.500		88	70-130	3	25	
Tetrahydrofuran	2.49	0.500	mg/kg wet	2.500		99	70-130	6	25	
Toluene	2.40	0.0500	mg/kg wet	2.500		96	70-130	1	25	
trans-1,2-Dichloroethene	2.27	0.0500	mg/kg wet	2.500		91	70-130	1	25	
trans-1,3-Dichloropropene	2.40	0.0500	mg/kg wet	2.500		96	70-130	0.4	25	
Trichloroethene	2.39	0.0500	mg/kg wet	2.500		96	70-130	2	25	
Vinyl Acetate	2.77	0.250	mg/kg wet	2.500		111	70-130	1	25	
Vinyl Chloride	2.50	0.0500	mg/kg wet	2.500		100	70-130	2	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
Xylene O	2.30	0.0500	mg/kg wet	2.500		92	70-130	2	25	
Xylene P,M	4.64	0.100	mg/kg wet	5.000		93	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	2.46		mg/kg wet	2.500		98	70-130			
Surrogate: 4-Bromofluorobenzene	2.24		mg/kg wet	2.500		90	70-130			
Surrogate: Dibromofluoromethane	2.32		mg/kg wet	2.500		93	70-130			
Surrogate: Toluene-d8	2.15		mg/kg wet	2.500		86	70-130			
Matrix Spike Source: 1104021-22										
1,1,1,2-Tetrachloroethane	1.30	0.0548	mg/kg dry	1.502	ND	86	70-130			
1,1,1-Trichloroethane	1.46	0.0274	mg/kg dry	1.502	ND	97	70-130			
1,1,2,2-Tetrachloroethane	1.42	0.0274	mg/kg dry	1.502	ND	95	70-130			
1,1,2-Trichloroethane	1.41	0.0274	mg/kg dry	1.502	ND	94	70-130			
1,1-Dichloroethane	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130			
1,1-Dichloroethene	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130			
1,1-Dichloropropene	1.48	0.0274	mg/kg dry	1.502	ND	98	70-130			
1,2,3-Trichlorobenzene	1.24	0.0274	mg/kg dry	1.502	ND	83	70-130			
1,2,3-Trichloropropane	1.40	0.0274	mg/kg dry	1.502	ND	93	70-130			
1,2,4-Trichlorobenzene	1.29	0.0274	mg/kg dry	1.502	ND	86	70-130			
1,2,4-Trimethylbenzene	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130			
1,2-Dibromo-3-Chloropropane	1.46	0.164	mg/kg dry	1.502	ND	97	70-130			
1,2-Dibromoethane	1.36	0.0274	mg/kg dry	1.502	ND	90	70-130			
1,2-Dichlorobenzene	1.30	0.0274	mg/kg dry	1.502	ND	87	70-130			
1,2-Dichloroethane	1.60	0.0274	mg/kg dry	1.502	ND	106	70-130			
1,2-Dichloropropane	1.34	0.0274	mg/kg dry	1.502	ND	89	70-130			
1,3,5-Trimethylbenzene	1.37	0.0274	mg/kg dry	1.502	ND	91	70-130			
1,3-Dichlorobenzene	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130			
1,3-Dichloropropane	1.33	0.0274	mg/kg dry	1.502	ND	88	70-130			
1,4-Dichlorobenzene	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130			
1,4-Dioxane - Screen	28.8	2.74	mg/kg dry	30.04	ND	96	44-241			
1-Chlorohexane	1.41	0.0274	mg/kg dry	1.502	ND	94	70-130			
2,2-Dichloropropane	1.36	0.0548	mg/kg dry	1.502	ND	91	70-130			
2-Butanone	7.46	0.685	mg/kg dry	7.511	ND	99	70-130			
2-Chlorotoluene	1.46	0.0274	mg/kg dry	1.502	ND	97	70-130			
2-Hexanone	7.22	0.274	mg/kg dry	7.511	ND	96	70-130			
4-Chlorotoluene	1.33	0.0274	mg/kg dry	1.502	ND	88	70-130			
4-Isopropyltoluene	1.23	0.0274	mg/kg dry	1.502	ND	82	70-130			
4-Methyl-2-Pentanone	7.13	0.274	mg/kg dry	7.511	ND	95	70-130			
Acetone	7.02	0.685	mg/kg dry	7.511	ND	94	70-130			
Benzene	1.37	0.0274	mg/kg dry	1.502	ND	91	70-130			
Bromobenzene	1.34	0.0274	mg/kg dry	1.502	ND	89	70-130			
Bromochloromethane	1.31	0.0274	mg/kg dry	1.502	ND	87	70-130			
Bromodichloromethane	1.49	0.0274	mg/kg dry	1.502	ND	99	70-130			
Bromoform	1.45	0.0274	mg/kg dry	1.502	ND	96	70-130			
Bromomethane	1.75	0.0548	mg/kg dry	1.502	ND	116	70-130			
Carbon Disulfide	1.44	0.0274	mg/kg dry	1.502	ND	96	70-130			
Carbon Tetrachloride	1.59	0.0274	mg/kg dry	1.502	ND	106	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

Chlorobenzene	1.34	0.0274	mg/kg dry	1.502	ND	89	70-130			
Chloroethane	1.87	0.0548	mg/kg dry	1.502	ND	125	70-130			
Chloroform	1.40	0.0274	mg/kg dry	1.502	ND	93	70-130			
Chloromethane	1.27	0.0548	mg/kg dry	1.502	ND	85	70-130			
cis-1,2-Dichloroethene	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130			
cis-1,3-Dichloropropene	1.39	0.0274	mg/kg dry	1.502	ND	93	70-130			
Dibromochloromethane	1.46	0.0274	mg/kg dry	1.502	ND	97	70-130			
Dibromomethane	1.31	0.0274	mg/kg dry	1.502	ND	87	70-130			
Dichlorodifluoromethane	1.14	0.0274	mg/kg dry	1.502	ND	76	70-130			
Diethyl Ether	1.33	0.0274	mg/kg dry	1.502	ND	89	70-130			
Di-isopropyl ether	1.40	0.0274	mg/kg dry	1.502	ND	93	70-130			
Ethyl tertiary-butyl ether	1.42	0.0274	mg/kg dry	1.502	ND	94	70-130			
Ethylbenzene	1.39	0.0274	mg/kg dry	1.502	ND	93	70-130			
Hexachlorobutadiene	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130			
Isopropylbenzene	1.14	0.0274	mg/kg dry	1.502	ND	76	70-130			
Methyl tert-Butyl Ether	1.43	0.0274	mg/kg dry	1.502	ND	95	70-130			
Methylene Chloride	1.46	0.137	mg/kg dry	1.502	ND	97	70-130			
Naphthalene	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130			
n-Butylbenzene	1.45	0.0274	mg/kg dry	1.502	ND	97	70-130			
n-Propylbenzene	1.30	0.0274	mg/kg dry	1.502	ND	87	70-130			
sec-Butylbenzene	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130			
Styrene	1.39	0.0274	mg/kg dry	1.502	ND	92	70-130			
tert-Butylbenzene	1.33	0.0274	mg/kg dry	1.502	ND	89	70-130			
Tertiary-amyl methyl ether	1.40	0.0274	mg/kg dry	1.502	ND	93	70-130			
Tetrachloroethene	1.29	0.0274	mg/kg dry	1.502	ND	86	70-130			
Tetrahydrofuran	1.43	0.274	mg/kg dry	1.502	ND	95	70-130			
Toluene	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130			
trans-1,2-Dichloroethene	1.31	0.0274	mg/kg dry	1.502	ND	87	70-130			
trans-1,3-Dichloropropene	1.33	0.0274	mg/kg dry	1.502	ND	88	70-130			
Trichloroethene	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130			
Vinyl Acetate	1.49	0.137	mg/kg dry	1.502	ND	99	70-130			
Vinyl Chloride	1.50	0.0274	mg/kg dry	1.502	ND	100	70-130			
Xylene O	1.34	0.0274	mg/kg dry	1.502	ND	89	70-130			
Xylene P,M	2.70	0.0548	mg/kg dry	3.004	ND	90	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.34</i>		mg/kg dry	<i>1.371</i>		<i>98</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>1.23</i>		mg/kg dry	<i>1.371</i>		<i>90</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>1.25</i>		mg/kg dry	<i>1.371</i>		<i>91</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>1.19</i>		mg/kg dry	<i>1.371</i>		<i>87</i>	<i>70-130</i>			

