COMPLETION REPORT
PERFORMANCE-BASED PCB REMEDIAL ACTIVITIES-NATURAL GAS REGULATOR STATION AREA FORMER TIDEWATER FACILITY PAWTUCKET, RHODE ISLAND RIDEM CASE NO. 95-022

PREPARED FOR:
RIDEM
Providence, Rhode Island

ON BEHALF OF:
National Grid, USA
Waltham, Massachusetts

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

November 2011
File No. 43654.30

GZA
GeoEnvironmental, Inc.

Engineers and
Scientists

November 3, 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

RE: Completion Report
Performance-Based PCB Remedial Activities
Natural Gas Regulator Station Area
Former Tidewater Facility
200 Taft Street
Pawtucket, Rhode Island
RIDEM Case No. 95-022

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Dear Mr. Martella:

On behalf of the Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) hereby submits that attached *Completion Report* documenting polychlorinated biphenyl (PCB) remediation activities performed within the fenced natural gas regulator station area at the former Tidewater facility in Pawtucket, Rhode Island. These remediation activities were completed in accordance with the *Work Plan* dated August 9, 2011, prepared by GZA which was submitted to the Environmental Protection Agency (EPA) and the Rhode Island Department of Environmental Management (RIDEM). The completed work was performed consistent with the Performance Based Disposal provisions of the Toxic Substance Control Act (TSCA), 40 CFR Part 761.61(b).

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.

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

John P. Hartley
Consultant/Reviewer

James J. Clark, P.E.
Principal

MSK/JJC:tja

Attachment: Completion Report

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

TABLE OF CONTENTS

TABLES

TABLE OF CONTENTS (Cont')

FIGURES

APPENDICES

1.00 INTRODUCTION

On behalf of the Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental Inc. (GZA) has prepared this *Completion Report* documenting polychlorinated biphenyl (PCB) remediation activities performed within the fenced natural gas regulator station area at the former Tidewater facility in Pawtucket, Rhode Island. These remediation activities were completed consistent with the *Work Plan* dated August 9, 2011, prepared by GZA which was submitted to the Environmental Protection Agency (EPA) and the Rhode Island Department of Environmental Management (RIDEM). As described in the *Work Plan* and herein, this effort involved the removal and off-Site disposal of a limited volume of PCB-impacted soil and concrete. This work was performed consistent with the Performance Based Disposal provisions of the Toxic Substance Control Act (TSCA), 40 CFR Part 761.61(b). As described further herein, air quality monitoring consistent with a RIDEM-approved plan was performed during the remediation activities.

The Site, defined herein as the natural gas regulator station area, is located at the terminus of Tidewater Street. It contains a meter building, regulator building and control building, as well as exterior runs of gas piping and operation equipment. The regulator area is located in the southwestern part of a larger property owned by National Grid which was formerly operated as a Manufactured Gas Plant (MGP). The Site is bounded to the south by Merry Street and the former power plant, and an active switching and electrical station; also owned by National Grid. Residential properties are located to the west and northwest of the Site. The Site is secured with a locked 6-foot high chain-link fence. The ground surface of the regulator station is gravel covered. Access to the regulator station area is via a locked gate on Tidewater Street.

A Site *Locus Plan, Aerial Map and Site Plan* depicting the location of the active natural gas regulating station relative to the other property features and abutting property uses are provided as Figures 1, 2 and 3, respectively. Figures 4 and 5 present the location of soil and concrete characterization and confirmatory samples. An *Air Monitoring and SUMMA Canister Locations* plan presenting the configuration of air quality monitoring locations is included as Figure 6. Site Photographs are included in Appendix B.

This report is subject to the Limitations included as Appendix A and is subject to modification if subsequent information is established by GZA or any other party.

1.10 BACKGROUND

Facility upgrades at the active gas regulating station began in July 2011. The facility upgrades, which were approved by the Rhode Island Public Utility Commission (PUC), consisted of the relocation of an existing overhead 16-inch gas main to below ground, shallow excavation work within the fenced natural gas regulator station area to properly abandon existing facilities, general renovation of the buildings, and updating of 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 exceed the RIDEM Method 1 Industrial/Commercial Direct Exposure Criterion (I/C-DEC) for PCBs of 10 mg/kg, as specified in the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations, February 2004). Accordingly, a *Hazardous Material Release Notification Form* was submitted to RIDEM/Office of Compliance and Inspection on April 14, 2011. In addition, the detection of total PCBs at 3,178 mg/kg in the above-referenced soil sample suggests the presence of PCB Remediation Waste as defined in TSCA.

Further Site characterization was performed by GZA in April 2011 and documented in the August 2011 *Work Plan*. Sampling locations for soil and concrete are shown on the attached Figures 4 and 5, repectively. Analytical results of the characterization work are included in Tables 1A, 1B, 2A, and 3A. These data indicated that shallow PCB soil impacts originated from a leaking metal riser pipe/valve associated with the natural gas regulator station. This section of piping/valve has been removed and replaced as part of the ongoing facility upgrade project. Based on this characterization work, PCB soil impacts were anticipated to be limited to less than 3 feet below grade and localized to the immediate area of the riser pipe, with elevated PCB levels (greater than 1 mg/kg) confined to the immediate surrounding area of RB-E/Soil-01 and GRSP-1, including GRSP-2, GRSP-11 and GRSP-13. Concrete impacts are also expected to be limited to small portions of an adjacent concrete pad (northern section of approximately 3 feet by 5 feet) and retaining wall (immediately adjacent to RW-3).

2.00 CLEANUP ACTIONS AND CONFIRMATORY SAMPLING

As described in the August 2011 *Work Plan*, PCB-impacted soils in the immediate vicinity of the former pipe/valve assembly, impacted concrete on the adjacent retaining wall, and a portion of an impacted concrete pad were remediated. All impacted soil and concrete exhibiting PCB concentrations above 1 mg/kg were removed and disposed off-Site consistent with the requirements of 40 CFR 761.61(b). Following removal confirmatory soil and concrete samples were collected and analyzed consistent with the requirements of TSCA SubPart O. All collected confirmatory samples (both soil and concrete) were submitted to ESS Laboratories of Cranston, Rhode Island (ESS) for PCB analysis via EPA Method 8082A using a manual Soxhlet extraction per EPA Method 3540. Concrete was sampled consistent with *EPA Region I Draft Standard Operating Procedure for Sampling Concrete in the Field*. Figure 4 depicts the locations of confirmatory soil samples.

Concrete confirmatory samples of the foundation pad and retaining wall are depicted on Figure 5. Analytical summaries of confirmatory soil and concrete samples are provided in Tables 1C, 2B and 3B. Laboratory Certificates of Analysis are included in Appendix C.

2.10 PCB-IMPACTED SOIL REMOVAL

The PCB-impacted soils located in the immediate vicinity of the pipe/valve assembly exhibiting concentrations greater than 1 mg/kg were removed and containerized via a vactor rig for immediate off-Site disposal on August 22 2011 and August 26 2011 by Clean Harbors Environmental Services (CHES) of East Providence, Rhode Island. The limits of excavated soil exhibiting PCB concentrations in excess of 1 mg/kg are depicted on Figure 4. CHES utilized soil vacuum equipment and hand tools to remove the identified PCB-impacted soils which were limited to the immediate proximity of sample location GRSP-1. As indicated on Figure 4, excavation depths ranged from approximately 1.3 to 4.6 feet below grade. In certain areas, the initial confirmatory sampling results indicated that additional excavation was necessary to remove all soils exhibiting PCB impacts above 1 mg/kg.

Approximately 6 cubic yards of PCB-impacted soil was generated during the removal work. The excavated material was transported for off-Site disposal on August 26 to the Clean Harbors Grassy Mountain facility in Utah, consistent with the requirements of 40 CFR Part 761.61(b)(2). Disposal documentation is included in Appendix F.

The excavation area was backfilled with imported material to pre-existing grade by CHES. Photographs of the area are included in Appendix B. The imported material consisted of approximately 12 CY of 3/4-inch crushed stone. The material was obtained from the G. Lopes Construction facility in Taunton, Massachusetts.

2.20 PCB-IMPACTED CONCRETE REMOVAL

As described in the August 2011 *Work Plan*, two areas of PCB-impacted concrete were identified: (1) a portion of the concrete pad located in the immediate vicinity of the pipe/valve assembly; and (2) a portion of the adjacent concrete retaining wall. The remediation activities associated with each area are summarized below.

The area of the concrete pad exhibiting PCB concentrations greater than 1 mg/kg was removed by CHES and containerized via a vactor rig for off-Site disposal on August 24, 25 and 26, 2011. A small portion (an approximate 24 inch by 60 inch) of the concrete pad was removed by CHES on September 9, 2011 and containerized in one 55-gallon steel drum for disposal. The limits of the concrete pad exhibiting PCB concentrations in excess of 1 mg/kg are depicted on Figure 5. CHES utilized soil vacuum equipment, pneumatic equipment and hand tools to remove the identified PCB-impacted concrete which was limited to the immediate proximity of the observed surface staining. During the removal of the concrete pad, an enclosure consisting of polyethylene sheeting was constructed to control dust within the work area. During the work, the air from within the enclosure was removed and vented to either the vactor rig or a high volume shop vacuum. As depicted on Figure 5, the northern portion of the PCB-impacted pad was initially removed and

confirmatory samples were collected on August 24, 25 and 26, 2011. Based on the confirmatory sampling results, a further approximate 24 inch by 60 inch portion of the concrete slab was scarified to a depth of 1" below the original top of slab on September 9, 2011.

Two samples of soils from beneath the pad were collected and analyzed for PCBs (BCSCS-1 and 2). As indicated in Table 1C, PCBs were not detected in these soil samples.

On August 26 and September 19 the PCB-impacted concrete from the former slab was transported for off-Site disposal to the Clean Harbors Grassy Mountain facility in Utah, consistent with the requirements of 40 CFR Part 761.61(b)(2). Disposal documentation is included in Appendix F.

The removed/scarified portions of the concrete pad were reconstructed by Universal Construction Company of Johnston, Rhode Island on September 13 2011. Portions of the concrete pad will be utilized during the natural gas regulator renovation work. Photographs of the area are included in Appendix B.

The portion of the PCB-impacted retaining wall located in the immediate vicinity of the pipe/valve assembly exhibiting concentrations greater than 1 mg/kg was removed and containerized via a vactor rig for off-Site disposal on August 23 by CHES. The limits of the concrete retaining wall exhibiting PCB concentrations in excess of 1 mg/kg are depicted on Figure 5.

Similar to the pad removal work, CHES utilized soil vacuum equipment, pneumatic equipment and hand tools to remove the identified PCB-impacted concrete which were limited to the immediate proximity of the observed surface staining. During the removal of the retaining wall, an enclosure consisting of polyethylene sheeting was constructed to control dust within the work area. During the work, the air from within the enclosure was removed and vented to either the vactor rig or a high volume shop vacuum. Based on the characterization sample results, an approximate 17 inch by 24 inch area centered on sample RW-3 and extending to 12 inches below the ground surface was scarified to 3 inches below the existing face of the concrete retaining wall (refer to Figure 5). In addition, the below grade portion of the retaining wall face (approximately 24 inches by 24 inches) below the 3-inch deep removal area was subsequently scarified to a depth of 1-inch below the original concrete face surface following the soil excavation. Four confirmatory samples were collected and analyzed for PCBs. As indicated in Table 3B, no PCBs were detected.

This material was consolidated with the concrete material removed from the pad (refer to Section 3.20) and transported for off-Site disposal to the Clean Harbors Grassy Mountain facility in Utah, consistent with the requirements of 40 CFR Part 761.61(b)(2). Disposal documentation is included in Appendix F.

The scarified portions of the concrete retaining wall were reconstructed by Universal Construction Company on September 13 2011. Photographs of the area are included in Appendix B.

2.30 QA/QC SAMPLING AND ANALYTICAL RESULTS

Throughout the collection of confirmatory samples, GZA followed Standard QA/QC procedures. GZA's QA/QC program included the collection of one blind field-collected duplicate sample. Laboratory analytical results for the blind co-located field duplicate sample and their corresponding initial sample 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.

2.40 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. The data validation 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 were 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 C. 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.

3.00 AIR QUALITY MONITORING

Air quality monitoring was performed during intrusive activities consistent with the RIDEM-approved April 2011 Air Quality Monitoring Program (AQMP). The AQMP was 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 AQMP established actions levels for both tiers requiring certain responses (*e.g.,* additional sampling, changes in work practices, *etc*.) in the event of exceedances. The following sections summarize the results of both the real-time and time integrated air monitoring performed during this activity. As described below, no action level exceedances resulting from this activity were detected.

3.10 REAL-TIME AIR MONITORING

Real-time monitoring completed by GZA consisted of the following: Total Volatile Organic Compounds (TVOCs) using a Mini Rae 2000 Photoionization Detector (PID); Benzene using a Photovac Voyager portable Gas Chromatograph (GC); Respirable Dust (PM10) Levels using a DustTrak dust meter; Hydrogen Cyanide (HCn) using a Gas Badge HCn meter. The PID and GC were calibrated at the beginning of each day and the HCn meter and dust meter were calibrated at the beginning of the project and periodically during the project timeline. Regular monitoring was conducted at the work zone and the perimeter monitoring locations shown on the attached Figure 6. Air monitoring equipment was moved periodically (approximately once every two hours) between perimeter sampling locations to check parameters at the Site perimeter. During the remainder of time, the equipment was stationed proximate to the work zone. Graphs presenting the recorded TVOC, dust, benzene and hydrogen cyanide concentrations are included in Appendix D.

As presented in the data graphs, in general, results of the real-time monitoring were below the action levels for the constituents monitored. Periodic exceedances of TVOCs and one exceedance of respirable dust were reported at perimeter locations 2B, 3, and 4 during the project. One exceedance of respirable dust was reported at the work zone on August 22 only. The following provides details regarding each of the recorded exceedances.

Respirable Dust

As noted in data graphs for respirable dust, there were exceedances on August 22 at 8:31 AM at the work zone and on August 23 at 2:52 PM at Location 2B. The work zone exceedance on August 22 was not sustained and readings immediately following were all below the action level (1 mg/m^3). The perimeter exceedance on August 23 was also considered as not sustained due to the nearby readings that were below the action level.

TVOCs

As indicated in the data graphs for TVOCs, exceedances of the threshold limit of 0.1 ppm for TVOCs were recorded for short durations at several monitoring locations on August 22 and 23 only. These threshold exceedances were limited to concentrations ranging from 0.2 to 0.3 ppmv. These relatively low TVOC levels were unlikely related to any specific Site activity and were caused by background conditions, other environmental factors including vehicle exhaust or humidity, or are a result of the limitations of the field instrument.

3.20 TIME INTEGRATED AIR MONITORING

Consistent with the April 2011 AQMP, two VOC air samples, one upwind and one downwind from the work zone, were collected during each day when intrusive activities were being performed. In addition, a field blank was collected on each day and submitted

along with the field samples to the laboratory. The sampling locations, as shown on the attached Figure 6, were chosen based on actual and predicted wind conditions for the sampling day. VOC samples were 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."

As indicated previously, there were no sustained real-time monitoring levels which triggered the specified action levels; as such, submittal of the collected SUMMA canisters for laboratory analysis was not performed each day. However, consistent with the AQMP, one set of SUMMA canisters (those collected on August 25, 2011) was submitted for laboratory during this activity. The VOC air samples were analyzed for the compounds presented in the table below by Alpha Analytical of Mansfield, Massachusetts. The laboratory certificate of analysis is presented in Appendix E.

	Units	Action Levels (24 hour average)	Summa – Upgradient L1113440-01 08/25/2011		Summa – Downgradient L1113440-02 08/25/2011		Summa - Blank L1113440-03 08/25/2011	
			Result	RL	Result	RL	Result	RL
TO-15 Modified – VOLATILE ORGANICS IN AIR								
Benzene	ppbv	6.2	<	0.2	<	0.2	<	0.2
Toluene	ppbv	80	0.561	0.2	0.556	0.2	<	0.2
Ethylbenzene	ppbv	230	<	0.2	<	0.2	<	0.2
m&p-Xylene	ppbv	23	<	0.4	<	0.4	<	0.4
o-Xylene	ppbv	23	<	0.2	<	0.2	<	0.2
Naphthalene	ppbv	20	<	0.2	<	0.2	<	0.2

As presented above, results of the time-integrated VOC air samples were generally non-detect. Only one compound (toluene) was detected above the method detection limit in both the upgradient and downgradient air samples. All constituents were well below the Action Levels established in the AQMP.

TABLES

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

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 1A
Summary of Soil Characterization Analytical Data
GRSP Samples
Gas Regulator Station

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
Method Name	**Analyte**	**Units**									
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 1A
Summary of Soil Characterization Analytical Data
GRSP Samples
Gas Regulator Station

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 1B
Summary of Soil Characterization Analytical Data
GRS Samples
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM 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
Method Name	**Analyte**	**Units**										
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 1B
Summary of Soil Characterization Analytical Data
GRS Samples
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	GRS-7 0-3 4/5/2011 1104021-05 Solid	GRS-8 0-3 4/5/2011 1104021-06 Solid	GRS-8 9-12 4/5/2011 1104021-07 Solid	GRS-8 2 4/5/2011 1104021-08 Solid	GRS-9 0-3 4/5/2011 1104021-09 Solid	GRS-9 2 4/5/2011 1104021-10 Solid	GRS-10 0-3 4/5/2011 1104021-11 Solid	GRS-11 0-3 4/5/2011 1104021-12 Solid
Method Name	**Analyte**	**Units**										
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 1B
Summary of Soil Characterization Analytical Data
GRS Samples
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	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 1B
Summary of Soil Characterization Analytical Data
GRS Samples
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM 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
Method Name	**Analyte**	**Units**										
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 1B
Summary of Soil Characterization Analytical Data
GRS Samples
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	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
Method Name	**Analyte**	**Units**										
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 1C
Summary of Confirmatory Soil Samples Analytical Data
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	BS-1 0-0.25' 8/22/2011 1108292-01 Solid	BS-2 0-0.25' 8/22/2011 1108292-02 Solid	BS-3 0-0.25' 8/22/2011 1108292-03 Solid	BS-4 0-0.25' 8/22/2011 1108292-04 Solid	BS-5 0-0.25' 8/22/2011 1108292-05 Solid	BS-6 0-0.25' 8/22/2011 1108292-06 Solid	SWS-1 8/22/2011 1108292-07 Solid	SWS-2 8/22/2011 1108292-08 Solid
Method Name	**Analyte**	**Units**										
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	0.581	0.0651	0.462	0.557	<0.058	**5.03**	<0.0546	0.0546
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	0.11	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<0.0521	<0.0552	<0.0537	<0.052	<0.058	<0.0545	<0.0546	<0.0527

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

TABLE 1C
Summary of Confirmatory Soil Samples Analytical Data
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RIDEM I/C DEC (mg/kg)	RIDEM UCL (mg/kg)	BD BS-6 0-0.25' 8/22/2011 1108292-09 Solid	BS-6 0.25-0.5' 8/22/2011 1108350-01 Solid	BS-6 0.5-0.75' 8/22/2011 1108350-02 Solid	SCS-A 0-0.25' 8/26/2011 1108364-01 Solid
Method Name	**Analyte**	**Units**						
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	10	10,000	**13.1**	**5.11**	**1.56**	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	10	10,000	<1.15	<0.0563	<0.0593	<0.095

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

TABLE 2A
Summary of Concrete Pad Characterization Analytical Data
Gas Regulator Station

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
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
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	**0.148**	**16.5**	**10.1**	<0.105	**0.162**	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.103	<2.09	<0.109	<0.105	<0.101	<0.100

Notes:

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

TABLE 2B
Summary of Concrete Pad Confirmatory Sampling Analytical Data
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		CSCS-1 8/24/2011 1108326-05 Solid	CSCS-2 8/24/2011 1108326-06 Solid	BCSCS-1 8/24/2011 1108326-07 Solid	BCSCS-2 8/24/2011 1108326-08 Solid	CSCS-3 8/25/2011 1108357-01 Solid	CSCS-4 8/25/2011 1108357-02 Solid	CSCS-5 8/25/2011 1108357-03 Solid	CSCS-6 8/25/2011 1108357-04 Solid	CSCS-7 8/26/2011 1108364-02 Solid	CSCS-8 8/26/2011 1108364-03 Solid	CSCS-4A 8/31/2011 1108375-01 Solid
Method Name	**Analyte**	**Units**											
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	**0.198**	**3.68**	<0.139	<0.182	<0.094	**0.19**	**0.56**
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.211	<0.132	<0.0523	<0.0523	<0.185	<0.192	<0.139	<0.182	<0.094	<0.098	<0.095

Notes:

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

TABLE 2B
Summary of Concrete Pad Confirmatory Sampling Analytical Data
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		CSCS-9 8/31/2011 1108375-02 Solid	CSCS-10 8/31/2011 1108375-03 Solid
Method Name	**Analyte**	**Units**		
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.097	<0.01
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.097	<0.01
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.097	<0.01
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.097	<0.01
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	**0.88**	**0.23**
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	**0.29**	**0.14**
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.097	<0.01
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.097	<0.01
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.097	<0.01

Notes:

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

TABLE 3A
Summary of Retaining Wall Characterization Analytical Data
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RW-1 4/5/2011 1104021-27 Concrete	RW-2 4/5/2011 1104021-28 Concrete	RW-3 4/5/2011 1104021-29 Concrete	RW-4 4/5/2011 1104021-30 Concrete	RW-3 2in 4/21/2011 1104254-06 Concrete	RW-3 3in 4/21/2011 1104296-03 Concrete	RW-3A 1in 4/21/2011 1104254-07 Concrete	RW-3B 1in 4/21/2011 1104254-08 Concrete
Method Name	**Analyte**	**Units**								
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	<0.105	<0.105	**4.58**	<0.102	**3.71**	**0.273**	**0.19**	**0.566**
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.105	<0.105	<0.104	<0.102	**0.218**	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.105	<0.105	<0.104	<0.102	<0.101	<0.103	<0.100	<0.0991

Notes:

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

TABLE 3A
Summary of Retaining Wall Characterization Analytical Data
Gas Regulator Station

Former Tidewater Facility
Pawtucket, RI

	Sample No. Sample Date: Sample Time: ClientSample:		RW-3C 1in 4/21/2011 1104254-09 Concrete
Method Name	**Analyte**	**Units**	
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	**0.673**
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.103
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.103

Notes:

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

TABLE 3B
Summary of Retaining Wall Confirmatory Samples Analytical Data
Gas Regulator Station

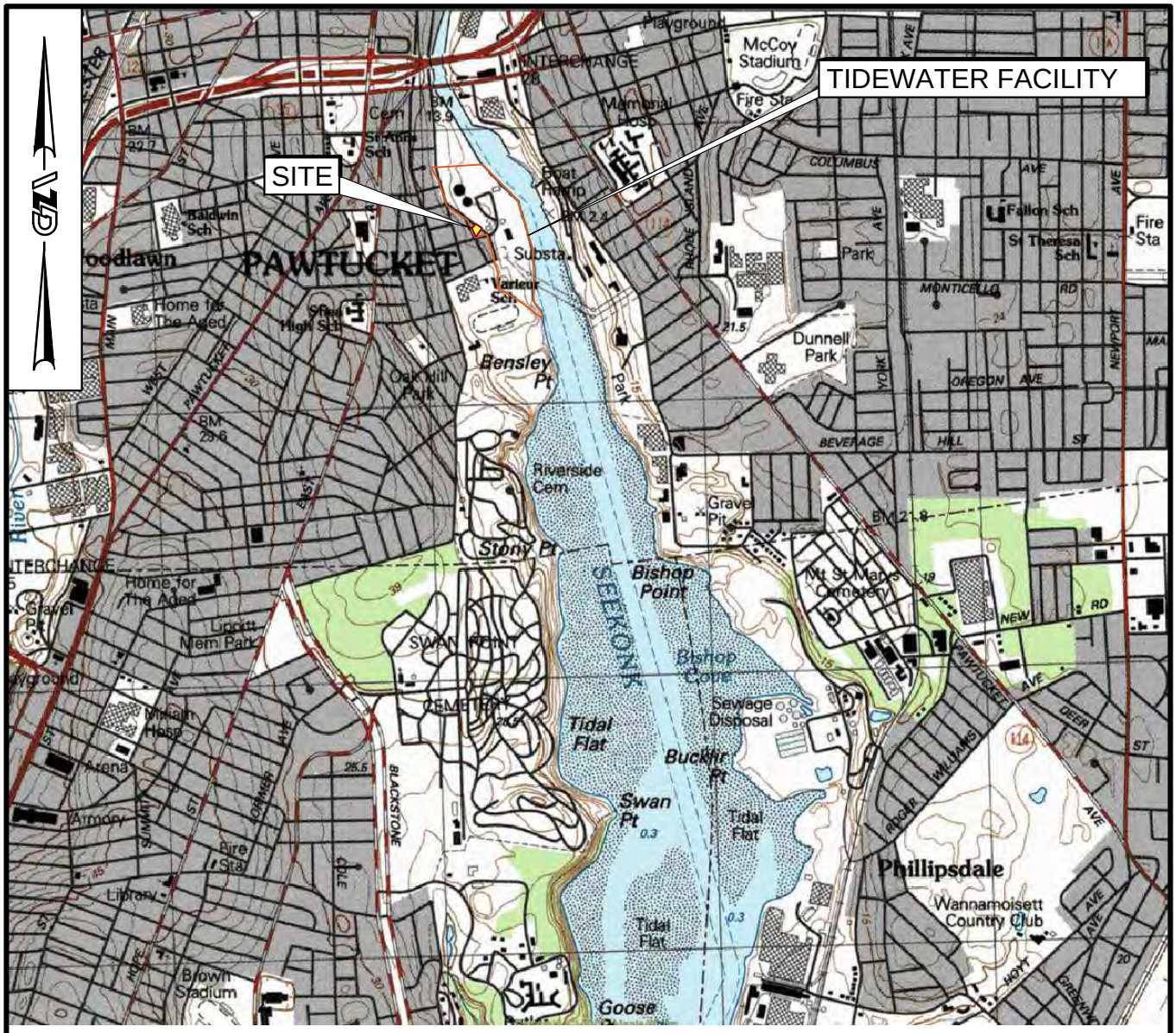
Former Tidewater Facility
Pawtucket, RI

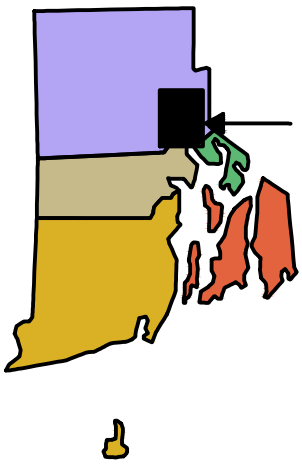
	Sample No. Sample Date: Sample Time: ClientSample:		RWCS-1 8/23/2011 1108326-01 Solid	RWCS-2 8/23/2011 1108326-02 Solid	RWCS-3 8/23/2011 1108326-03 Solid	RWCS-4 8/23/2011 1108326-04 Solid
Method Name	**Analyte**	**Units**				
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1016	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1221	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1232	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1242	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1248	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1254	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1260	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1262	mg/kg dry	<0.193	<0.199	<0.201	<0.204
8082 Polychlorinated Biphenyls (PCB)	Aroclor 1268	mg/kg dry	<0.193	<0.199	<0.201	<0.204

Notes:

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

FIGURES





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 NVGD AT 3 METER INTERVALS

APPROXIMATE SCALE IN FEET

0' 500' 1000' 2000'

TIDEWATER FACILITY
GAS REGULATOR STATION

PAWTUCKET, RHODE ISLAND

COMPLETION REPORT
LOCUS PLAN

SEPTEMBER 2011

FIGURE NO. 1

NOTE:

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

0 40 80 160 240

GRAPHIC SCALE IN FEET (1"=±80')

NO.	ISSUE/DESCRIPTION	BY	DATE

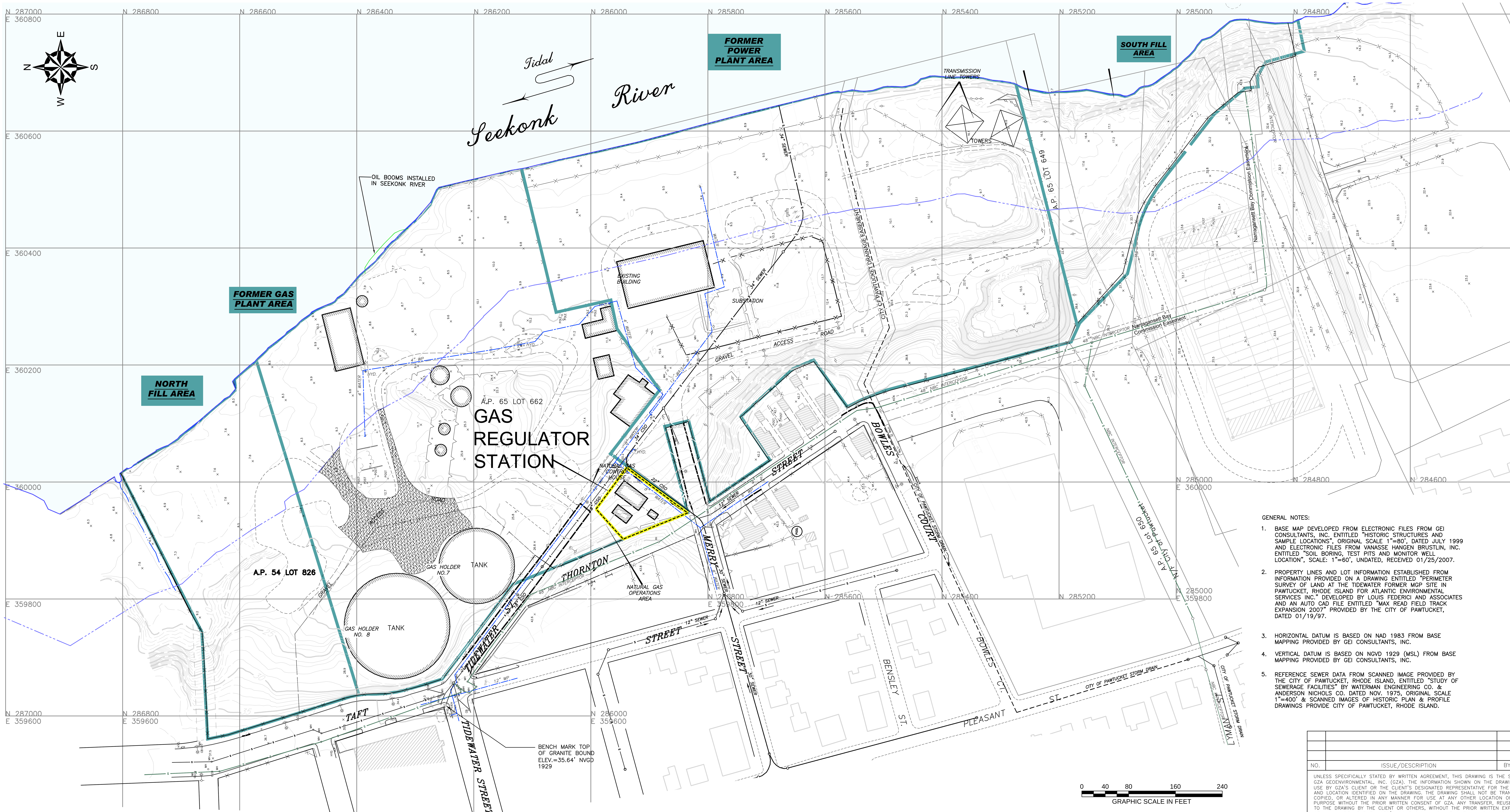
NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND
COMPLETION REPORT

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 2
DESIGNED BY: EB	DRAWN BY: CRB	SCALE: 1" = ±80'	
DATE: SEPT. 2011	PROJECT NO. 43654.30	REVISION NO. 0	SHEET NO. 2 OF 6



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 MGP SITE IN PAWTUCKET, RHODE ISLAND FOR ATLANTIC ENVIRONMENTAL SERVICES INC." DEVELOPED BY LOUIS FEDERICI AND ASSOCIATES AND AN AUTO CAD FILE ENTITLED "MAX READ FIELD TRACK EXPANSION 2007" PROVIDED BY THE CITY OF PAWTUCKET, 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 PROVIDE CITY OF PAWTUCKET, RHODE ISLAND.