Matrix Spike Dup Source: 1104021-22

1,1,1,2-Tetrachloroethane	1.34	0.0548	mg/kg dry	1.502	ND	89	70-130	3	30	
1,1,1-Trichloroethane	1.50	0.0274	mg/kg dry	1.502	ND	100	70-130	3	30	
1,1,2,2-Tetrachloroethane	1.45	0.0274	mg/kg dry	1.502	ND	97	70-130	2	30	
1,1,2-Trichloroethane	1.43	0.0274	mg/kg dry	1.502	ND	95	70-130	1	30	
1,1-Dichloroethane	1.43	0.0274	mg/kg dry	1.502	ND	95	70-130	4	30	
1,1-Dichloroethene	1.50	0.0274	mg/kg dry	1.502	ND	100	70-130	8	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CD10608 - 5035										
1,1-Dichloropropene	1.57	0.0274	mg/kg dry	1.502	ND	104	70-130	6	30	
1,2,3-Trichlorobenzene	1.34	0.0274	mg/kg dry	1.502	ND	89	70-130	8	30	
1,2,3-Trichloropropane	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130	1	30	
1,2,4-Trichlorobenzene	1.36	0.0274	mg/kg dry	1.502	ND	91	70-130	5	30	
1,2,4-Trimethylbenzene	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130	4	30	
1,2-Dibromo-3-Chloropropane	1.47	0.164	mg/kg dry	1.502	ND	98	70-130	0.6	30	
1,2-Dibromoethane	1.38	0.0274	mg/kg dry	1.502	ND	92	70-130	2	30	
1,2-Dichlorobenzene	1.36	0.0274	mg/kg dry	1.502	ND	91	70-130	5	30	
1,2-Dichloroethane	1.64	0.0274	mg/kg dry	1.502	ND	109	70-130	2	30	
1,2-Dichloropropane	1.39	0.0274	mg/kg dry	1.502	ND	92	70-130	3	30	
1,3,5-Trimethylbenzene	1.45	0.0274	mg/kg dry	1.502	ND	96	70-130	5	30	
1,3-Dichlorobenzene	1.39	0.0274	mg/kg dry	1.502	ND	93	70-130	5	30	
1,3-Dichloropropane	1.35	0.0274	mg/kg dry	1.502	ND	90	70-130	2	30	
1,4-Dichlorobenzene	1.39	0.0274	mg/kg dry	1.502	ND	92	70-130	5	30	
1,4-Dioxane - Screen	30.5	2.74	mg/kg dry	30.04	ND	101	44-241	6	200	
1-Chlorohexane	1.45	0.0274	mg/kg dry	1.502	ND	96	70-130	2	30	
2,2-Dichloropropane	1.41	0.0548	mg/kg dry	1.502	ND	94	70-130	3	30	
2-Butanone	7.43	0.685	mg/kg dry	7.511	ND	99	70-130	0.4	30	
2-Chlorotoluene	1.50	0.0274	mg/kg dry	1.502	ND	100	70-130	3	30	
2-Hexanone	7.32	0.274	mg/kg dry	7.511	ND	97	70-130	1	30	
4-Chlorotoluene	1.39	0.0274	mg/kg dry	1.502	ND	93	70-130	5	30	
4-Isopropyltoluene	1.30	0.0274	mg/kg dry	1.502	ND	86	70-130	5	30	
4-Methyl-2-Pentanone	7.21	0.274	mg/kg dry	7.511	ND	96	70-130	1	30	
Acetone	7.02	0.685	mg/kg dry	7.511	ND	93	70-130	0.1	30	
Benzene	1.42	0.0274	mg/kg dry	1.502	ND	95	70-130	4	30	
Bromobenzene	1.40	0.0274	mg/kg dry	1.502	ND	93	70-130	4	30	
Bromochloromethane	1.32	0.0274	mg/kg dry	1.502	ND	88	70-130	1	30	
Bromodichloromethane	1.54	0.0274	mg/kg dry	1.502	ND	103	70-130	3	30	
Bromoform	1.46	0.0274	mg/kg dry	1.502	ND	97	70-130	1	30	
Bromomethane	2.01	0.0548	mg/kg dry	1.502	ND	134	70-130	14	30	M+
Carbon Disulfide	1.52	0.0274	mg/kg dry	1.502	ND	101	70-130	5	30	
Carbon Tetrachloride	1.66	0.0274	mg/kg dry	1.502	ND	111	70-130	4	30	
Chlorobenzene	1.37	0.0274	mg/kg dry	1.502	ND	91	70-130	2	30	
Chloroethane	2.04	0.0548	mg/kg dry	1.502	ND	136	70-130	8	30	M+
Chloroform	1.44	0.0274	mg/kg dry	1.502	ND	96	70-130	3	30	
Chloromethane	1.32	0.0548	mg/kg dry	1.502	ND	88	70-130	3	30	
cis-1,2-Dichloroethene	1.45	0.0274	mg/kg dry	1.502	ND	97	70-130	5	30	
cis-1,3-Dichloropropene	1.42	0.0274	mg/kg dry	1.502	ND	95	70-130	2	30	
Dibromochloromethane	1.47	0.0274	mg/kg dry	1.502	ND	98	70-130	1	30	
Dibromomethane	1.34	0.0274	mg/kg dry	1.502	ND	89	70-130	2	30	
Dichlorodifluoromethane	1.18	0.0274	mg/kg dry	1.502	ND	79	70-130	3	30	
Diethyl Ether	1.36	0.0274	mg/kg dry	1.502	ND	91	70-130	2	30	
Di-isopropyl ether	1.45	0.0274	mg/kg dry	1.502	ND	97	70-130	3	30	
Ethyl tertiary-butyl ether	1.44	0.0274	mg/kg dry	1.502	ND	96	70-130	2	30	
Ethylbenzene	1.43	0.0274	mg/kg dry	1.502	ND	95	70-130	2	30	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CD10608 - 5035

Hexachlorobutadiene	1.50	0.0274	mg/kg dry	1.502	ND	100	70-130	13	30	
Isopropylbenzene	1.18	0.0274	mg/kg dry	1.502	ND	79	70-130	4	30	
Methyl tert-Butyl Ether	1.45	0.0274	mg/kg dry	1.502	ND	96	70-130	1	30	
Methylene Chloride	1.52	0.137	mg/kg dry	1.502	ND	101	70-130	4	30	
Naphthalene	1.43	0.0274	mg/kg dry	1.502	ND	95	70-130	8	30	
n-Butylbenzene	1.55	0.0274	mg/kg dry	1.502	ND	103	70-130	6	30	
n-Propylbenzene	1.39	0.0274	mg/kg dry	1.502	ND	92	70-130	6	30	
sec-Butylbenzene	1.39	0.0274	mg/kg dry	1.502	ND	93	70-130	6	30	
Styrene	1.42	0.0274	mg/kg dry	1.502	ND	95	70-130	2	30	
tert-Butylbenzene	1.39	0.0274	mg/kg dry	1.502	ND	93	70-130	4	30	
Tertiary-amyl methyl ether	1.42	0.0274	mg/kg dry	1.502	ND	94	70-130	1	30	
Tetrachloroethene	1.33	0.0274	mg/kg dry	1.502	ND	89	70-130	3	30	
Tetrahydrofuran	1.41	0.274	mg/kg dry	1.502	ND	94	70-130	1	30	
Toluene	1.44	0.0274	mg/kg dry	1.502	ND	96	70-130	4	30	
trans-1,2-Dichloroethene	1.37	0.0274	mg/kg dry	1.502	ND	91	70-130	5	30	
trans-1,3-Dichloropropene	1.36	0.0274	mg/kg dry	1.502	ND	91	70-130	3	30	
Trichloroethene	1.44	0.0274	mg/kg dry	1.502	ND	96	70-130	4	30	
Vinyl Acetate	1.56	0.137	mg/kg dry	1.502	ND	104	70-130	4	30	
Vinyl Chloride	1.56	0.0274	mg/kg dry	1.502	ND	104	70-130	4	30	
Xylene O	1.37	0.0274	mg/kg dry	1.502	ND	91	70-130	3	30	
Xylene P,M	2.79	0.0548	mg/kg dry	3.004	ND	93	70-130	3	30	
Surrogate: 1,2-Dichloroethane-d4	1.36		mg/kg dry	1.371		99	70-130			
Surrogate: 4-Bromofluorobenzene	1.25		mg/kg dry	1.371		91	70-130			
Surrogate: Dibromofluoromethane	1.28		mg/kg dry	1.371		94	70-130			
Surrogate: Toluene-d8	1.21		mg/kg dry	1.371		89	70-130			