LEGEND

EXISTING BUILDINGS
EXISTING CONTOUR (MINOR 1 FOOT INTERVAL)
EXISTING CONTOUR (MAJOR 5 FOOT INTERVAL)
APROXIMATE 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

DRAFT COPY
NOT FOR CONSTRUCTION

NO.	ISSUE/DESCRIPTION	BY	DATE

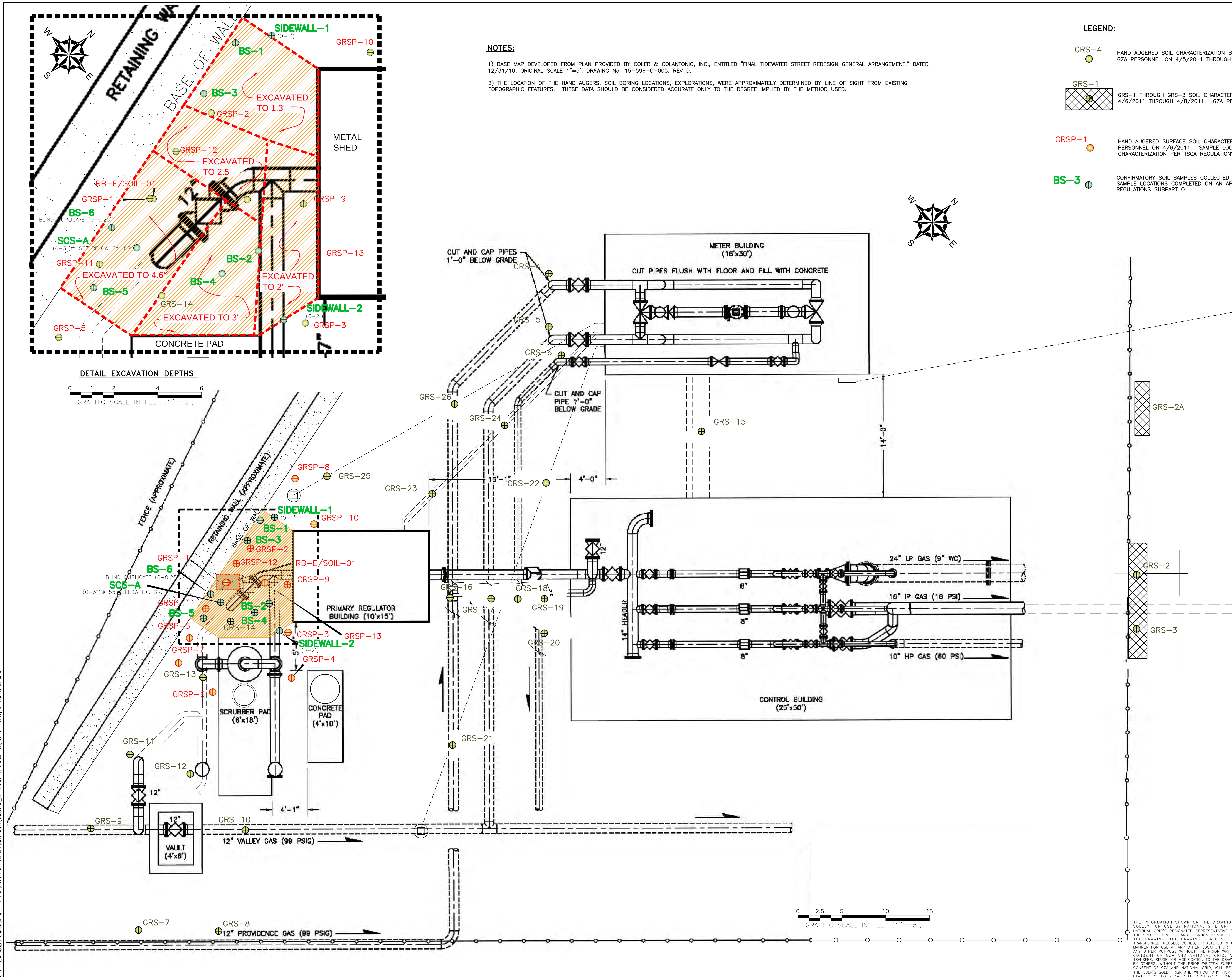
NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND

COMPLETION REPORT
GAS REGULATOR STATION
SITE PLAN

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: 1"=5'	3
DATE: SEPT. 2011	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 3 OF 6



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.

LEGEND:

GRS-4 — HAND AUGERED SOIL CHARACTERIZATION BORINGS AND SAMPLING LOCATIONS GRS-4 THROUGH GRS-26 PERFORMED BY GZA PERSONNEL ON 4/5/2011 THROUGH 4/6/20111.

GRS-1 — GRS-1 THROUGH GRS-3 SOIL CHARACTERIZATION TEST PIT LOCATIONS CONDUCTED BY NATIONAL GRID GAS OPERATIONS ON 4/6/2011 THROUGH 4/8/2011. GZA PERSONNEL COLLECTED SOIL SAMPLES FROM TEST PIT LOCATIONS.

GRSP-1 — HAND AUGERED SURFACE SOIL CHARACTERIZATION SAMPLE LOCATIONS GRSP-1 THROUGH GRSP-10 PERFORMED BY GZA PERSONNEL ON 4/6/2011. SAMPLE LOCATIONS COMPLETED ON AN APPROXIMATE 3 METER GRID FOR PCB CHARACTERIZATION PER TSCA REGULATIONS SUBPART N.

BS-3 — CONFIRMATORY SOIL SAMPLES COLLECTED BY GZA PERSONNEL ON AUGUST 22, 2011 AND AUGUST 26, 2011. SAMPLE LOCATIONS COMPLETED ON AN APPROXIMATE 1.5 METER GRID FOR PCB CHARACTERIZATION PER TSCA REGULATIONS SUBPART O.

NO.	ISSUE/DESCRIPTION	BY	DATE

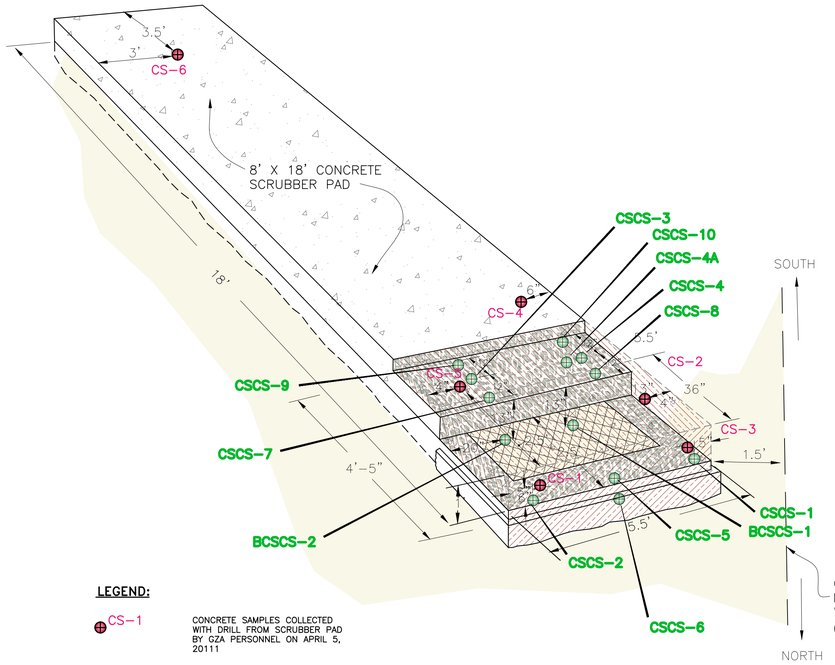
NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND

COMPLETION REPORT
GAS REGULATOR STATION
SOIL SAMPLING LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com

PREPARED FOR: nationalgrid

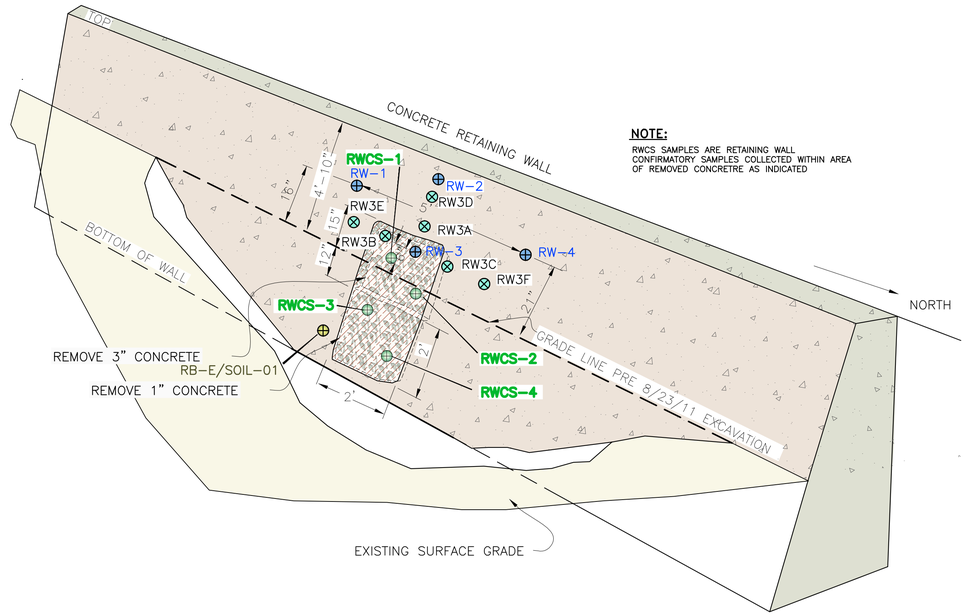
PROJ MGR: MK	REVIEWED BY: EB	CHECKED BY: MK	FIGURE 4
DESIGNED BY: EB	DRAWN BY: CRB	SCALE: 1"=5'	
DATE: SEPT. 2011	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 4 OF 6



LEGEND:

CS-1	CONCRETE SAMPLES COLLECTED WITH DRILL FROM SCRUBBER PAD BY GZA PERSONNEL ON APRIL 5, 20111
CSCS-1	CSCS-1 TO CSCS-10 ARE 0-1" SAMPLES
CSCS-4A	CSCS-4A IS A 1-2" SAMPLE
BCSCS-1	BSCS-1 & BSCS 2 ARE SOIL "BENEATH CONCRETE" CONFIRMATORY SAMPLING LOCATIONS (BOTH AT 13" BELOW ORIGINAL TOP OF SLAB)
	INTERIOR SOIL WITHIN PAD WALLS AND BENEATH TOP OF CONCRETE TOP SLAB
	SCARIFIED AND/OR REMOVED

CONCRETE SLAB DETAIL
NOT TO SCALE



NOTE:
RWCS SAMPLES ARE RETAINING WALL CONFIRMATORY SAMPLES COLLECTED WITHIN AREA OF REMOVED CONCRETRE AS INDICATED

LEGEND:

RW-1	CONCRETE SAMPLES COLLECTED WITH DRILL FROM RETAINING WALL BY GZA PERSONNEL ON APRIL 5, 20111
RW-3A	CONCRETE SAMPLES COLLECTED WITH DRILL FROM RETAINING WALL BY GZA PERSONNEL ON APRIL 5, 2011
RWCS-1	8/23/11 RETAINING WALL CONCRETE REMOVAL CONFIRMATORY SAMPLING LOCATION
	SCARIFIED AND/OR REMOVED

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 & IN AUGUST & SEPTEMBER 2011. DIMENSIONS SHOWN ARE APPROXIMATE ONLY.

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.

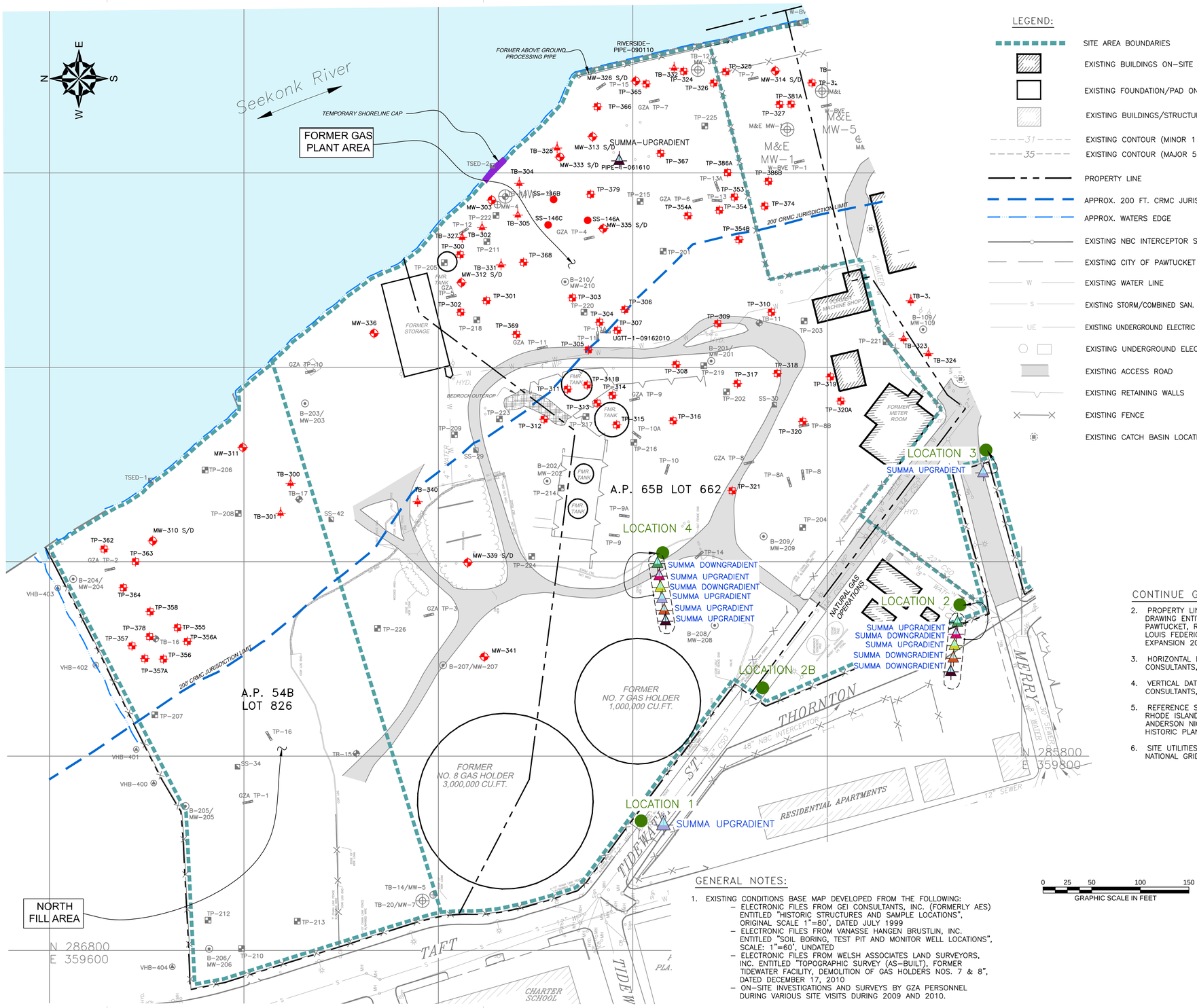
NO.	ISSUE/DESCRIPTION	BY	DATE

NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND

COMPLETION REPORT
GAS REGULATOR STATION
CONCRETE SAMPLING LOCATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com
PREPARED FOR: nationalgrid