8082 Polychlorinated Biphenyls (PCB)

Batch CD10519 - 3540

Blank

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0215		mg/kg wet	0.02500		86	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0216		mg/kg wet	0.02500		87	30-150			
Surrogate: Tetrachloro-m-xylene	0.0216		mg/kg wet	0.02500		86	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0224		mg/kg wet	0.02500		90	30-150			

LCS

Aroclor 1016	0.445	0.0500	mg/kg wet	0.5000		89	40-140			
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CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD10519 - 3540										
Aroclor 1260	0.418	0.0500	mg/kg wet	0.5000		84	40-140			
Surrogate: Decachlorobiphenyl	0.0214		mg/kg wet	0.02500		86	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0220		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0213		mg/kg wet	0.02500		85	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0216		mg/kg wet	0.02500		87	30-150			
LCS Dup										
Aroclor 1016	0.457	0.0500	mg/kg wet	0.5000		91	40-140	3	50	
Aroclor 1260	0.418	0.0500	mg/kg wet	0.5000		84	40-140	0.01	50	
Surrogate: Decachlorobiphenyl	0.0228		mg/kg wet	0.02500		91	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0220		mg/kg wet	0.02500		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0226		mg/kg wet	0.02500		90	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0230		mg/kg wet	0.02500		92	30-150			
Matrix Spike Source: 1104021-03										
Aroclor 1016	0.529	0.0538	mg/kg dry	0.5376	ND	98	40-140			
Aroclor 1260	0.503	0.0538	mg/kg dry	0.5376	ND	94	40-140			
Surrogate: Decachlorobiphenyl	0.0354		mg/kg dry	0.02688		132	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0299		mg/kg dry	0.02688		111	30-150			
Surrogate: Tetrachloro-m-xylene	0.0317		mg/kg dry	0.02688		118	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0320		mg/kg dry	0.02688		119	30-150			
Matrix Spike Dup Source: 1104021-03										
Aroclor 1016	0.514	0.0538	mg/kg dry	0.5376	ND	96	40-140	3	50	
Aroclor 1260	0.476	0.0538	mg/kg dry	0.5376	ND	88	40-140	6	50	
Surrogate: Decachlorobiphenyl	0.0263		mg/kg dry	0.02688		98	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0245		mg/kg dry	0.02688		91	30-150			
Surrogate: Tetrachloro-m-xylene	0.0270		mg/kg dry	0.02688		100	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0271		mg/kg dry	0.02688		101	30-150			
Batch CD10520 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0228		mg/kg wet	0.02500		91	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0223		mg/kg wet	0.02500		89	30-150			
Surrogate: Tetrachloro-m-xylene	0.0229		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0236		mg/kg wet	0.02500		94	30-150			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD10520 - 3540										
LCS										
Aroclor 1016	0.493	0.0500	mg/kg wet	0.5000		99	40-140			
Aroclor 1260	0.454	0.0500	mg/kg wet	0.5000		91	40-140			
Surrogate: Decachlorobiphenyl	0.0244		mg/kg wet	0.02500		97	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0239		mg/kg wet	0.02500		95	30-150			
Surrogate: Tetrachloro-m-xylene	0.0249		mg/kg wet	0.02500		100	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0251		mg/kg wet	0.02500		101	30-150			
LCS Dup										
Aroclor 1016	0.492	0.0500	mg/kg wet	0.5000		98	40-140	0.2	50	
Aroclor 1260	0.458	0.0500	mg/kg wet	0.5000		92	40-140	1	50	
Surrogate: Decachlorobiphenyl	0.0245		mg/kg wet	0.02500		98	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0241		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0236		mg/kg wet	0.02500		94	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0237		mg/kg wet	0.02500		95	30-150			
Matrix Spike Source: 1104021-22										
Aroclor 1016	0.483	0.0519	mg/kg dry	0.5185	ND	93	40-140			
Aroclor 1260	0.442	0.0519	mg/kg dry	0.5185	ND	85	40-140			
Surrogate: Decachlorobiphenyl	0.0232		mg/kg dry	0.02593		89	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0229		mg/kg dry	0.02593		88	30-150			
Surrogate: Tetrachloro-m-xylene	0.0235		mg/kg dry	0.02593		91	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0239		mg/kg dry	0.02593		92	30-150			
Matrix Spike Dup Source: 1104021-22										
Aroclor 1016	0.499	0.0521	mg/kg dry	0.5211	ND	96	40-140	3	50	
Aroclor 1260	0.458	0.0521	mg/kg dry	0.5211	ND	88	40-140	4	50	
Surrogate: Decachlorobiphenyl	0.0239		mg/kg dry	0.02606		92	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0238		mg/kg dry	0.02606		91	30-150			
Surrogate: Tetrachloro-m-xylene	0.0237		mg/kg dry	0.02606		91	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0239		mg/kg dry	0.02606		92	30-150			

8100M Total Petroleum Hydrocarbons

Batch CD10414 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet
Docosane (C22)	ND	0.2	mg/kg wet
Dodecane (C12)	ND	0.2	mg/kg wet
Eicosane (C20)	ND	0.2	mg/kg wet
Hexacosane (C26)	ND	0.2	mg/kg wet
Hexadecane (C16)	ND	0.2	mg/kg wet
Nonadecane (C19)	ND	0.2	mg/kg wet
Nonane (C9)	ND	0.2	mg/kg wet
Octacosane (C28)	ND	0.2	mg/kg wet

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CD10414 - 3546

Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	5.07		mg/kg wet	5.000		101	40-140			
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LCS

Decane (C10)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Dodecane (C12)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Eicosane (C20)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Hexacosane (C26)	2.8	0.2	mg/kg wet	2.500		114	40-140			
Hexadecane (C16)	2.7	0.2	mg/kg wet	2.500		109	40-140			
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		103	40-140			
Nonane (C9)	1.9	0.2	mg/kg wet	2.500		76	30-140			
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		113	40-140			
Octadecane (C18)	2.8	0.2	mg/kg wet	2.500		110	40-140			
Tetracosane (C24)	2.9	0.2	mg/kg wet	2.500		114	40-140			
Tetradecane (C14)	2.7	0.2	mg/kg wet	2.500		107	40-140			
Total Petroleum Hydrocarbons	38.8	37.5	mg/kg wet	35.00		111	40-140			
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140			

Surrogate: O-Terphenyl	5.47		mg/kg wet	5.000		109	40-140			
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LCS Dup