PROJ MGR: MK	REVIEWED BY: EB	CHECKED BY: MK	FIGURE 5
DESIGNED BY: EB	DRAWN BY: CRB	SCALE: 1"=5'	
DATE: SEPT. 2011	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 5 OF 6



LEGEND:

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

SAMPLE LEGEND

- SS-9 — ATLANTIC SURFACE SOIL SAMPLE LOCATION
- TSED-6 — ATLANTIC SEDIMENT SAMPLE LOCATION
- W-BVE SS-3 — WESTON/BLACKSTONE VALLEY ELECTRIC SEDIMENT SAMPLE LOCATION
- RIDEM SS-3 — RIDEM SURFACE SOIL SAMPLE LOCATION
- B-109/MW-109 — MONITORING WELL/BORING (VHB) SURVEYED
- TP-3A — ATLANTIC TEST PIT LOCATION
- W-BVE — WESTON/BLACKSTONE VALLEY ELECTRIC TEST PIT LOCATION
- GZA TP-8 — GZA/VALLEY GAS TEST PIT LOCATION
- TB-15 — ATLANTIC SOIL BORING LOCATION
- MW-3 — ATLANTIC MONITORING WELL LOCATION
- M&E MW-1 — METCALF & EDDY MONITORING WELL LOCATION
- VHB-400 — VHB SURFACE SOIL SAMPLE LOCATION NON-SURVEYED
- TP-204 — VHB TEST PIT (2006)
- GZ-01 — GZA TEST PIT (2009)
- TB-300 — GZA TEST BORING LOCATION (2010)
- MW-320 S/D — GZA MONITORING WELL LOCATION (2010)
- TP-306 — GZA TEST PIT LOCATION (2010)
- SS-100 — GZA SURFACE SOIL SAMPLE LOCATION (2010)
- PIPE-1-061610 — GZA RESIDUAL MATERIAL SAMPLE (2010)
- LOCATION 1 — GZA PERIMETER AIR MONITORING LOCATION
- SUMMA — SUMMA CANISTER LOCATION PLACED 8/22/2011
- SUMMA — SUMMA CANISTER LOCATION PLACED 8/23/2011
- SUMMA — SUMMA CANISTER LOCATION PLACED 8/24/2011
- SUMMA — SUMMA CANISTER LOCATION PLACED 8/25/2011
- SUMMA — SUMMA CANISTER LOCATION PLACED 8/26/2011
- SUMMA — SUMMA CANISTER LOCATION PLACED 9/9/2011

CONTINUE GENERAL NOTES:

2. PROPERTY LINES AND LOT INFORMATION ESTABLISHED FROM INFORMATION PROVIDED ON A DRAWING ENTITLED "PERIMETER SURVEY OF LAND AT THE TIDEWATER FORMER MGP SITE IN PAWTUCKET, RHODE ISLAND FOR ATLANTIC ENVIRONMENTAL SERVICES INC." DEVELOPED BY LOUIS FEDERICI AND ASSOCIATES AND AN AUTO CAD FILE ENTITLED "MAX READ FIELD TRACK EXPANSION 2007" PROVIDED BY THE CITY OF PAWTUCKET.
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 BY THE CITY OF PAWTUCKET, RHODE ISLAND.
6. SITE UTILITIES TAKEN FROM 1984 SANBORN MAP AND HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND SHOWN FOR REFERENCE ONLY.

GENERAL NOTES:

1. EXISTING CONDITIONS BASE MAP DEVELOPED FROM THE FOLLOWING:
   - ELECTRONIC FILES FROM GEI CONSULTANTS, INC. (FORMERLY AES) ENTITLED "HISTORIC STRUCTURES AND SAMPLE LOCATIONS", ORIGINAL SCALE 1"=80', DATED JULY 1999
   - ELECTRONIC FILES FROM VANASSE HANGEN BRUSTLIN, INC. ENTITLED "SOIL BORING, TEST PIT AND MONITOR WELL LOCATIONS", SCALE: 1"=60', UNDATED
   - ELECTRONIC FILES FROM WELSH ASSOCIATES LAND SURVEYORS, INC. ENTITLED "TOPOGRAPHIC SURVEY (AS-BUILT), FORMER TIDEWATER FACILITY, DEMOLITION OF GAS HOLDERS NOS. 7 & 8", DATED DECEMBER 17, 2010
   - ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS DURING 2009 AND 2010.

0 25 50 100 150
GRAPHIC SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

NATIONAL GRID
TIDEWATER FACILITY
PAWTUCKET, RHODE ISLAND

COMPLETION REPORT
AIR MONITORING LOCATIONS AND
SUMMA CANISTER LOCATIONS

PREPARED BY:		PREPARED FOR:	
GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		nationalgrid	
PROJ MGR: MK	REVIEWED BY: EB	CHECKED BY: MK	FIGURE 6
DESIGNED BY: EB	DRAWN BY: CRB	SCALE: 1"=50'	
DATE: SEPT. 2011	PROJECT NO. 43654.00	REVISION NO. 0	SHEET NO. 6 OF 6

APPENDIX A

LIMITATIONS

LIMITATIONS

1. This Completion 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 polychlorinated biphenyl (PCB) remediation activities performed within the fenced natural gas regulator station area at the former Tidewater facility in Pawtucket, Rhode Island ("Site") under the applicable provisions of the Performance Based Disposal provisions of the Toxic Substance Control Act (TSCA), 40 CFR Part 761.61(b) and State of Rhode Island Department of Environmental Management Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of GZA GeoEnvironmental, Inc.(GZA) or National Grid.

2. GZA's work was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GZA observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. GZA's findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the study. No other warranty, express or implied is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during the work described herein.

3. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based upon services performed and observations made by GZA.

4. In the event that National Grid or others authorized to use this report obtain information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.

5. The conclusions and recommendations contained in this report are based in part upon the data obtained from environmental samples obtained from relatively widely spread subsurface explorations. The nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.

6. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more gradual. For specific information, refer to the boring logs.

7. In the event this work included the collection of water level data, these readings have been made in the test pits, borings and/or observation wells at times and under conditions stated on the exploration logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.

8. The conclusions contained in this report are based in part upon various types of chemical data and are contingent upon their validity. These data have been reviewed and interpretations made in the report. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by GZA and the conclusions and recommendations presented herein modified accordingly.

APPENDIX B

SITE PHOTOGRAPHS

APPENDIX B
PCB CLEAN UP COMPLETION PHOTOGRAPHS

Former Tidewater Facility
Pawtucket, Rhode Island

Area of former leaky valve and impacted retaining wall. April 5, 2011.

Closeup of impacted soils and retaining wall, April 22, 2011.

APPENDIX B
PCB CLEAN UP COMPLETION PHOTOGRAPHS

Former Tidewater Facility
Pawtucket, Rhode Island

PCB Impacted concrete pad with former scrubber equipment. April 5, 2011.

PCB impacted soil excavation and select sampling locations. August 22, 2011.

APPENDIX B
PCB CLEAN UP COMPLETION PHOTOGRAPHS

Former Tidewater Facility
Pawtucket, Rhode Island

Scarified retaining wall. August 23, 2011.

Scarified and/or removed concrete slab. August 25, 2011.

APPENDIX B
PCB CLEAN UP COMPLETION PHOTOGRAPHS

Former Tidewater Facility
Pawtucket, Rhode Island

Crushed stone placement over excavated area with retaining wall in foreground. September 14, 2011.

Reconstructed concrete pad. September 14, 2011.

APPENDIX B
PCB CLEAN UP COMPLETION PHOTOGRAPHS

Former Tidewater Facility
Pawtucket, Rhode Island

Typical air quality monitoring set up.

Typical SUMMA canister placement.

APPENDIX C

LABORATORY CERTIFICATES OF ANALYSIS-CONFIRMATORY SAMPLES

CERTIFICATE OF ANALYSIS

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

RE: Tidewater GRS Upgrade (43654.0)
ESS Laboratory Work Order Number: 1108292

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 GRS Upgrade

ESS Laboratory Work Order: 1108292

SAMPLE RECEIPT

The following samples were received on August 22, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	SampleName	Matrix	Analysis
1108292-01	Bottom Sample 1 0-0.25	Soil	8082
1108292-02	Bottom Sample 2 0-0.25	Soil	8082
1108292-03	Bottom Sample 3 0-0.25	Soil	8082
1108292-04	Bottom Sample 4 0-0.25	Soil	8082
1108292-05	Bottom Sample 5 0-0.25	Soil	8082
1108292-06	Bottom Sample 6 0-0.25	Soil	8082
1108292-07	Sidewall Sample 1	Soil	8082
1108292-08	Sidewall Sample 2	Soil	8082
1108292-09	Blind Duplicate BD082211	Soil	8082

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108292

PROJECT NARRATIVE

8082 Polychlorinated Biphenyls (PCB)
1108292-09 **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 GRS Upgrade
Client Sample ID: Bottom Sample 1 0-0.25
Date Sampled: 08/22/11 14:00
Percent Solids: 95
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1221	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1232	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1242	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1248	**0.0581** (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1254	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1260	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1262	ND (0.0521)		1	08/23/11 16:27		CH12226
Aroclor 1268	ND (0.0521)		1	08/23/11 16:27		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*85 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Bottom Sample 2 0-0.25
Date Sampled: 08/22/11 14:20
Percent Solids: 91
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1221	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1232	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1242	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1248	**0.0651** (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1254	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1260	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1262	ND (0.0552)		1	08/23/11 17:23		CH12226
Aroclor 1268	ND (0.0552)		1	08/23/11 17:23		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*71 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Bottom Sample 3 0-0.25
Date Sampled: 08/22/11 14:40
Percent Solids: 94
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1221	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1232	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1242	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1248	**0.462** (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1254	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1260	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1262	ND (0.0537)		1	08/23/11 17:42		CH12226
Aroclor 1268	ND (0.0537)		1	08/23/11 17:42		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Bottom Sample 4 0-0.25
Date Sampled: 08/22/11 15:00
Percent Solids: 92
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1221	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1232	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1242	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1248	**0.557** (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1254	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1260	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1262	ND (0.0520)		1	08/23/11 18:01		CH12226
Aroclor 1268	ND (0.0520)		1	08/23/11 18:01		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*75 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Bottom Sample 5 0-0.25
Date Sampled: 08/22/11 15:15
Percent Solids: 88
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1221	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1232	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1242	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1248	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1254	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1260	**0.110** (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1262	ND (0.0580)		1	08/23/11 18:20		CH12226
Aroclor 1268	ND (0.0580)		1	08/23/11 18:20		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*85 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Bottom Sample 6 0-0.25
Date Sampled: 08/22/11 15:30
Percent Solids: 89
Initial Volume: 20.6
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1221	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1232	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1242	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1248	**5.03** (0.273)		5	08/24/11 14:37		CH12226
Aroclor 1254	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1260	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1262	ND (0.0545)		1	08/23/11 18:38		CH12226
Aroclor 1268	ND (0.0545)		1	08/23/11 18:38		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*84 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*110 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Sidewall Sample 1
Date Sampled: 08/22/11 15:40
Percent Solids: 93
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1221	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1232	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1242	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1248	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1254	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1260	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1262	ND (0.0546)		1	08/23/11 18:57		CH12226
Aroclor 1268	ND (0.0546)		1	08/23/11 18:57		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*75 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Sidewall Sample 2
Date Sampled: 08/22/11 15:50
Percent Solids: 94
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1221	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1232	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1242	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1248	**0.0546** (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1254	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1260	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1262	ND (0.0527)		1	08/23/11 19:16		CH12226
Aroclor 1268	ND (0.0527)		1	08/23/11 19:16		CH12226

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*67 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Blind Duplicate BD082211
Date Sampled: 08/22/11 00:00
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108292
ESS Laboratory Sample ID: 1108292-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/22/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1221	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1232	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1242	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1248	**13.1** (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1254	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1260	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1262	ND (1.15)		20	08/24/11 14:54		CH12226
Aroclor 1268	ND (1.15)		20	08/24/11 14:54		CH12226

	%Recovery	Qualifier	Limits
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 GRS Upgrade

ESS Laboratory Work Order: 1108292

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CH12226 - 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	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0192*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0230*		mg/kg wet	*0.02500*		*92*	*30-150*			
LCS										
Aroclor 1016	0.485	0.0500	mg/kg wet	0.5000		97	40-140			
Aroclor 1260	0.479	0.0500	mg/kg wet	0.5000		96	40-140			
Surrogate: Decachlorobiphenyl	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0195*		mg/kg wet	*0.02500*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
LCS Dup										
Aroclor 1016	0.493	0.0500	mg/kg wet	0.5000		99	40-140	1	50	
Aroclor 1260	0.498	0.0500	mg/kg wet	0.5000		100	40-140	4	50	
Surrogate: Decachlorobiphenyl	*0.0211*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0201*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0213*		mg/kg wet	*0.02500*		*85*	*30-150*			
Matrix Spike **Source: 1108292-01**										
Aroclor 1016	0.551	0.0526	mg/kg dry	0.5263	ND	105	40-140			
Aroclor 1260	0.498	0.0526	mg/kg dry	0.5263	ND	95	40-140			
Surrogate: Decachlorobiphenyl	*0.0213*		mg/kg dry	*0.02632*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0213*		mg/kg dry	*0.02632*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0288*		mg/kg dry	*0.02632*		*109*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0239*		mg/kg dry	*0.02632*		*91*	*30-150*			
Matrix Spike Dup **Source: 1108292-01**										
Aroclor 1016	0.566	0.0524	mg/kg dry	0.5237	ND	108	40-140	3	50	
Aroclor 1260	0.488	0.0524	mg/kg dry	0.5237	ND	93	40-140	2	50	
Surrogate: Decachlorobiphenyl	*0.0211*		mg/kg dry	*0.02618*		*80*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0209*		mg/kg dry	*0.02618*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0254*		mg/kg dry	*0.02618*		*97*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade

ESS Laboratory Work Order: 1108292

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CH12226 - 3540										
Surrogate: Tetrachloro-m-xylene [2C]	*0.0237*		mg/kg dry	*0.02618*		*91*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108292

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 GRS Upgrade

ESS Laboratory Work Order: 1108292

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 PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

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

ESS Project ID: 11080292
Date Project Due: 8/24/11
Days For Project: 2 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **5.4**		16. Are ESS labels on correct containers?	**Yes** / No
Iced With: **Ice**		17. Were samples received intact?	**Yes** / No
6. Was COC included with samples?	Yes	ESS Sample IDs:	_____
7. Was COC signed and dated by client?	Yes	Sub Lab:	_____
8. Does the COC match the sample	Yes	Analysis:	_____
9. Is COC complete and correct?	Yes	TAT:	_____

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP
3	Yes	8 oz Soil Jar	1	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	8 oz Soil Jar	1	NP
9	Yes	8 oz Soil Jar	1	NP

Completed By: MK Date/Time: 8/22/11
Reviewed By: VSC Date/Time: 8/22/11

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 48 hr
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: 1108292

Electronic Deliverable Yes ___ No ___

Format: Excel ___ Access ___ PDF ___ Other _____

Co. Name	Project #	Project Name (20 Char. or less)
GZA GeoEnvironmental Inc	43654-0	Tidewater Gas Upgrade

Contact Person	Address
M. Kilpatrick	530 Broadway

City	State	Zip	PO#
Providence	RI	02909	

Telephone #	Fax #	Email Address
401 421 4140		

Write Required Analysis

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 *	Hold for Possible 8082A
01	8/22/11	1400		X	S	Bottom Sample 1, 0-0.25'				X	
—		↓		X	S	" " 0.25'-0.5'				X	X
—		↓		X	S	" " 0.5'-0.75'				X	X
02		14:20		X	S	Bottom Sample 2, 0-0.25'				X	
—		↓		X	S	0.25'-0.5'					X
—		↓		X	S	0.5'-0.75'					X
03		14:40		X	S	Bottom Sample 3, 0-0.25'				X	
—		↓		X	S	0.25'-0.5'					X
—		↓		X	S	0.5'-0.75'					X
04	↓	15:00		X	S	Bottom Sample 4 0-0.25'				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 X Yes ___ No

Seals Intact ___ Yes ___ No NA: X

Cooler Temp: 5.4 ice

Internal Use Only
[ ] Pickup
[ ] Technicians _____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: W Fortune E. Beloff

Comments: Analyze VIA EPA 8082A PCBs with SOHXLET EXTRACTION/48hr turn

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/22/11 1600		8/22/11 1800		8/22/11 1700	Manuel Keane	8/22/11 1700
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Page 2 of 2

Turn Time ___ Standard Other 48 hr
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: 110892

Electronic Deliverable Yes ___ No ___

Format: Excel ___ Access ___ PDF ___ Other _____

Co. Name: GZA GeoEnvironmental Inc
Project #: 43654.0
Project Name (20 Char. or less): Tidewater Gas Upgrade
Contact Person: M Kilpatrick
Address: 530 Broadway
City State Zip PO#
Telephone # Fax # Email Address

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 8082A*	Hold for possible 8082A
—	8/22/11	15:00			S	Bottom Sample 4, 0.25 - 0.5'					X
—		↓			S	0.5' - 0.75'					X
05		15:15			S	Bottom Sample 5 0 - 0.25'				X	
—					S	" 0.25' - 0.5'					X
—		↓			S	0.5' - 0.75'					X
06		15:30			S	Bottom Sample 6 0 - 0.25				X	
—		↓			S	" " 0.25 - 0.5					X
—		↓			S	" " 0.5 - 0.75					X
07		15:40			S	Sidewall Sample 1 @				X	
08		1550			S	Sidewall Samp 2				X	
09	↓				S	Blind Duplicate BD082211				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 X Yes ___ No
Seals Intact ___ Yes ___ No NA: X
Cooler Temp: 5.4 / Ice

Internal Use Only
[ ] Pickup
[ ] Technicians _____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: SAME

Comments: SAME

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/22/11 1600		8/22/11 1600		8/22/11 1730		8/22/11 1700
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

CERTIFICATE OF ANALYSIS

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

RE: Tidewater GRS Upgrade (43654.0)
ESS Laboratory Work Order Number: 1108326

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 GRS Upgrade

ESS Laboratory Work Order: 1108326

SAMPLE RECEIPT

The following samples were received on August 24, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	SampleName	Matrix	Analysis
1108326-01	RWCS-1	Soil	8082
1108326-02	RWCS-2	Soil	8082
1108326-03	RWCS-3	Soil	8082
1108326-04	RWCS-4	Soil	8082
1108326-05	CSCS-1	Soil	8082
1108326-06	CSCS-2	Soil	8082
1108326-07	BCSCS-1	Soil	8082
1108326-08	BCSCS-2	Soil	8082

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108326

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 GRS Upgrade
Client Sample ID: RWCS-1
Date Sampled: 08/23/11 14:20
Percent Solids: 94
Initial Volume: 5.51
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1221	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1232	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1242	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1248	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1254	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1260	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1262	ND (0.193)		1	08/25/11 20:53		CH12425
Aroclor 1268	ND (0.193)		1	08/25/11 20:53		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*59 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*55 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: RWCS-2
Date Sampled: 08/23/11 14:25
Percent Solids: 95
Initial Volume: 5.28
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1221	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1232	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1242	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1248	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1254	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1260	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1262	ND (0.199)		1	08/25/11 21:12		CH12425
Aroclor 1268	ND (0.199)		1	08/25/11 21:12		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*87 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: RWCS-3
Date Sampled: 08/23/11 14:30
Percent Solids: 96
Initial Volume: 5.17
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1221	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1232	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1242	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1248	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1254	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1260	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1262	ND (0.201)		1	08/25/11 21:30		CH12425
Aroclor 1268	ND (0.201)		1	08/25/11 21:30		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*63 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: RWCS-4
Date Sampled: 08/23/11 14:35
Percent Solids: 94
Initial Volume: 5.21
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1221	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1232	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1242	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1248	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1254	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1260	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1262	ND (0.204)		1	08/25/11 21:49		CH12425
Aroclor 1268	ND (0.204)		1	08/25/11 21:49		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*65 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: CSCS-1
Date Sampled: 08/24/11 14:00
Percent Solids: 94
Initial Volume: 5.03
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1221	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1232	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1242	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1248	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1254	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1260	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1262	ND (0.211)		1	08/25/11 22:08		CH12425
Aroclor 1268	ND (0.211)		1	08/25/11 22:08		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: CSCS-2
Date Sampled: 08/24/11 14:05
Percent Solids: 94
Initial Volume: 8.03
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1221	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1232	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1242	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1248	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1254	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1260	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1262	ND (0.132)		1	08/25/11 22:27		CH12425
Aroclor 1268	ND (0.132)		1	08/25/11 22:27		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*74 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*84 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: BCSCS-1
Date Sampled: 08/24/11 15:10
Percent Solids: 97
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1221	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1232	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1242	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1248	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1254	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1260	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1262	ND (0.0523)		1	08/25/11 22:46		CH12425
Aroclor 1268	ND (0.0523)		1	08/25/11 22:46		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*66 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: BCSCS-2
Date Sampled: 08/24/11 14:15
Percent Solids: 97
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108326
ESS Laboratory Sample ID: 1108326-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/11 19:00

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1221	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1232	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1242	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1248	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1254	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1260	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1262	ND (0.0523)		1	08/25/11 23:05		CH12425
Aroclor 1268	ND (0.0523)		1	08/25/11 23:05		CH12425

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade

ESS Laboratory Work Order: 1108326

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CH12425 - 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	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0189*		mg/kg wet	*0.02500*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0211*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0219*		mg/kg wet	*0.02500*		*87*	*30-150*			
LCS										
Aroclor 1016	0.511	0.0500	mg/kg wet	0.5000		102	40-140			
Aroclor 1260	0.538	0.0500	mg/kg wet	0.5000		108	40-140			
Surrogate: Decachlorobiphenyl	*0.0211*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0233*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0224*		mg/kg wet	*0.02500*		*90*	*30-150*			
LCS Dup										
Aroclor 1016	0.507	0.0500	mg/kg wet	0.5000		101	40-140	0.9	50	
Aroclor 1260	0.531	0.0500	mg/kg wet	0.5000		106	40-140	1	50	
Surrogate: Decachlorobiphenyl	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0198*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108326

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 GRS Upgrade

ESS Laboratory Work Order: 1108326

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 PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

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

ESS Project ID: 11080326
Date Project Due: 8/26/11
Days For Project: 2 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **4.2**		16. Are ESS labels on correct containers?	Yes No
Iced With: **Icepacks**		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP
3	Yes	8 oz Soil Jar	1	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	8 oz Soil Jar	1	NP

Completed By: MK Date/Time: 8/24/11
Reviewed By: _____ Date/Time: 8/24/11

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 1 of 1

Turn Time ___ Standard Other 48 hr
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: 1108326

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

Co. Name	Project #	Project Name (20 Char. or less)
GZA GeoEnvironmental Inc	43654.00	Tidewater GRS Upgrade

Contact Person	Address
M. Kilpatrick	530 Broadway

City	State	Zip	PO#
Providence	RI	02909	

Telephone #	Fax #	Email Address
401 421-4140		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: RCRA 8082A PCBs *
01	8/23/11	1420		X	S	RW CS-1		1	G	X
02		1425		X	S	RW CS-2		1		X
03		1430		X	S	RW CS-3		1		X
04		1435		X	S	RW CS-4		1		X
05	8/24/11	1400			S	CSCS-1		1		X
06		1405			S	CSCS-2		1		X
07		1510			S	BCSCS-1		1		X
08		1415			S	BCSCS-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 X Yes ___ No

Seals Intact ___ Yes ___ No NA: X

Cooler Temp: 4.2

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ____

Sampled by: W. Fortune

Comments: Samples are concrete samples, except BCSCS samples are soil. Analyze via EPA 8082A PCBs with Soxhlet Extraction / 48hr turnaround

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/24/11 1535		8/24/11 1535				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

CERTIFICATE OF ANALYSIS

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

RE: Tidewater GRS Upgrade (43654.30)
ESS Laboratory Work Order Number: 1108350

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 GRS Upgrade

ESS Laboratory Work Order: 1108350

SAMPLE RECEIPT

The following samples were received on August 25, 2011 for the analyses specified on the enclosed Chain of Custody Record.

These samples were originally received on hold on August 22, 2011.

Lab Number	SampleName	Matrix	Analysis
1108350-01	Bottom Sample 6 0.25-0.5	Soil	8082
1108350-02	Bottom Sample 6 0.5-0.75	Soil	8082

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108350

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 GRS Upgrade
Client Sample ID: Bottom Sample 6 0.25-0.5
Date Sampled: 08/22/11 15:30
Percent Solids: 88
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108350
ESS Laboratory Sample ID: 1108350-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SEP
Prepared: 8/25/11 15:30

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1221	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1232	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1242	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1248	**5.11** (0.281)		5	08/26/11 16:09		CH12435
Aroclor 1254	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1260	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1262	ND (0.0563)		1	08/26/11 15:32		CH12435
Aroclor 1268	ND (0.0563)		1	08/26/11 15:32		CH12435

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*83 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: Bottom Sample 6 0.5-0.75
Date Sampled: 08/22/11 15:30
Percent Solids: 86
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108350
ESS Laboratory Sample ID: 1108350-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SEP
Prepared: 8/25/11 17:30

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1221	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1232	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1242	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1248	**1.56** (0.297)		5	08/26/11 16:28		CH12435
Aroclor 1254	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1260	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1262	ND (0.0593)		1	08/26/11 15:50		CH12435
Aroclor 1268	ND (0.0593)		1	08/26/11 15:50		CH12435

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade

ESS Laboratory Work Order: 1108350

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CH12435 - 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	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0226*		mg/kg wet	*0.02500*		*91*	*30-150*			
LCS										
Aroclor 1016	0.546	0.0500	mg/kg wet	0.5000		109	40-140			
Aroclor 1260	0.564	0.0500	mg/kg wet	0.5000		113	40-140			
Surrogate: Decachlorobiphenyl	*0.0231*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0216*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0236*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
LCS Dup										
Aroclor 1016	0.545	0.0500	mg/kg wet	0.5000		109	40-140	0.1	50	
Aroclor 1260	0.559	0.0500	mg/kg wet	0.5000		112	40-140	0.8	50	
Surrogate: Decachlorobiphenyl	*0.0230*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0215*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0234*		mg/kg wet	*0.02500*		*94*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108350

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 GRS Upgrade

ESS Laboratory Work Order: 1108350

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 PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

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

ESS Project ID: 11080350
Date Project Due: 8/26/11
Days For Project: 1 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **5.4**		16. Are ESS labels on correct containers?	Yes|No
Iced With: **Icepacks**		17. Were samples received intact?	Yes|No
6. Was COC included with samples?	Yes	ESS Sample IDs:	_____
7. Was COC signed and dated by client?	Yes	Sub Lab:	_____
8. Does the COC match the sample	Yes	Analysis:	_____
9. Is COC complete and correct?	Yes	TAT:	_____

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP

Completed By: CAD Date/Time: 8/25/11
Reviewed By: MK Date/Time: 8/25/11

1108350

Page 2 of 2

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 48 HR
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: ~~1108292~~

Electronic Deliverable Yes ___ No ___

Format: Excel ___ Access ___ PDF ___ Other _____

Co. Name: G2A GeoEnvironmental Inc

Project # ~~43654-30~~ 43654

Project Name (20 Char. or less): Tidewater Gas Upgrade

Contact Person: M Kilpatrick

Address: 530 Broadway

City State Zip

PO#

Telephone # Fax # Email Address

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 8082A*	Hold For Possible 8082A
—	8/22/11	15:00			S	Bottom Sample 4, 0.25 - 0.5'					X
—		↓			S	0.5' - 0.75'					X
05		15:15			S	Bottom Sample 5 0 - 0.25'				X	
—					S	" 0.25' - 0.5'					X
—					S	" 0.5' - 0.75'					X
06		15:30			S	Bottom Sample 6 0 - 0.25				X	
01 —					S	" " 0.25 - 0.5					X
02 —					S	" " 0.5 - 0.75					X
07		15:40			S	Sidewall Sample 1				X	
08		15:50			S	Sidewall Samp 2				X	
09					S	Blind Duplicate BD 082211				X	

Please release these 2 samples for analysis. If possible with 24 TAT.

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 X Yes ___ No

Seals Intact ___ Yes ___ No NA: X

Cooler Temp: 5.4 / Ice

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: SAME

Comments: SAME

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/22/11 1600		8/22/11 1800		8/22/11 1730		8/22/11 1700
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/28/04 A

CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654-30)
ESS Laboratory Work Order Number: 1108357

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: 1108357

SAMPLE RECEIPT

The following samples were received on August 25, 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.