Decane (C10)	2.4	0.2	mg/kg wet	2.500		95	40-140	3	50	
Docosane (C22)	2.9	0.2	mg/kg wet	2.500		114	40-140	0.01	50	
Dodecane (C12)	2.8	0.2	mg/kg wet	2.500		112	40-140	5	50	
Eicosane (C20)	2.9	0.2	mg/kg wet	2.500		115	40-140	1	50	
Hexacosane (C26)	2.8	0.2	mg/kg wet	2.500		114	40-140	0.05	50	
Hexadecane (C16)	2.8	0.2	mg/kg wet	2.500		114	40-140	4	50	
Nonadecane (C19)	2.6	0.2	mg/kg wet	2.500		105	40-140	2	50	
Nonane (C9)	2.0	0.2	mg/kg wet	2.500		79	30-140	3	50	
Octacosane (C28)	2.8	0.2	mg/kg wet	2.500		113	40-140	0.2	50	
Octadecane (C18)	2.9	0.2	mg/kg wet	2.500		114	40-140	3	50	
Tetracosane (C24)	2.9	0.2	mg/kg wet	2.500		114	40-140	0.3	50	
Tetradecane (C14)	2.8	0.2	mg/kg wet	2.500		112	40-140	5	50	
Total Petroleum Hydrocarbons	39.4	37.5	mg/kg wet	35.00		112	40-140	2	50	
Triacontane (C30)	2.8	0.2	mg/kg wet	2.500		111	40-140	0.3	50	

Surrogate: O-Terphenyl	5.52		mg/kg wet	5.000		110	40-140			
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8270C Polynuclear Aromatic Hydrocarbons

Batch CD10415 - 3546

Blank



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270C Polynuclear Aromatic Hydrocarbons

Batch CD10415 - 3546

2-Methylnaphthalene	ND	0.333	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	2.31		mg/kg wet	3.333		69	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.54		mg/kg wet	3.333		76	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.24		mg/kg wet	3.333		67	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	3.51		mg/kg wet	3.333		105	30-130			

LCS

2-Methylnaphthalene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Acenaphthene	3.44	0.333	mg/kg wet	3.333		103	40-140			
Acenaphthylene	2.85	0.333	mg/kg wet	3.333		85	40-140			
Anthracene	4.15	0.333	mg/kg wet	3.333		124	40-140			
Benzo(a)anthracene	4.09	0.333	mg/kg wet	3.333		123	40-140			
Benzo(a)pyrene	4.11	0.167	mg/kg wet	3.333		123	40-140			
Benzo(b)fluoranthene	3.87	0.333	mg/kg wet	3.333		116	40-140			
Benzo(g,h,i)perylene	4.33	0.333	mg/kg wet	3.333		130	40-140			
Benzo(k)fluoranthene	4.09	0.333	mg/kg wet	3.333		123	40-140			
Chrysene	4.23	0.167	mg/kg wet	3.333		127	40-140			
Dibenzo(a,h)Anthracene	3.84	0.167	mg/kg wet	3.333		115	40-140			
Fluoranthene	3.54	0.333	mg/kg wet	3.333		106	40-140			
Fluorene	3.65	0.333	mg/kg wet	3.333		110	40-140			
Indeno(1,2,3-cd)Pyrene	3.93	0.333	mg/kg wet	3.333		118	40-140			
Naphthalene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Phenanthrene	4.11	0.333	mg/kg wet	3.333		123	40-140			
Pyrene	4.25	0.333	mg/kg wet	3.333		128	40-140			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	2.41		mg/kg wet	3.333		72	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.54		mg/kg wet	3.333		76	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.30		mg/kg wet	3.333		69	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	3.13		mg/kg wet	3.333		94	30-130			

LCS Dup

2-Methylnaphthalene	2.51	0.333	mg/kg wet	3.333		75	40-140	9	30	
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CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Polynuclear Aromatic Hydrocarbons										
Batch CD10415 - 3546										
Acenaphthene	3.24	0.333	mg/kg wet	3.333		97	40-140	6	30	
Acenaphthylene	2.66	0.333	mg/kg wet	3.333		80	40-140	7	30	
Anthracene	3.99	0.333	mg/kg wet	3.333		120	40-140	4	30	
Benzo(a)anthracene	3.95	0.333	mg/kg wet	3.333		119	40-140	4	30	
Benzo(a)pyrene	3.94	0.167	mg/kg wet	3.333		118	40-140	4	30	
Benzo(b)fluoranthene	3.78	0.333	mg/kg wet	3.333		113	40-140	3	30	
Benzo(g,h,i)perylene	3.88	0.333	mg/kg wet	3.333		116	40-140	11	30	
Benzo(k)fluoranthene	3.90	0.333	mg/kg wet	3.333		117	40-140	5	30	
Chrysene	3.97	0.167	mg/kg wet	3.333		119	40-140	6	30	
Dibenzo(a,h)Anthracene	3.61	0.167	mg/kg wet	3.333		108	40-140	6	30	
Fluoranthene	3.41	0.333	mg/kg wet	3.333		102	40-140	4	30	
Fluorene	3.62	0.333	mg/kg wet	3.333		108	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	3.66	0.333	mg/kg wet	3.333		110	40-140	7	30	
Naphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140	10	30	
Phenanthrene	4.05	0.333	mg/kg wet	3.333		122	40-140	1	30	
Pyrene	3.97	0.333	mg/kg wet	3.333		119	40-140	7	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.14		mg/kg wet	3.333		64	30-130			
Surrogate: 2-Fluorobiphenyl	2.33		mg/kg wet	3.333		70	30-130			
Surrogate: Nitrobenzene-d5	2.10		mg/kg wet	3.333		63	30-130			
Surrogate: p-Terphenyl-d14	2.98		mg/kg wet	3.333		89	30-130			

Classical Chemistry

Batch CD10707 - TCN Prep										
Blank										
Total Cyanide	ND	1.00	mg/kg wet							
LCS										
Total Cyanide	5.02	1.00	mg/kg wet	5.015		100	90-110			
LCS										
Total Cyanide	20.2	1.00	mg/kg wet	20.06		101	90-110			
LCS Dup										
Total Cyanide	19.8	1.00	mg/kg wet	20.06		99	90-110	2	20	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

Notes and Definitions

- U Analyte included in the analysis, but not detected
- SD Surrogate recovery(ies) diluted below the MRL (SD).
- Q Calibration required quadratic regression (Q).
- P Percent difference between primary and confirmation results exceeds 40% (P).
- M+ Matrix Spike recovery is above upper control limit (M+).
- M- Matrix Spike recovery is below lower control limit (M-).
- IM Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).
- D Diluted.
- C+ Continuing Calibration recovery is above upper control limit (C+).
- B+ Blank Spike recovery is above upper 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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104021

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>



CERTIFICATE OF ANALYSIS

ESS Laboratory
Attn: Ms. Liz Ouk
185 Frances Avenue
Cranston, RI 02910-2211

Date Received: 4/5/11
Date Reported: 4/7/11
P.O. #: 1104021
Work Order #: 1104-06212

DESCRIPTION: SIX SOIL SAMPLES

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.

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:

Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

ESS Laboratory

Date Received: 4/5/11

Work Order #: 1104-06212

SIX SOIL SAMPLES

Sample # 001

SAMPLE DESCRIPTION: 1104021-03**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 4/05/2011 @ 11:05

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/7/11	SUB

Sample # 002

SAMPLE DESCRIPTION: 1104021-08**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 4/05/2011 @ 11:36

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/7/11	SUB

Sample # 003

SAMPLE DESCRIPTION: 1104021-10**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 4/05/2011 @ 12:35

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/7/11	SUB

Sample # 004

SAMPLE DESCRIPTION: 1104021-15**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 4/05/2011 @ 13:13

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/7/11	SUB

Sample # 005

SAMPLE DESCRIPTION: 1104021-18**SAMPLE TYPE:** GRAB**SAMPLE DATE/TIME:** 4/05/2011 @ 13:40

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/7/11	SUB

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

ESS Laboratory

Date Received: 4/5/11

Work Order #: 1104-06212

SIX SOIL SAMPLES

Sample # 006

SAMPLE DESCRIPTION: 1104021-22

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 4/05/2011 @ 14:07

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TOC	See Attached		%	EPA 415.1	4/7/11	SUB

Sample Analysis

Work Order 11-0464

<u>Sample Description</u>	<u>Source</u>	<u>Taken/Time</u>	<u>Received</u>		
27350 1104-06212-001	R.I.Analytical Laboratories,Inc.	4/5/11	4/7/11		
<u>Parameter</u>	<u>Results</u>	<u>MDL</u>	<u>Method</u>	<u>Analyzed/Time</u>	<u>Tech</u>
Total Organic Carbon	2,350 ppm	100.00	SW 846 9060	04/07/11	sjr
<u>Sample Description</u>	<u>Source</u>	<u>Taken/Time</u>	<u>Received</u>		
27351 1104-06212-002	R.I.Analytical Laboratories,Inc.	4/5/11	4/7/11		
<u>Parameter</u>	<u>Results</u>	<u>MDL</u>	<u>Method</u>	<u>Analyzed/Time</u>	<u>Tech</u>
Total Organic Carbon	4,940 ppm	100.00	SW 846 9060	04/07/11	sjr
<u>Sample Description</u>	<u>Source</u>	<u>Taken/Time</u>	<u>Received</u>		
27352 1104-06212-003	R.I.Analytical Laboratories,Inc.	4/5/11	4/7/11		
<u>Parameter</u>	<u>Results</u>	<u>MDL</u>	<u>Method</u>	<u>Analyzed/Time</u>	<u>Tech</u>
Total Organic Carbon	2,530 ppm	100.00	SW 846 9060	04/07/11	sjr
<u>Sample Description</u>	<u>Source</u>	<u>Taken/Time</u>	<u>Received</u>		
27353 1104-06212-004	R.I.Analytical Laboratories,Inc.	4/5/11	4/7/11		
<u>Parameter</u>	<u>Results</u>	<u>MDL</u>	<u>Method</u>	<u>Analyzed/Time</u>	<u>Tech</u>
Total Organic Carbon	12,700 ppm	100.00	SW 846 9060	04/07/11	sjr
<u>Sample Description</u>	<u>Source</u>	<u>Taken/Time</u>	<u>Received</u>		
27354 1104-06212-005	R.I.Analytical Laboratories,Inc.	4/5/11	4/7/11		
<u>Parameter</u>	<u>Results</u>	<u>MDL</u>	<u>Method</u>	<u>Analyzed/Time</u>	<u>Tech</u>
Total Organic Carbon	3,210 ppm	100.00	SW 846 9060	04/07/11	sjr
<u>Sample Description</u>	<u>Source</u>	<u>Taken/Time</u>	<u>Received</u>		
27355 1104-06212-006	R.I.Analytical Laboratories,Inc.	4/5/11	4/7/11		
<u>Parameter</u>	<u>Results</u>	<u>MDL</u>	<u>Method</u>	<u>Analyzed/Time</u>	<u>Tech</u>
Total Organic Carbon	694 ppm	100.00	SW 846 9060	04/07/11	sjr

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental Inc
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 11040021
Date Project Due: 4/7/11
Days For Project: 2 Day

Items to be checked upon receipt:

- | | | | |
|--|-------------------------------|--|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> N/A |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> * Yes |
| <u>Cooler Temp: 5.2</u> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <u>Iced With: Icepacks</u> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: <u>-03 & -08 & -10 & -15 & -18 & -22</u> | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: <u>Premier</u> | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: <u>TOC</u> | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: <u>48hr</u> | |

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	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP
3	Yes	2 oz Soil Jar	1	NP
3	Yes	40 ml - VOA	1	MeOH
3	Yes	8 oz Soil Jar	2	NP
4	Yes	8 oz Soil Jar	1	NP
5	Yes	8 oz Soil Jar	1	NP
6	Yes	8 oz Soil Jar	1	NP
7	Yes	8 oz Soil Jar	1	NP
8	Yes	2 oz Soil Jar	1	NP
8	Yes	40 ml - VOA	1	MeOH
8	Yes	8 oz Soil Jar	2	NP
9	Yes	8 oz Soil Jar	1	NP
10	Yes	2 oz Soil Jar	1	NP
10	Yes	40 ml - VOA	1	MeOH
10	Yes	8 oz Soil Jar	2	NP
11	Yes	8 oz Soil Jar	1	NP
12	Yes	8 oz Soil Jar	1	NP
13	Yes	8 oz Soil Jar	1	NP
14	Yes	8 oz Soil Jar	1	NP
15	Yes	2 oz Soil Jar	1	NP
15	Yes	40 ml - VOA	1	MeOH
15	Yes	8 oz Soil Jar	2	NP
16	Yes	8 oz Soil Jar	1	NP
17	Yes	8 oz Soil Jar	1	NP

Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental Inc

ENS Project ID: 11040021

18	Yes	2 oz Soil Jar	1	NP
18	Yes	40 ml - VOA	1	MeOH
18	Yes	8 oz Soil Jar	2	NP
19	Yes	8 oz Soil Jar	1	NP
20	Yes	8 oz Soil Jar	1	NP
21	Yes	8 oz Soil Jar	1	NP
22	Yes	2 oz Soil Jar	1	NP
22	Yes	40 ml - VOA	1	MeOH
22	Yes	8 oz Soil Jar	2	NP
23	Yes	8 oz Soil Jar	1	NP
24	Yes	8 oz Soil Jar	1	NP
25	Yes	8 oz Soil Jar	1	NP
26	Yes	8 oz Soil Jar	1	NP
27	Yes	8 oz Soil Jar	1	NP
28	Yes	8 oz Soil Jar	1	NP
29	Yes	8 oz Soil Jar	1	NP
30	Yes	8 oz Soil Jar	1	NP
31	Yes	40 ml - VOA	1	MeOH

Completed By: mk

Date/Time: 4/5/11

Reviewed By: KAB

Date/Time: 4/5/11

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: Fast
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NY ME Other _____
 Is this project for any of the following:
 MA-MCTP _____ Navy _____ USACE _____ Other _____
 Reporting Limits: _____
 Electronic Deliverable: Yes _____ No _____
 Format: Excel _____ Access _____ PDF _____ Other _____

ESS LAB PROJECT ID: 1104021

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				
								PCBs (total)	Metals (Pb, Cd, Cr)	TPH	VOG	PAHs	TOC	Metals (Ar, Pb, Sn)	(Hold / Freeze)	
01	4-5-11	1037	X	S	GRS-4	0-3"	1	X	X	X	X	X	X	X	(Hold / Freeze)	
02		1040	X	S	GRS-4	9-12"	1	X	X	X	X	X	X	X	X	
03		1100	X	S	GRS-5	0-3"	1	X	X	X	X	X	X	X	X	
04		1103	X	S	GRS-5	9-12"	1	X	X	X	X	X	X	X	X	
05		1105	X	S	GRS-5	1'	4	X	X	X	X	X	X	X	X	
06		1111	X	S	GRS-6	0-3"	1	X	X	X	X	X	X	X	X	
		1113	X	S	GRS-6	9-12"	1	X	X	X	X	X	X	X	X	
		1121	X	S	GRS-7	0-3"	1	X	X	X	X	X	X	X	X	
		1123	X	S	GRS-7	9-12"	1	X	X	X	X	X	X	X	X	
		1128	X	S	GRS-8	0-3"	1	X	X	X	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

Cooler Present: Yes No Internal Use Only: _____

Seals Intact: Yes No NA: [] Pickup [] Technicians _____

Cooler Temp: 5.2

Comments: Metals (Pb, Cd, Cr - Total and TCLP)

Relinquished by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<u>[Signature]</u>	4-5-11 11447	<u>[Signature]</u>	4-5-11 11447	<u>[Signature]</u>	4-5-11 1509
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	

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

Sampled by: WF/EMB

CHAIN OF CUSTODY

ESS Laboratory

Division of Thielsch Engineering, Inc.
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 Tel. (401) 461-7181 Fax (401) 461-4486
 www.esslaboratory.com

Turn Time: Standard Other _____
 If faster than 5 days, prior approval by laboratory is required # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following:
 Navy USACE Other _____
 MA-MCP _____