Lab Number	SampleName	Matrix	Analysis
1108357-01	CSCS-3	Solid	8082
1108357-02	CSCS-4	Solid	8082
1108357-03	CSCS-5	Solid	8082
1108357-04	CSCS-6	Solid	8082

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1108357

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: CSCS-3
Date Sampled: 08/25/11 00:00
Percent Solids: N/A
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108357
ESS Laboratory Sample ID: 1108357-01
Sample Matrix: Solid
Units: mg/kg wet
Analyst: SEP
Prepared: 8/25/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1221	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1232	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1242	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1248	**0.198** (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1254	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1260	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1262	ND (0.185)		1	08/26/11 14:16		CH12435
Aroclor 1268	ND (0.185)		1	08/26/11 14:16		CH12435

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*68 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: CSCS-4
Date Sampled: 08/25/11 00:00
Percent Solids: N/A
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108357
ESS Laboratory Sample ID: 1108357-02
Sample Matrix: Solid
Units: mg/kg wet
Analyst: SEP
Prepared: 8/25/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1221	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1232	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1242	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1248	**3.68** (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1254	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1260	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1262	ND (0.192)		1	08/26/11 14:35		CH12435
Aroclor 1268	ND (0.192)		1	08/26/11 14:35		CH12435

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*80 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: CSCS-5
Date Sampled: 08/25/11 00:00
Percent Solids: N/A
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108357
ESS Laboratory Sample ID: 1108357-03
Sample Matrix: Solid
Units: mg/kg wet
Analyst: SEP
Prepared: 8/25/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1221	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1232	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1242	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1248	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1254	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1260	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1262	ND (0.139)		1	08/26/11 14:54		CH12435
Aroclor 1268	ND (0.139)		1	08/26/11 14:54		CH12435

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*87 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: CSCS-6
Date Sampled: 08/25/11 00:00
Percent Solids: N/A
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 3540

ESS Laboratory Work Order: 1108357
ESS Laboratory Sample ID: 1108357-04
Sample Matrix: Solid
Units: mg/kg wet
Analyst: SEP
Prepared: 8/25/11 17:30

All methods used are in accordance with 40 CFR 136.

8082 Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1221	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1232	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1242	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1248	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1254	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1260	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1262	ND (0.182)		1	08/26/11 15:13		CH12435
Aroclor 1268	ND (0.182)		1	08/26/11 15:13		CH12435

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*100 %*		*30-150*

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1108357

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch CH12435 - 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	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0226*		mg/kg wet	*0.02500*		*91*	*30-150*			
LCS										
Aroclor 1016	0.546	0.0500	mg/kg wet	0.5000		109	40-140			
Aroclor 1260	0.564	0.0500	mg/kg wet	0.5000		113	40-140			
Surrogate: Decachlorobiphenyl	*0.0231*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0216*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0236*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
LCS Dup										
Aroclor 1016	0.545	0.0500	mg/kg wet	0.5000		109	40-140	0.1	50	
Aroclor 1260	0.559	0.0500	mg/kg wet	0.5000		112	40-140	0.8	50	
Surrogate: Decachlorobiphenyl	*0.0230*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0215*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0234*		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: 1108357

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: 1108357

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 PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

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

ESS Project ID: 11080357
Date Project Due: 8/29/11
Days For Project: 2 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **5.1**		16. Are ESS labels on correct containers?	Yes No
Iced With: **Ice**		17. Were samples received intact?	Yes No
6. Was COC included with samples?	Yes	ESS Sample IDs:	
7. Was COC signed and dated by client?	Yes	Sub Lab:	
8. Does the COC match the sample	Yes	Analysis:	
9. Is COC complete and correct?	Yes	TAT:	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?:_____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP
3	Yes	8 oz Soil Jar	1	NP
4	Yes	8 oz Soil Jar	1	NP

Completed By: MK Date/Time: 8/25/11
Reviewed By: VM Date/Time: 8/25/11

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 2 DAY
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: RI

ESS LAB PROJECT ID: 1108357

Electronic Deliverable Yes ✓ No ___

Format: Excel ✓ Access ___ PDF ✓ Other ___

Co. Name: GZA	Project #: 43654-30	Project Name (20 Char. or less): TIDEWATER	
Contact Person: MEG KILPATRICK	Address: 530 BROADWAY		
City: PROVIDENCE	State: RI	Zip: 02909	PO#:
Telephone #: 401-421-4140	Fax #: –	Email Address: meg.kilpatrick@gza.com	

Write Required Analysis: 8082 / 3540 PCBs

ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8082/3540 PCBs
01	8/25/11				C	CSCS-3	–	1	G	✓
02	↓				C	CSCS-4	–	1	G	✓
03	↓				C	CSCS-5	–	1	G	✓
04	↓				C	CSCS-6	–	1	G	✓
	~~↓~~				~~S~~	~~SCS-A 0-3"~~	~~–~~	~~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 X Yes ___ No

Seals Intact ___ Yes ___ No NA: X

Cooler Temp: 5.1 ice

Internal Use Only
[ ] Pickup
[ ] Technicians ___

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- ___

Sampled by: SDN

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Sophie Nad[illegible]	8/25/11 1450	Maud Koema[illegible]	8/25/11 1650				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

CERTIFICATE OF ANALYSIS

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

RE: Tidewater GH (43654.30)
ESS Laboratory Work Order Number: 1108364

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.

Subcontracted Analyses

TestAmerica Laboratories, Inc. - Westfield, MA	PCB

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1108364

SAMPLE RECEIPT

The following samples were received on August 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.

Lab Number	SampleName	Matrix	Analysis
1108364-01	SCS-A 0-3 Inches	Soil	§
1108364-02	CSCS-7 0-1 Inches	Solid	§
1108364-03	CSCS-8 0-1 Inches	Solid	§

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1108364

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: SCS-A 0-3 Inches
Date Sampled: 08/26/11 10:00

ESS Laboratory Work Order: 1108364
ESS Laboratory Sample ID: 1108364-01
Sample Matrix: Soil
Units: mg/kg

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Polychlorinated Biphenyls	**See Attached** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: CSCS-7 0-1 Inches
Date Sampled: 08/26/11 10:45

ESS Laboratory Work Order: 1108364
ESS Laboratory Sample ID: 1108364-02
Sample Matrix: Solid
Units: mg/kg

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Polychlorinated Biphenyls	**See Attached** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GH
Client Sample ID: CSCS-8 0-1 Inches
Date Sampled: 08/26/11 10:45

ESS Laboratory Work Order: 1108364
ESS Laboratory Sample ID: 1108364-03
Sample Matrix: Solid
Units: mg/kg

All methods used are in accordance with 40 CFR 136.

Subcontracted Analysis

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Polychlorinated Biphenyls	**See Attached** (N/A)							

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1108364

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1108364

Notes and Definitions

Z-08	See Attached
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: 1108364

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 PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Westfield
Westfield Executive Park
53 Southampton Road
Westfield, MA 01085
Tel: (413)572-4000

TestAmerica Job ID: 360-36029-1
Client Project/Site: 1108364

For:
ESS Laboratory
185 Frances Ave.
Cranston, Rhode Island 02910

Attn: Ms. Elizabeth Ouk

Authorized for release by:
09/02/2011 10:50:27 AM
Joe Chimi
Report Production Representative
joe.chimi@testamericainc.com

Designee for

Becky Mason
Project Manager II
becky.mason@testamericainc.com

Table of Contents

Job ID: 360-36029-1

Laboratory: TestAmerica Westfield

Narrative

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/31/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.8 C.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples 1108364-01 (360-36029-1), 1108364-02 (360-36029-2) and 1108364-03 (360-36029-3) were analyzed for polychlorinated biphenyls (PCBs) in accordance with SW846 8082. The samples were prepared on 08/31/2011 and analyzed on 09/01/2011.

PCB-1260 failed the recovery criteria high for LCS 360-79312/2-A and LCSD 360-79312/3-A (secondary column only). Refer to the QC report for details.

PCB-1260 failed the criteria high for the opening continuing calibration verification (CCV) (secondary column only).

No other difficulties were encountered during the PCBs analyses.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS

For samples 1108364-01 (360-36029-1), 1108364-02 (360-36029-2) and 1108364-03 (360-36029-3), the laboratory assumes 100% solids. The percent solids results were entered on 09/01/2011.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Client Sample ID: 1108364-01 — Lab Sample ID: 360-36029-1

No Detections

Client Sample ID: 1108364-02 — Lab Sample ID: 360-36029-2

No Detections

Client Sample ID: 1108364-03 — Lab Sample ID: 360-36029-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1248	190		98		ug/Kg	1	☼	8082	Total/NA

Method Summary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Method	Method Description	Protocol	Laboratory
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL WFD
Moisture	Percent Moisture	EPA	TAL WFD

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

Sample Summary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
360-36029-1	1108364-01	Solid	08/26/11 10:00	08/31/11 16:00
360-36029-2	1108364-02	Solid	08/26/11 10:45	08/31/11 16:00
360-36029-3	1108364-03	Solid	08/26/11 10:45	08/31/11 16:00

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: 1108364-01
Date Collected: 08/26/11 10:00
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-1
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1221	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1232	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1242	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1248	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1254	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1260	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1262	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1
PCB-1268	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 14:14	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*115*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:14*	*1*
DCB Decachlorobiphenyl	*121*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:14*	*1*
Tetrachloro-m-xylene	*108*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:14*	*1*
Tetrachloro-m-xylene	*100*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:14*	*1*

Client Sample ID: 1108364-02
Date Collected: 08/26/11 10:45
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-2
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1221	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1232	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1242	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1248	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1254	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1260	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1262	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1
PCB-1268	ND		94		ug/Kg	☼	08/31/11 19:00	09/01/11 14:36	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*107*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:36*	*1*
DCB Decachlorobiphenyl	*101*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:36*	*1*
Tetrachloro-m-xylene	*87*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:36*	*1*
Tetrachloro-m-xylene	*100*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:36*	*1*

Client Sample ID: 1108364-03
Date Collected: 08/26/11 10:45
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-3
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1221	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1232	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1242	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1248	**190**		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1254	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1260	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1
PCB-1262	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: 1108364-03
Date Collected: 08/26/11 10:45
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-3
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1268	ND		98		ug/Kg	☼	08/31/11 19:00	09/01/11 14:57	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*111*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:57*	*1*
DCB Decachlorobiphenyl	*116*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:57*	*1*
Tetrachloro-m-xylene	*116*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:57*	*1*
Tetrachloro-m-xylene	*121*		*30 - 150*	*08/31/11 19:00*	*09/01/11 14:57*	*1*

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

General Chemistry

Client Sample ID: 1108364-01
Date Collected: 08/26/11 10:00
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-1
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.00		1.0		%			09/01/11 15:52	1
Percent Solids	100		1.0		%			09/01/11 15:52	1

Client Sample ID: 1108364-02
Date Collected: 08/26/11 10:45
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-2
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.00		1.0		%			09/01/11 15:52	1
Percent Solids	100		1.0		%			09/01/11 15:52	1

Client Sample ID: 1108364-03
Date Collected: 08/26/11 10:45
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36029-3
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.00		1.0		%			09/01/11 15:55	1
Percent Solids	100		1.0		%			09/01/11 15:55	1

Definitions/Glossary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit (Dioxin)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

GC Semi VOA

Prep Batch: 79312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36029-1	1108364-01	Total/NA	Solid	3540C	
360-36029-2	1108364-02	Total/NA	Solid	3540C	
360-36029-3	1108364-03	Total/NA	Solid	3540C	
LCS 360-79312/2-A	Lab Control Sample	Total/NA	Solid	3540C	
LCSD 360-79312/3-A	Lab Control Sample Dup	Total/NA	Solid	3540C	
MB 360-79312/1-A	Method Blank	Total/NA	Solid	3540C	

Analysis Batch: 79341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36029-1	1108364-01	Total/NA	Solid	8082	79312
360-36029-2	1108364-02	Total/NA	Solid	8082	79312
360-36029-3	1108364-03	Total/NA	Solid	8082	79312
LCS 360-79312/2-A	Lab Control Sample	Total/NA	Solid	8082	79312
LCSD 360-79312/3-A	Lab Control Sample Dup	Total/NA	Solid	8082	79312
MB 360-79312/1-A	Method Blank	Total/NA	Solid	8082	79312

General Chemistry

Analysis Batch: 79394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36029-1	1108364-01	Total/NA	Solid	Moisture	
360-36029-2	1108364-02	Total/NA	Solid	Moisture	
360-36029-3	1108364-03	Total/NA	Solid	Moisture	

Surrogate Summary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(30-150)	(30-150)	(30-150)	(30-150)
360-36029-1	1108364-01	115	121	108	100
360-36029-2	1108364-02	107	101	87	100
360-36029-3	1108364-03	111	116	116	121
LCS 360-79312/2-A	Lab Control Sample	122	149	99	94
LCSD 360-79312/3-A	Lab Control Sample Dup	118	146	101	97
MB 360-79312/1-A	Method Blank	106	126	85	82

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 360-79312/1-A
Matrix: Solid
Analysis Batch: 79341

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79312

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1221	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1232	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1242	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1248	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1254	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1260	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1262	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1268	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*106*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*
DCB Decachlorobiphenyl	*126*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*
Tetrachloro-m-xylene	*85*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*
Tetrachloro-m-xylene	*82*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*

Lab Sample ID: LCS 360-79312/2-A
Matrix: Solid
Analysis Batch: 79341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79312

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
PCB-1016			500	596		ug/Kg		119	40 - 140		
PCB-1260			500	823	*	ug/Kg		165	40 - 140		

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*122*		*30 - 150*
DCB Decachlorobiphenyl	*149*		*30 - 150*
Tetrachloro-m-xylene	*99*		*30 - 150*
Tetrachloro-m-xylene	*94*		*30 - 150*

Lab Sample ID: LCSD 360-79312/3-A
Matrix: Solid
Analysis Batch: 79341

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79312

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
PCB-1016			500	627		ug/Kg		125	40 - 140	5	30
PCB-1260			500	851	*	ug/Kg		170	40 - 140	3	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*118*		*30 - 150*
DCB Decachlorobiphenyl	*146*		*30 - 150*
Tetrachloro-m-xylene	*101*		*30 - 150*
Tetrachloro-m-xylene	*97*		*30 - 150*

Lab Chronicle

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Client Sample ID: 1108364-01 — Lab Sample ID: 360-36029-1

Date Collected: 08/26/11 10:00 — **Matrix: Solid**
Date Received: 08/31/11 16:00 — **Percent Solids: 100.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			79312	08/31/11 19:00	MJM	TAL WFD
Total/NA	Analysis	8082		1	79341	09/01/11 14:14	BRB	TAL WFD
Total/NA	Analysis	Moisture		1	79394	09/01/11 15:52	OG	TAL WFD

Client Sample ID: 1108364-02 — Lab Sample ID: 360-36029-2

Date Collected: 08/26/11 10:45 — **Matrix: Solid**
Date Received: 08/31/11 16:00 — **Percent Solids: 100.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			79312	08/31/11 19:00	MJM	TAL WFD
Total/NA	Analysis	8082		1	79341	09/01/11 14:36	BRB	TAL WFD
Total/NA	Analysis	Moisture		1	79394	09/01/11 15:52	OG	TAL WFD

Client Sample ID: 1108364-03 — Lab Sample ID: 360-36029-3

Date Collected: 08/26/11 10:45 — **Matrix: Solid**
Date Received: 08/31/11 16:00 — **Percent Solids: 100.0**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			79312	08/31/11 19:00	MJM	TAL WFD
Total/NA	Analysis	8082		1	79341	09/01/11 14:57	BRB	TAL WFD
Total/NA	Analysis	Moisture		1	79394	09/01/11 15:55	OG	TAL WFD

Laboratory References:
TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

Certification Summary

Client: ESS Laboratory
Project/Site: 1108364

TestAmerica Job ID: 360-36029-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Westfield	Connecticut	State Program	1	PH-0494
TestAmerica Westfield	Maine	State Program	1	MA00014
TestAmerica Westfield	Massachusetts	State Program	1	M-MA014
TestAmerica Westfield	New Hampshire	NELAC	1	2539
TestAmerica Westfield	New York	NELAC	2	10843
TestAmerica Westfield	North Carolina	North Carolina DENR	4	647
TestAmerica Westfield	Rhode Island	State Program	1	LAO00057
TestAmerica Westfield	Vermont	State Program	1	VT-10843