Reporting Limits _____
 Electronic Deliverable Yes ___ No ___
 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								
										PCBs (Total)	Metals (Pb, Cd, Cr)	TPH	VOCs	PAHs	TOC	Metals (Ar, Pb, Cr)	(Holds/Freeze)	
1	4-5-11	1348	X	S	GRS-16	9-12"		1	X	X	X	X	X	X	X	X	X	X
20		1357	X	S	GRS-17	0-3"		1	X	X	X	X	X	X	X	X	X	X
21		1359	X	S	GRS-17	9-12"		1	X	X	X	X	X	X	X	X	X	X
		1403	X	S	GRS-18	0-3"		1	X	X	X	X	X	X	X	X	X	X
		1404	X	S	GRS-18	9-12"		1	X	X	X	X	X	X	X	X	X	X
22		1407	X	S	GRS-18	1'		4	X	X	X	X	X	X	X	X	X	X
23		1418	X	S	GRS-19	0-3"		1	X	X	X	X	X	X	X	X	X	X
		1430	X	S	GRS-19	9-12"		1	X	X	X	X	X	X	X	X	X	X
24		0910	X	C	CS-1			1	X									
25		0915	X	C	CS-2			1	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 ___ Internal Use Only
 Seals Intact ___ Yes ___ No NA: ___ [] Pickup
 Cooler Temp: 52

Preservation Code 1- NP, 2- HCl, 3- H₂SO₄, 4- HNO₃, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____
 Sampled by: WF/EnaB
 Comments: Metals (Pb, Cd, Cr - Total and TELP) C = Concrete

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 4-5-11 1447	Received by: (Signature) <i>[Signature]</i>	Date/Time 4-5-11 1509
Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 4-5-11 1447	Received by: (Signature) <i>[Signature]</i>	Date/Time 4-5-11 1509

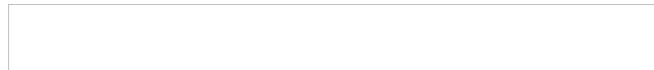


CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.30)
ESS Laboratory Work Order Number: 1104296

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

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: 1104296

SAMPLE RECEIPT

The following samples were received on April 26, 2011 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.

These samples were originally received on hold on April 21, 2011.

Lab Number	SampleName	Matrix	Analysis
1104296-01	GRSP-11 21-24in	Soil	8082
1104296-02	GRSP-13 21-24in	Soil	8082
1104296-03	RW-3 3in	Soil	8082



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104296

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: GRSP-11 21-24in
Date Sampled: 04/21/11 09:08
Percent Solids: 93
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1104296
ESS Laboratory Sample ID: 1104296-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 4/26/11 19:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1221	ND (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1232	ND (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1242	ND (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1248	1.93 (0.273)	10	5	04/28/11 11:02		CD12623
Aroclor 1254	ND (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1260	0.120 (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1262	ND (0.0546)	10	1	04/27/11 17:26		CD12623
Aroclor 1268	ND (0.0546)	10	1	04/27/11 17:26		CD12623

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	84 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	79 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	80 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: GRSP-13 21-24in
 Date Sampled: 04/21/11 09:25
 Percent Solids: 92
 Initial Volume: 19.6
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104296
 ESS Laboratory Sample ID: 1104296-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/26/11 19:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1221	ND (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1232	ND (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1242	ND (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1248	2.57 (0.277)	10	5	04/28/11 11:21		CD12623
Aroclor 1254	ND (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1260	0.199 (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1262	ND (0.0555)	10	1	04/27/11 17:45		CD12623
Aroclor 1268	ND (0.0555)	10	1	04/27/11 17:45		CD12623

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	88 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	84 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	85 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	84 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Tidewater GH
 Client Sample ID: RW-3 3in
 Date Sampled: 04/21/11 11:15
 Percent Solids: 97
 Initial Volume: 10
 Final Volume: 10
 Extraction Method: 3540

ESS Laboratory Work Order: 1104296
 ESS Laboratory Sample ID: 1104296-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: ML
 Prepared: 4/26/11 19:00

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

RI - RES DEC

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1221	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1232	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1242	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1248	0.273 (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1254	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1260	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1262	ND (0.103)	10	1	04/27/11 18:04		CD12623
Aroclor 1268	ND (0.103)	10	1	04/27/11 18:04		CD12623

	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>
Surrogate: Decachlorobiphenyl	95 %		30-150
Surrogate: Decachlorobiphenyl [2C]	90 %		30-150
Surrogate: Tetrachloro-m-xylene	81 %		30-150
Surrogate: Tetrachloro-m-xylene [2C]	84 %		30-150



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104296

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CD12623 - 3540										
Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0249		mg/kg wet	0.02500		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0240		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene	0.0230		mg/kg wet	0.02500		92	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0245		mg/kg wet	0.02500		98	30-150			
LCS										
Aroclor 1016	0.485	0.0500	mg/kg wet	0.5000		97	40-140			
Aroclor 1260	0.495	0.0500	mg/kg wet	0.5000		99	40-140			
Surrogate: Decachlorobiphenyl	0.0260		mg/kg wet	0.02500		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0252		mg/kg wet	0.02500		101	30-150			
Surrogate: Tetrachloro-m-xylene	0.0251		mg/kg wet	0.02500		100	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0254		mg/kg wet	0.02500		101	30-150			
LCS Dup										
Aroclor 1016	0.477	0.0500	mg/kg wet	0.5000		95	40-140	2	50	
Aroclor 1260	0.483	0.0500	mg/kg wet	0.5000		97	40-140	2	50	
Surrogate: Decachlorobiphenyl	0.0263		mg/kg wet	0.02500		105	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0247		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene	0.0240		mg/kg wet	0.02500		96	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0244		mg/kg wet	0.02500		97	30-150			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104296

Notes and Definitions

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



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1104296

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/out_state.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) Potable and 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

South Carolina Volatile Organic Compounds in Potable Water: 78003

New Jersey Potable (VOA) and Non Potable Water (RCRA), Solids and Hazardous Waste: RI002

<http://www.nj.gov/dep/oqa/certlabs.htm>

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>

Elizabeth Ouk

From: Margaret Kilpatrick [Margaret.Kilpatrick@gza.com]
Sent: Tuesday, April 26, 2011 9:47 AM
To: Elizabeth Ouk
Cc: Erik Beloff
Subject: WO 1104254
Importance: High
Follow Up Flag: Follow up
Flag Status: Completed
Attachments: Document.pdf

Hi Liz

Can you please release the indicated samples from WO 1104254? If possible, please RUSH the samples with 48 hr TAT.

thanks

Meg Kilpatrick, P.E.
GZA GeoEnvironmental, Inc.
Senior Project Manager
530 Broadway
Providence, Rhode Island 02909
Phone: 401.421.4140
Fax: 401.751.8613
Cell: 401.524.0576

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For information about GZA GeoEnvironmental, Inc. and its services, please visit our website at www.gza.com.