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

State Accreditation Matrix

Method Name	Description	State where **Primary** Accreditation is Carried			
		New Hampshire (NELAC)	Mass	Conn	North Carolina
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)	NP			
SM 4500 Cl F	Chlorine, Residual		NP		
SM 9215E	Heterotrophic Plate Count (SimPlate)		P		
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP		
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P		
SM 9224	Coliforms, Total, and E.Coli (Enumeration)		P		
1103.1	E.coli		ambient/ source		
Enterolert	Enterococcus				
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P		
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P		
6010B	Metals (ICP)(list upon request)	NP/SW			
245.1	Mercury (CVAA)	NP/P	NP		
7470A	Mercury (CVAA)	NP			
7471A	Mercury (CVAA)	SW			
SM 2340B	Total Hardness (as CaCO3) by calculation	NP/P	NP		
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P			
3010A	Preparation, Total Metals	NP/P			
3020A	Preparation, Total Metals	NP/P/SW			
3050B	Preparation, Metals	SW			
504.1	EDB, DBCP and 1,2,3-TCP (GC)	P	P		
608	Organochlorine Pest/PCBs (list upon request)	NP	NP		
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP	NP		
3546	Microwave Extraction	SW			
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP			
3550B	Ultrasonic Extraction	SW			
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW			
8082	PCBs by Gas Chromatography(list upon request)	NP/SW			
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW			
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW	
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)				NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P		
524.2	Trihalomethane compounds	P	P		
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP		
5035	Closed System Purge and Trap	SW			
5030B	Purge and Trap	NP			
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW			
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)				NP/SW
180.1	Turbidity, Nephelometric	P	P		
300	Anions, Ion Chromatography	NP/P	NP/P		
410.4	COD	NP	NP		
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW			
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP		
7196A	Chromium, Hexavalent	NP/SW			
9012A	Cyanide, Total and/or Amenable	NP/SW			
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP			
9045C	pH	SW			
L107041C	Nitrogen, Nitrate	NP	P		
L107-06-1B	Nitrogen Ammonia	NP	NP		
L204001A CN	Cyanide, Total	P	NP/P		
L210-001A	Phenolics, Total Recoverable	NP	NP		
SM 2320B	Alkalinity	NP/P	NP/P		
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P		
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P		
SM 2540D	Solids, Total Suspended (TSS)	NP	NP		
SM 3500 CR D	Chromium, Hexavalent	NP			
SM 4500 H+ B	pH	NP/P	NP/P		
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P		
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP		
SM 4500 P E	Phosphorus, Total	NP	NP		
SM 4500 S2 D	Sulfide, Total	NP			
SM 5210B	BOD, 5-Day	NP	NP		
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP		

Not all organic compounds are accreditied under NELAC
For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory
The lab carries additional accreditations with several states. This is the laboratories typcial listing but is subject to change based on the laboratories current certification standing.

Login Sample Receipt Checklist

Client: ESS Laboratory

Job Number: 360-36029-1

Login Number: 36029

List Source: TestAmerica Westfield

List Number: 1

Creator: Beaumier, Janine E

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Sample and Cooler Receipt Checklist

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

ESS Project ID: 11080364
Date Project Due: 8/30/11
Days For Project: 2 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present?	* No	10. Are the samples properly preserved?	Yes
Air No.:		11. Proper sample containers used?	Yes
2. Were Custody Seals Present?	No	12. Any air bubbles in the VOA vials?	N/A
3. Were Custody Seals Intact?	N/A	13. Holding times exceeded?	No
4. Is Radiation count < 100 CPM?	Yes	14. Sufficient sample volumes?	Yes
5. Is a cooler present?	Yes	15. Any Subcontracting needed?	No
Cooler Temp: **16.1**		16. Are ESS labels on correct containers?	**Yes|No**
Iced With: **Ice**		17. Were samples received intact?	**Yes|No**
6. Was COC included with samples?	Yes	ESS Sample IDs: _____	
7. Was COC signed and dated by client?	Yes	Sub Lab: _____	
8. Does the COC match the sample	Yes	Analysis: _____	
9. Is COC complete and correct?	Yes	TAT: _____	

18. Was there need to call project manager to discuss status? If yes, please explain.

_____

_____

_____

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	8 oz Soil Jar	1	NP
2	Yes	8 oz Soil Jar	1	NP
3	Yes	8 oz Soil Jar	1	NP

Completed By: CLD Date/Time: 8/26/11

Reviewed By: ED Date/Time: 8/26/11

Test America.

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_____ of_____

Turn Time ___ Standard Other 48 TAT
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

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

Co. Name	Project #	Project Name (20 Char. or less)
	1108364	

Contact Person: Liz Dick | Address:

City | State | Zip | PO#: 1108364

Telephone #: 401-481-8024 | Fax # | Email Address: massfirefighter2@hotmail.com liz02909@yahoo.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: VOC 3540
	08-26-11	10:00			S	1108364 – 01	1	1	A, G	X
	08-26-11	10:45			SO	1108364 – 02	1	1	A, G	X
	08-26-11	10:45			SO	1108364 – 03	1	1	A, G	X

8/31/11

Container Type: P-Poly G-Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wasre Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Present: X Yes ___ No
Seals Intact: ___ Yes ___ No NA: X
Cooler Temp: 3.8°C

Internal Use Only
[ ] Pickup
[ ] Technicians _____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by:

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/31/11 1240	M.C	8/31/11 12:40	M.C	8/31/11 1410		8/31/11 1410
	8-31-11 16:00		8/31/11 16:00				

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

Page 18 of 18

09/02/2011
Page 28 of 29

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 2 DAY
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: RI

ESS LAB PROJECT ID: 116836 4

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

Co. Name	Project #	Project Name (20 Char. or less)
GZA	43654-30	TIDEWATER

Contact Person	Address
MEG KILPATRICK	530 BROADWAY

City	State	Zip	PO#
PROVIDENCE,	RI	02909	

Telephone #	Fax #	Email Address
401-421-4140		meg.kilpatrick@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: PCBs (3540)
01	8/26/11	10:00			S	SCS-A 0-3"	1	1	G	✓
02	8/26/11	10:45			C	CSCS-7 0-1"	1	1	G	✓
03	8/26/11	10:45			C	CSCS-8 0-1"	1	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

Seals Intact ___ Yes ___ No NA: ___ [ ] Pickup

Cooler Temp: 16.1 on ice [ ] Technicians ___

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: SDN

Comments: EMAIL RESULTS TO Sophia.Narkiewicz@gza.com ALSO

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Sophia Narkiewicz	8/26/11 10:50	Lynch Daly	8/26/11 11:59				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

CERTIFICATE OF ANALYSIS

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

RE: Tidewater GRS Upgrade (43654.0)
ESS Laboratory Work Order Number: 1108375

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.

Subcontracted Analyses

TestAmerica Laboratories, Inc. - Westfield, MA	PCB

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade

ESS Laboratory Work Order: 1108375

SAMPLE RECEIPT

The following samples were received on August 31, 2011 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	SampleName	Matrix	Analysis
1108375-01	CSCS-4A 1 to 2 inches	Soil	§
1108375-02	CSCS-9	Soil	§
1108375-03	CSCS-10	Soil	§

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108375

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 GRS Upgrade
Client Sample ID: CSCS-4A 1 to 2 inches
Date Sampled: 08/30/11 11:15

ESS Laboratory Work Order: 1108375
ESS Laboratory Sample ID: 1108375-01
Sample Matrix: Soil
Units: mg/kg

Subcontracted Analysis

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Polychlorinated Biphenyls	**See Attached** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: CSCS-9
Date Sampled: 08/30/11 11:20

ESS Laboratory Work Order: 1108375
ESS Laboratory Sample ID: 1108375-02
Sample Matrix: Soil
Units: mg/kg

Subcontracted Analysis

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Polychlorinated Biphenyls	**See Attached** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade
Client Sample ID: CSCS-10
Date Sampled: 08/30/11 11:30

ESS Laboratory Work Order: 1108375
ESS Laboratory Sample ID: 1108375-03
Sample Matrix: Soil
Units: mg/kg

Subcontracted Analysis

Analyte	Results (MRL)	Method	Limit	DF	Analyst	Analyzed	Sequence	Batch
Polychlorinated Biphenyls	**See Attached** (N/A)							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade

ESS Laboratory Work Order: 1108375

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Tidewater GRS Upgrade ESS Laboratory Work Order: 1108375

Notes and Definitions

Z-08	See Attached
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 GRS Upgrade

ESS Laboratory Work Order: 1108375

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 PotableWater, Solid and Hazardous Waste: 2424
http://www4.egov.nh.gov/des/nhelap/namesearch.asp

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Westfield
Westfield Executive Park
53 Southampton Road
Westfield, MA 01085
Tel: (413)572-4000

TestAmerica Job ID: 360-36037-1
Client Project/Site: 1108375

For:
ESS Laboratory
185 Frances Ave.
Cranston, Rhode Island 02910

Attn: Ms. Elizabeth Ouk

Authorized for release by:
09/02/2011 11:04:13 AM
Joe Chimi
Report Production Representative
joe.chimi@testamericainc.com

Designee for

Becky Mason
Project Manager II
becky.mason@testamericainc.com

Table of Contents

Job ID: 360-36037-1

Laboratory: TestAmerica Westfield

Narrative

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/31/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.8 C.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples 1108375-01 (360-36037-1), 1108375-02 (360-36037-2) and 1108375-03 (360-36037-3) were analyzed for polychlorinated biphenyls (PCBs) in accordance with SW846 8082. The samples were prepared on 08/31/2011 and analyzed on 09/01/2011.

PCB-1260 failed the recovery criteria high for LCS 360-79312/2-A and LCSD 360-79312/3-A (secondary column only). Refer to the QC report for details.

PCB-1260 failed the criteria high for the opening continuing calibration verification (CCV) (secondary column only).

No other difficulties were encountered during the PCBs analyses.

All other quality control parameters were within the acceptance limits.

PERCENT SOLIDS

For samples 1108375-01 (360-36037-1), 1108375-02 (360-36037-2) and 1108375-03 (360-36037-3), the laboratory assumes 100% solids. The percent solids results were entered on 09/01/2011.

All quality control parameters were within the acceptance limits.

Detection Summary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Client Sample ID: 1108375-01 — Lab Sample ID: 360-36037-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1248	560		95		ug/Kg	1	☼	8082	Total/NA

Client Sample ID: 1108375-02 — Lab Sample ID: 360-36037-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1248	880		97		ug/Kg	1	☼	8082	Total/NA
PCB-1254	290		97		ug/Kg	1	☼	8082	Total/NA

Client Sample ID: 1108375-03 — Lab Sample ID: 360-36037-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1248	230		100		ug/Kg	1	☼	8082	Total/NA
PCB-1254	140		100		ug/Kg	1	☼	8082	Total/NA

Method Summary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Method	Method Description	Protocol	Laboratory
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL WFD
Moisture	Percent Moisture	EPA	TAL WFD

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

Sample Summary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
360-36037-1	1108375-01	Solid	08/30/11 11:15	08/31/11 16:00
360-36037-2	1108375-02	Solid	08/30/11 11:20	08/31/11 16:00
360-36037-3	1108375-03	Solid	08/30/11 11:30	08/31/11 16:00

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: 1108375-01
Date Collected: 08/30/11 11:15
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-1
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1221	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1232	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1242	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1248	**560**		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1254	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1260	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1262	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1
PCB-1268	ND		95		ug/Kg	☼	08/31/11 19:00	09/01/11 15:19	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*78*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:19*	*1*
DCB Decachlorobiphenyl	*77*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:19*	*1*
Tetrachloro-m-xylene	*59*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:19*	*1*
Tetrachloro-m-xylene	*69*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:19*	*1*

Client Sample ID: 1108375-02
Date Collected: 08/30/11 11:20
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-2
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1221	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1232	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1242	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1248	**880**		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1254	**290**		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1260	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1262	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1
PCB-1268	ND		97		ug/Kg	☼	08/31/11 19:00	09/01/11 15:41	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*106*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:41*	*1*
DCB Decachlorobiphenyl	*112*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:41*	*1*
Tetrachloro-m-xylene	*103*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:41*	*1*
Tetrachloro-m-xylene	*102*		*30 - 150*	*08/31/11 19:00*	*09/01/11 15:41*	*1*

Client Sample ID: 1108375-03
Date Collected: 08/30/11 11:30
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-3
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1221	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1232	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1242	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1248	**230**		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1254	**140**		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1260	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1
PCB-1262	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: 1108375-03
Date Collected: 08/30/11 11:30
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-3
Matrix: Solid
Percent Solids: 100.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1268	ND		100		ug/Kg	☼	08/31/11 19:00	09/01/11 16:02	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*108*		*30 - 150*	*08/31/11 19:00*	*09/01/11 16:02*	*1*
DCB Decachlorobiphenyl	*105*		*30 - 150*	*08/31/11 19:00*	*09/01/11 16:02*	*1*
Tetrachloro-m-xylene	*106*		*30 - 150*	*08/31/11 19:00*	*09/01/11 16:02*	*1*
Tetrachloro-m-xylene	*103*		*30 - 150*	*08/31/11 19:00*	*09/01/11 16:02*	*1*

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

General Chemistry

Client Sample ID: 1108375-01
Date Collected: 08/30/11 11:15
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-1
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.00		1.0		%			09/01/11 15:52	1
Percent Solids	100		1.0		%			09/01/11 15:52	1

Client Sample ID: 1108375-02
Date Collected: 08/30/11 11:20
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-2
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.00		1.0		%			09/01/11 15:52	1
Percent Solids	100		1.0		%			09/01/11 15:52	1

Client Sample ID: 1108375-03
Date Collected: 08/30/11 11:30
Date Received: 08/31/11 16:00

Lab Sample ID: 360-36037-3
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.00		1.0		%			09/01/11 15:52	1
Percent Solids	100		1.0		%			09/01/11 15:52	1

Definitions/Glossary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit (Dioxin)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

GC Semi VOA

Prep Batch: 79312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36037-1	1108375-01	Total/NA	Solid	3540C	
360-36037-2	1108375-02	Total/NA	Solid	3540C	
360-36037-3	1108375-03	Total/NA	Solid	3540C	
LCS 360-79312/2-A	Lab Control Sample	Total/NA	Solid	3540C	
LCSD 360-79312/3-A	Lab Control Sample Dup	Total/NA	Solid	3540C	
MB 360-79312/1-A	Method Blank	Total/NA	Solid	3540C	

Analysis Batch: 79341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36037-1	1108375-01	Total/NA	Solid	8082	79312
360-36037-2	1108375-02	Total/NA	Solid	8082	79312
360-36037-3	1108375-03	Total/NA	Solid	8082	79312
LCS 360-79312/2-A	Lab Control Sample	Total/NA	Solid	8082	79312
LCSD 360-79312/3-A	Lab Control Sample Dup	Total/NA	Solid	8082	79312
MB 360-79312/1-A	Method Blank	Total/NA	Solid	8082	79312

General Chemistry

Analysis Batch: 79394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
360-36037-1	1108375-01	Total/NA	Solid	Moisture	
360-36037-2	1108375-02	Total/NA	Solid	Moisture	
360-36037-3	1108375-03	Total/NA	Solid	Moisture	

Surrogate Summary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCB1	DCB2	TCX1	TCX2
Lab Sample ID	Client Sample ID	(30-150)	(30-150)	(30-150)	(30-150)
360-36037-1	1108375-01	78	77	59	69
360-36037-2	1108375-02	106	112	103	102
360-36037-3	1108375-03	108	105	106	103
LCS 360-79312/2-A	Lab Control Sample	122	149	99	94
LCSD 360-79312/3-A	Lab Control Sample Dup	118	146	101	97
MB 360-79312/1-A	Method Blank	106	126	85	82