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

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Turn Time: Standard _____ Other 45hr
 If faster than 5 days, prior approval by laboratory is required.
 State where samples were collected from:
 MA RI CT NH NJ NY ME
 MA RI CI NH NJ NY ME
 Is this project for any of the following: USACE Other
 MA-MCP Navy _____

ESS LAB PROJECT ID: **1104296**
 Reporting Limits: _____
 Electronic Deliverable: Yes No _____
 Format: Excel Access _____ PDF Other _____

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Identification (20 Char. or less)	Pres Code	Number of Containers		Type of Containers		Write Required Analysis
								Number of Containers	Type of Containers	Number of Containers	Type of Containers	
01	4-21-11	0955	X		S	GRSP-1 33-36"		1	0			
		1000	X		S	GRSP-1 45-48"		1	0			PCB5 (802A)
		0905	X		S	GRSP-11 9-12"		1	0			Hold/Freeze
		0908	X		S	GRSP-11 21-24"		1	0			
		0912	X		S	GRSP-11 33-36"		1	0			
		0939	X		S	GRSP-12 9-12"		1	0			
		0942	X		S	GRSP-12 21-24"		1	0			
		0946	X		S	GRSP-12 33-36"		1	0			
		0922	X		S	GRSP-13 9-12"		1	0			
02		0925	X		S	GRSP-13 21-24"		1	0			

Container Type: P-Poly G-Class 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
 Cooler Temp: 2.6 [] Technicians _____

Preservation Code: 1- NP; 2- HCl; 3- H₂SO₄; 4- HNO₃; 5- NaOH; 6- MeOH; 7- Asorbic Acid; 8- ZnAct; 9- _____
 Sampled by: EAB/WF
 Comments: "C" = Concrete

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
<u>[Signature]</u>	4-21-11 1213	<u>[Signature]</u>	4-21-11 1213
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

CHAIN OF CUSTODY

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

Turn Time _____ Standard _____ Other _____
 If faster than 5 days, prior approval by laboratory is required. # _____
 State where samples were collected from:
 MA RI CT NH NJ NY ME Other _____
 Is this project for any of the following: USACE Other _____
 MA-MCP Navy

Reporting Limits
 ESS LAB PROJECT ID
1104296
 Yes No
 Electronic Deliverable
 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	Circle and/or Write Required Analysis
	4-21-11	0931	X		S	GRSP-13		1	G	8081 EPH EPH EPH 8082 PCBs PCBs PCBs 8087 PCBs PCBs PCBs 8270 PAH 8270 SVOA RCR48 PPI3 TAL23 TCLP-RCR48 NBC7 MCP-METALS (13) MCP-METALS (13) w/Hg
		1110			C	RW-3 2"		1	G	X
D3		1115			C	RW-3 3"		1	G	X
		1055			C	RW-3A 1"		1	G	X
		1100			C	RW-3A 2"		1	G	X
		1033			C	RW-3B 1"		1	G	X
		1037			C	RW-3B 2"		1	G	X
		1125			C	RW-3C 1"		1	G	X
		1130			C	RW-3C 2"		1	G	X
		1042			C	RW-3D 1"		1	G	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 Internal Use Only Yes No NA: Pickup
 Seals Intact Yes No
 Cooler Temp: 2-6
 Preservation Code 1-NB, 2-HCl, 3-H₂SO₄, 4-HNO₃, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-
 Sampled by: _____
 Comments: _____

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 4-21-11 1213	Received by: (Signature) <i>[Signature]</i>	Date/Time 4/21/11 1213
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

APPENDIX D

APRIL 2011 AIR QUALITY MONITORING PLAN

**NATIONAL GRID
AIR QUALITY MONITORING PLAN
PLANNED SHORT DURATION PROJECTS – FORMER TIDEWATER MGP**

INTRODUCTION

GZA GeoEnvironmental, Inc. (GZA), on behalf of The Narragansett Electric Company d/b/a National Grid (National Grid), has prepared this Air Quality Monitoring Plan (AQMP) for use on certain planned projects at the Tidewater Site located in Pawtucket, Rhode Island. Projects covered by this plan include: (1) the *Short Term Response Action Plan* associated with removal of a former process pipe (STRAP submitted to RIDEM in October 2010 and subsequently revised in January 2011); (2) the planned gas regulator station upgrade work; and short duration site investigation activities (test pits, borings). This AQMP is designed to provide for a consistent approach to air quality monitoring for these relatively short-duration remediation, construction, and/or maintenance activities.

While air monitoring requirements for more intrusive and longer duration projects may follow the same general procedures described herein, this AQMP is not intended to cover these more significant and intrusive efforts. Specific air monitoring requirements for these types of efforts will be evaluated on a case by case basis by National Grid as part of the planning, design, permitting and RIDEM-approval process. It is our intent to modify this air monitoring approach for future efforts at the Tidewater Site based on data collected during the activities listed above.

This AQMP for the Tidewater site was designed to achieve the following primary objectives:

- Estimate potential vapor emissions for these short duration efforts in accordance with United States Environmental Protection Agency (EPA) methodology and assess the applicability of RIDEM Air Pollution Control (APC) Regulation No. 9 on a case by case basis;
- Minimize exposure risks to both on-site workers and the surrounding community associated with airborne constituents during implementation of short term remediation, investigation, construction, and/or maintenance activities at the Tidewater site;
- Provide an early warning of site conditions allowing oversight personnel to proactively manage potential air quality issues via implementation of engineered controls and/or adjustments to work practices/procedures¹; and

¹ Please note, anticipated engineered controls and work practices are not described in this AQMP. These procedures are specific to each activity and will be described in the plans, workplans, STRAPs, etc. developed for each effort.

- Quantify air quality monitoring data and compare to applicable criteria to ensure compliance with this AQMP.

VAPOR EMISSION MODELING

Initial project planning activities for each of the short duration events currently anticipated at the Tidewater site will include an estimate of potential volatile air emissions for the proposed work using EPA methodology. Specifically, potential emissions from the proposed activities will be estimated and quantified using the general modeling approach and guidelines presented in the following published EPA guidance document:

- Eklund, et al. 1997. Air Emissions from the Treatment of Soils Contaminated with Petroleum Fuels and Other Substances. Prepared for U.S. Environmental Protection Agency Office of Air and Radiation and Office of Research and Development Washington, D.C. EPA-600/R-97-116. October.

An appropriate predictive air emission model will be developed based on these EPA guidelines for each effort. The results of the predictive modeling will be used to evaluate whether the activity has the potential to increase emissions by greater than the minimum quantity as specified in Appendix A of RIDEM APC Regulation No. 9 and whether a minor source permit is required. A summary of the predictive modeling and our evaluation of the results will be submitted to RIDEM prior to proceeding with on-site work.

AIR QUALITY MONITORING STRATEGY

The following monitoring program will be implemented for each of the short duration efforts anticipated at the Tidewater site regardless of the outcome of the above described predictive air modeling results². This air quality monitoring program has been designed to be protective by using a two tiered approach; real-time air monitoring, and time integrated sampling using US EPA approved sampling and analytical methods. The real time monitoring will involve the use of hand held instrumentation deployed upwind and directly downwind of the site work zone and at the nearest downwind location along the site property line. The first tier (real time monitoring) is designed to provide an early warning to site personnel of potential air quality issues and allow for the implementation of engineered controls and/or modifications to work practices. The second tier, time integrated, laboratory sampling, involves the deployment of stationary sampling equipment at the nearest property line directly downwind of the site work zone(s) and at an upwind perimeter location. This second tier is designed to assess and document perimeter air quality during these activities.

The means and methods associated with each tier of sampling are described in the last section of this plan.

² We understand that in instances where a Minor Source Permit is applicable, additional air monitoring requirements may be necessary.

SELECTION OF TARGET COMPOUNDS

The selection of target compounds for this monitoring plan is based on guidance presented in a document entitled “Health-based Guidelines for Air Management, Public Participation, and Risk Communication During the Excavation of Former Manufactured Gas Plants” prepared by Wisconsin Bureau of Environmental and Occupational Health, Department of Health and Family Services (DHFS) dated August 24, 2004. A copy of the Wisconsin Guideline document is included as Attachment A.

The target compounds selected for the real-time component of this air monitoring program include: Total Volatile Organic Compounds (TVOC) and respirable particulate matter (PM10). In addition, supplemental real-time monitoring will be conducted for benzene. Real time supplemental monitoring for naphthalene was also considered. However, since the instrument which is used to monitor naphthalene in real-time (zNose Model 4200/4300) is typically used as a screening tool and not a quantitative instrument for comparison to air quality standards, it is not considered appropriate for this application. Further, the zNose has a lower detection limit that is approximately ten times higher than the 24-hr RI Acceptable Ambient Level (AAL) for naphthalene, thus would be of limited value in quantifying ambient air quality. The time-integrated sampling and analyses described herein provides a more representative measure of air quality in comparison to the RIDEM AALs. As described further below, target compounds for the time integrated sampling component of this project will include benzene, toluene, ethylbenzene, xylenes, and naphthalene, which are a subset of the analytes contained within the USEPA Method TO-15 (VOCs).

ACTION LEVELS

This section presents the action levels for both tiers of sampling (real time and time integrated).

The following real-time monitoring action levels for the work zone perimeter and property line were selected for use on these shorter duration efforts. These action levels were adopted from Table 3 of the attached Wisconsin Guidance document. The determination of a work zone action level exceedance will be based on the difference between the upwind (background) sampling results and the downwind sampling results. The property line real time monitoring will be conducted at the nearest location downwind from the activity. In addition, real time monitoring will also be conducted at the property line adjacent to the nearest sensitive receptors west of the site, including the apartment complex, the International Charter School and the Francis J. Varieur School independent of wind direction.

Table 1 Action Levels – Real Time Monitoring

Compound	Work Zone Perimeter	Property Line
Total Volatile Organic Compounds (TVOC)	1.0 ppm	0.5 ppm
Respirable Particulate (PM10)	1,000 ug/m ³	150 ug/m ³
Benzene	NA	0.35 ppm

In the event these real time action levels are exceeded GZA will immediately identify the likely cause, implement appropriate engineering controls, and/or modify work practices. In addition, on any day when the real time monitoring exceed these action levels, time integrated samples from upwind and downwind property line locations will be sent to the laboratory for analysis (see below).

The following action levels were selected for use during the time integrated sample monitoring for benzene, toluene, ethylbenzene and xylenes (BTEX), and naphthalene. This compound list was developed based on the DHFS document and our experience at other MGP sites. The approach for selecting representative “sentinel” compounds, as presented in the DHFS document, is based on the fact that there are many different VOCs potentially present in MGP wastes and that the selected compounds should “be based on both the risk imparted by a compound’s prevalence and toxicity, as well as the analytical ability to detect these compounds”. The action levels were obtained from Table 4 of the Wisconsin Guidance document and are based on the DHFS recommended maximum 24-hour average concentration.

Table 2 Action Levels – Time Integrated Samples (Property Line)

Compound	Wisconsin Action Level (24 hour average)	RIDEM AAL (24 hour)	Proposed Action Levels (24 hour average)³
Benzene	10 ppb	6.2 ppb	6.2 ppb
Toluene	94 ppb	80 ppb ⁴	80 ppb
Ethylbenzene	230 ppb	692 ppb	230 ppb
Xylenes	23 ppb	692 ppb	23 ppb
Naphthalene	20 ppb	0.6 ppb ⁵	20 ppb

In the event time integrated perimeter sampling results indicate levels in excess of these action levels, the on-going activities will be shutdown and engineered controls and work practices will be re-evaluated in consultation with RIDEM prior to re-initiating on-site work. As indicated below, these time integrated sampling results will be available 24-48 hours after collection.

³ Action levels represent the lower of the DHFS and RIDEM AAL with the exception of naphthalene. DHFS action level for naphthalene is based on a subchronic exposure which is more appropriate for these shorter duration efforts than the AAL for naphthalene which is based on chronic exposure assumptions.

⁴ RIDEM does not have a 24-hour AAL for toluene. This value based on RIDEM annual AAL for toluene.

⁵ The listed 24 hour AAL for naphthalene is based on chronic exposure assumptions.

MEANS AND METHODS FOR REAL-TIME AND TIME INTEGRATED MONITORING

Real-Time Monitoring

The real time air monitoring is designed to measure site-related airborne constituents, namely volatile organic compounds (VOCs) and respirable particulate (PM10). Real-time methods for monitoring particle bound PAHs do not exist, thus particle levels will be used as a surrogate for PAHs. The equipment associated with the real time air monitoring are field photoionization detectors (PIDs) for TVOCs and continuous respirable particle monitors.

Volatile Organic Compound (VOC) Air Monitoring

During the activities described herein, the real-time air monitoring equipment will be maintained at the site to monitor VOC concentrations associated with the site remedial/maintenance activities. During these activities, a PID will provide continuous air quality measurements from sampling locations upwind and directly downwind of the work zone and the Site perimeter. Perimeter locations will be selected based on wind direction and the location of the nearest potential sensitive receptors. The real time air quality measurements will be compared to the action levels presented in Table 1 (after subtracting background concentrations) in order to assess the need for implementation of engineering controls and/or modifications to work practices. If the total VOC action level is exceeded, the contractor will be informed, potential sources of the exceedance will be investigated and, if appropriate, mitigation activities will be initiated. In addition, an exceedance of the TVOC Action Level downwind of the work zone will trigger the analysis of a time integrated sample from the site perimeter (see Time Integrated Monitoring discussion below).

Volatile organic substance concentrations will be measured utilizing a portable photoionization detector (Photovac 2020 PID) or equivalent. The PIDs measure volatile organic compounds by passing the air sample past an analytical detector and electronically measuring the resulting response. The PIDs are configured to respond to total organic compounds without any differentiation as to individual compound concentrations. The limit of detection is 10 parts per billion by volume (ppbv). The PID will be operated in accordance with manufacturers specifications.

Respirable Particulate Matter (RPM10) Perimeter Air Monitoring

As described above, real-time monitors for PAHs do not exist. Therefore, respirable dust will be measured as an indirect measure of ambient PAH levels.

Direct-reading real-time particulate meters (DustTrak) will be used to monitor for particulate (or dust). The measurement of dust levels is accomplished using infrared electromagnetic radiation to sense airborne particles. The dust meter will be configured to respond only to dust particles < 10 micron in diameter (PM10). The limit of detection is 1 ug/m³ (microgram per cubic meter). The DustTrak will be operated in accordance with manufacturers specifications.

Gas Chromatographs (benzene) Supplemental Monitoring

Real time benzene concentrations will be measured utilizing a portable field gas chromatograph (Photovac Voyager GC). The GC measures volatile organic compounds by passing an air sample through a series of analytical columns to separate individual compounds and then by an analytical detector, which electronically measures the resulting response and compares it to a known concentration response of each compound of interest. The GC will be calibrated to a known concentration of benzene each day prior to monitoring activities. The detection limit for benzene is 10 parts per billion (ppb). The GC will be operated in accordance with manufacturers specifications.

Time Integrated Monitoring

Time integrated air quality samples will be collected at the perimeter, at an upwind and a downwind location in order to document ambient levels of target VOCs presented in Table 2 of this plan using US EPA approved sampling and analytical methods. Samples will be collected daily during intrusive activities. Samples will be submitted for analysis if the results of the first tier, real time air quality monitoring (at either the work zone or the perimeter location) indicates an exceedance of the established action level presented in Table 1. In addition, regardless of the results of the real-time monitoring, at least one set of time integrated samples will be collected during each activity. Analyses will be performed by an accredited off-site analytical laboratory demonstrating proficiency for the specific methods stated in this section. The laboratory results will be available 24 to 48 hours after collection.

Volatile Organic Compounds

At a minimum, two VOC samples, one upwind and one downwind, will be collected during each day when intrusive activities are being performed. One additional sample will be used as a field blank and will be submitted along with the field samples to the laboratory. The sampling locations will be chosen based on actual and predicted wind conditions for the sampling day. VOC samples will be collected using SUMMA stainless steel canisters in conjunction with US EPA Method TO-15 GC/MS Full Scan, as presented in “The Compendium of Methods for the Determination of Toxic Organic Compounds in the Ambient Air”. The VOC samples will be analyzed for the compounds presented in Table 2 by an off-

site certified laboratory. The SUMMA canister method consists of the collection of a whole air sample into an evacuated stainless steel canister. The canister is passively filled with sample air via a mass flow controller which allows for uniform filling of the canister over the eight hour sampling period.

Documentation and Reporting

The real time field data and any time integrated sampling results will be maintained by GZA on-site. In addition, this air monitoring data will be presented in completion reports submitted to RIDEM for each effort.

Attachment: Health-based Guidelines for Air Management, Public Participation, and Risk Communication During the Excavation of Former Manufactured Gas Plants” prepared by Wisconsin Bureau of Environmental and Occupational Health, Department of Health and Family Services (DHFS) dated August 24, 2004

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