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 360-79312/1-A
Matrix: Solid
Analysis Batch: 79341

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 79312

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1221	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1232	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1242	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1248	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1254	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1260	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1262	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1
PCB-1268	ND		100		ug/Kg		08/31/11 19:00	09/01/11 13:09	1

Surrogate	*MB % Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*106*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*
DCB Decachlorobiphenyl	*126*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*
Tetrachloro-m-xylene	*85*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*
Tetrachloro-m-xylene	*82*		*30 - 150*	*08/31/11 19:00*	*09/01/11 13:09*	*1*

Lab Sample ID: LCS 360-79312/2-A
Matrix: Solid
Analysis Batch: 79341

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 79312

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
PCB-1016			500	596		ug/Kg		119	40 - 140		
PCB-1260			500	823	*	ug/Kg		165	40 - 140		

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*122*		*30 - 150*
DCB Decachlorobiphenyl	*149*		*30 - 150*
Tetrachloro-m-xylene	*99*		*30 - 150*
Tetrachloro-m-xylene	*94*		*30 - 150*

Lab Sample ID: LCSD 360-79312/3-A
Matrix: Solid
Analysis Batch: 79341

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 79312

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
PCB-1016			500	627		ug/Kg		125	40 - 140	5	30
PCB-1260			500	851	*	ug/Kg		170	40 - 140	3	30

Surrogate	*LCSD % Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*118*		*30 - 150*
DCB Decachlorobiphenyl	*146*		*30 - 150*
Tetrachloro-m-xylene	*101*		*30 - 150*
Tetrachloro-m-xylene	*97*		*30 - 150*

Lab Chronicle

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Client Sample ID: 1108375-01

Lab Sample ID: 360-36037-1

Date Collected: 08/30/11 11:15
Matrix: Solid
Date Received: 08/31/11 16:00
Percent Solids: 100.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			79312	08/31/11 19:00	MJM	TAL WFD
Total/NA	Analysis	8082		1	79341	09/01/11 15:19	BRB	TAL WFD
Total/NA	Analysis	Moisture		1	79394	09/01/11 15:52	OG	TAL WFD

Client Sample ID: 1108375-02

Lab Sample ID: 360-36037-2

Date Collected: 08/30/11 11:20
Matrix: Solid
Date Received: 08/31/11 16:00
Percent Solids: 100.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			79312	08/31/11 19:00	MJM	TAL WFD
Total/NA	Analysis	8082		1	79341	09/01/11 15:41	BRB	TAL WFD
Total/NA	Analysis	Moisture		1	79394	09/01/11 15:52	OG	TAL WFD

Client Sample ID: 1108375-03

Lab Sample ID: 360-36037-3

Date Collected: 08/30/11 11:30
Matrix: Solid
Date Received: 08/31/11 16:00
Percent Solids: 100.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Prep	3540C			79312	08/31/11 19:00	MJM	TAL WFD
Total/NA	Analysis	8082		1	79341	09/01/11 16:02	BRB	TAL WFD
Total/NA	Analysis	Moisture		1	79394	09/01/11 15:52	OG	TAL WFD

Laboratory References:
TAL WFD = TestAmerica Westfield, Westfield Executive Park, 53 Southampton Road, Westfield, MA 01085, TEL (413)572-4000

Certification Summary

Client: ESS Laboratory
Project/Site: 1108375

TestAmerica Job ID: 360-36037-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Westfield	Connecticut	State Program	1	PH-0494
TestAmerica Westfield	Maine	State Program	1	MA00014
TestAmerica Westfield	Massachusetts	State Program	1	M-MA014
TestAmerica Westfield	New Hampshire	NELAC	1	2539
TestAmerica Westfield	New York	NELAC	2	10843
TestAmerica Westfield	North Carolina	North Carolina DENR	4	647
TestAmerica Westfield	Rhode Island	State Program	1	LAO00057
TestAmerica Westfield	Vermont	State Program	1	VT-10843

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

State Accreditation Matrix

Method Name	Description	State where **Primary** Accreditation is Carried			
		New Hampshire (NELAC)	Mass	Conn	North Carolina
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)	NP			
SM 4500 Cl F	Chlorine, Residual		NP		
SM 9215E	Heterotrophic Plate Count (SimPlate)		P		
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP		
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P		
SM 9224	Coliforms, Total, and E.Coli (Enumeration)		P		
1103.1	E.coli		ambient/ source		
Enterolert	Enterococcus				
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P		
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P		
6010B	Metals (ICP)(list upon request)	NP/SW			
245.1	Mercury (CVAA)	NP/P	NP		
7470A	Mercury (CVAA)	NP			
7471A	Mercury (CVAA)	SW			
SM 2340B	Total Hardness (as CaCO3) by calculation	NP/P	NP		
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P			
3010A	Preparation, Total Metals	NP/P			
3020A	Preparation, Total Metals	NP/P/SW			
3050B	Preparation, Metals	SW			
504.1	EDB, DBCP and 1,2,3-TCP (GC)	P	P		
608	Organochlorine Pest/PCBs (list upon request)	NP	NP		
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP	NP		
3546	Microwave Extraction	SW			
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP			
3550B	Ultrasonic Extraction	SW			
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW			
8082	PCBs by Gas Chromatography(list upon request)	NP/SW			
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW			
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW	
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)				NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P		
524.2	Trihalomethane compounds	P	P		
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP		
5035	Closed System Purge and Trap	SW			
5030B	Purge and Trap	NP			
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW			
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)				NP/SW
180.1	Turbidity, Nephelometric	P	P		
300	Anions, Ion Chromatography	NP/P	NP/P		
410.4	COD	NP	NP		
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW			
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP		
7196A	Chromium, Hexavalent	NP/SW			
9012A	Cyanide, Total and/or Amenable	NP/SW			
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP			
9045C	pH	SW			
L107041C	Nitrogen, Nitrate	NP	P		
L107-06-1B	Nitrogen Ammonia	NP	NP		
L204001A CN	Cyanide, Total	P	NP/P		
L210-001A	Phenolics, Total Recoverable	NP	NP		
SM 2320B	Alkalinity	NP/P	NP/P		
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P		
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P		
SM 2540D	Solids, Total Suspended (TSS)	NP	NP		
SM 3500 CR D	Chromium, Hexavalent	NP			
SM 4500 H+ B	pH	NP/P	NP/P		
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P		
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP		
SM 4500 P E	Phosphorus, Total	NP	NP		
SM 4500 S2 D	Sulfide, Total	NP			
SM 5210B	BOD, 5-Day	NP	NP		
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP		

Not all organic compounds are accreditied under NELAC
For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory
The lab carries additional accreditations with several states. This is the laboratories typcial listing but is subject to change based on the laboratories current certification standing.

Login Sample Receipt Checklist

Client: ESS Laboratory

Job Number: 360-36037-1

Login Number: 36037

List Source: TestAmerica Westfield

List Number: 1

Creator: Beaumier, Janine E

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston, RI 02910-2211
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time ___ Standard Other 48 HR
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: 1108375

Electronic Deliverable Yes ____ No ____

Format: Excel __ Access __ PDF __ Other _____

Co. Name	Project #	Project Name (20 Char. or less)
GZA GeoEnvironmental Inc	43654.00	Tidewater GRS Upgrade

Contact Person	Address
M. Kilpatrick	530 Broadway

City	State	Zip	PO#
Providence	RI	02909	

Telephone #	Fax #	Email Address
401 421 4140		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: PCBs 8082A*
01	8/30/11*	1115		X	S	CSCS-4A (1" to 2")		1	G	X
02	8/30/11*	1120		X	S	CSCS-9		1		X
03	8/30/11*	1130		X	S	CSCS-10		1	↓	X
	* EDD 9/2/11									

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 X Yes ___ No

Seals Intact ___ Yes ___ No NA: ____

Cooler Temp: ON ICE .

Internal Use Only
[ ] Pickup
[ ] Technicians ____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by: W. Fortune

Comments: SAMPLES ARE CONCRETE, ANALYZE VIA EPA 8082A with SOXHLET EXTRACTION - 48 HR TURNAROUND

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
					8/31/11		8/31/11 08:43
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

10/26/04 A

ESS Laboratory

Test America

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 _____ of _____

Turn Time ___ Standard Other 48 Hour
If faster than 5 days, prior approval by laboratory is required # AT

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

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

Co. Name | Project # 1108375 | Project Name (20 Char. or less)

Contact Person Liz Ouk | Address

City State Zip | PO# 1108375

Telephone # | Fax # | Email Address massfunnygirl@Hotmail.com liz02909@yahoo.com

PCB 3540

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
	08/31/11	11:15		X	SO	1108375-01	1	1	AG	X
	08/31/11	11:20		X	SO	1108375-02	1	1	AG	X
	08/31/11	11:30		X	SO	1108375-03	1	1	AG	X

OB 8/31/11

Container Type: P-Poly G-Glass S-Sterile V-VOA | Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Warer SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters

Cooler Presenr X Yes ___ No | Internal Use Only

Seals Intact ___ Yes ___ No NA: X | [ ] Pickup

Cooler Temp: 3.8°C | [ ] Technicians _____

Preservation Code 1- NP, 2- HCl, 3- H_2SO_4, 4- HNO_3, 5- NaOH, 6- MeOH, 7- Asorbic Acid, 8- ZnAct, 9- _____

Sampled by:

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	8/31/11 1248		8/31/11 1246		8/31/11 1410		8/31/11 1410
	8-31-11 16:00		8/31/11 16:00				

*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

1 (White) Lab Copy 2 (Yellow) Client Receipt

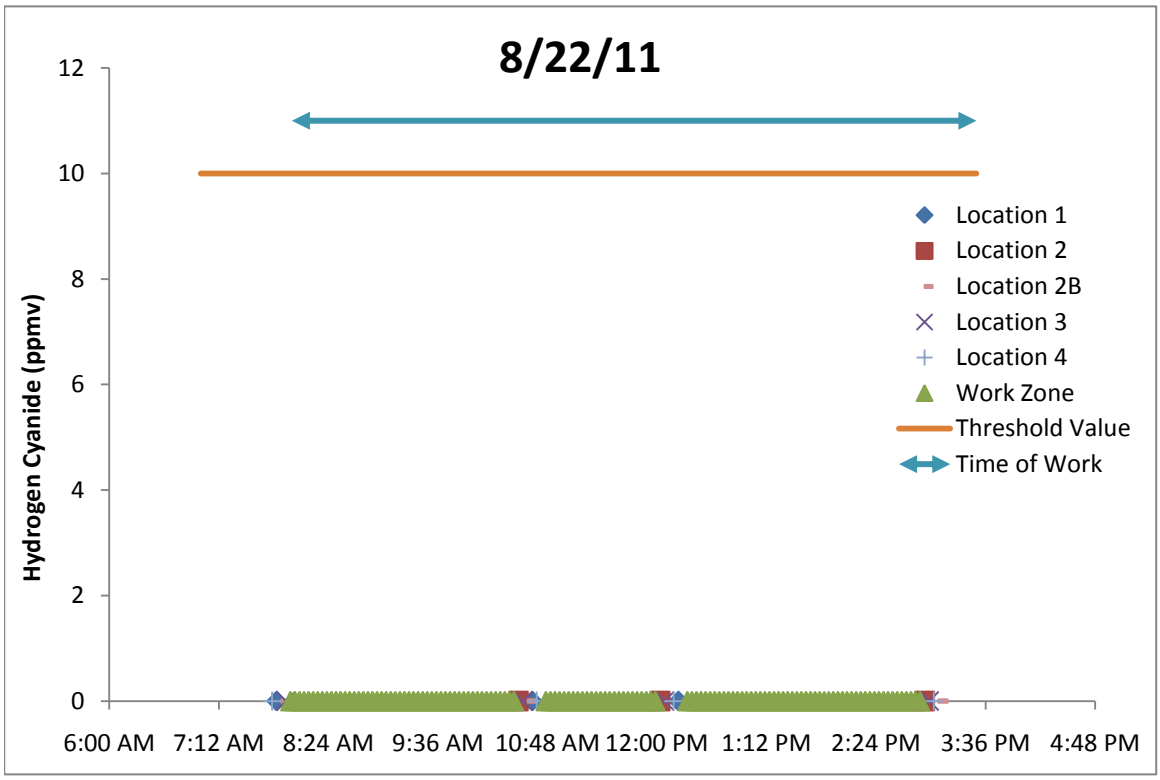
10/26/04 A

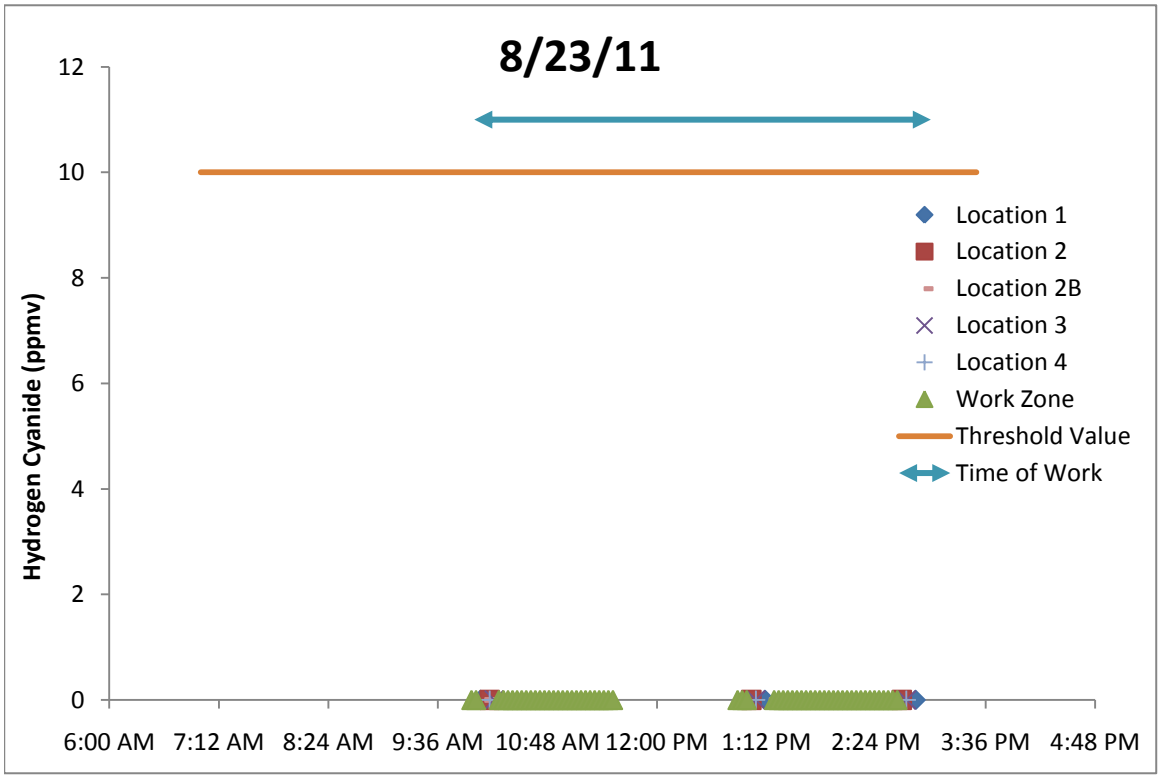
APPENDIX D

AIR MONITORING DATA GRAPHS

APPENDIX D
AIR QUALITY MONITORING - HCN
PCB ABATEMENT ACTIVITIES

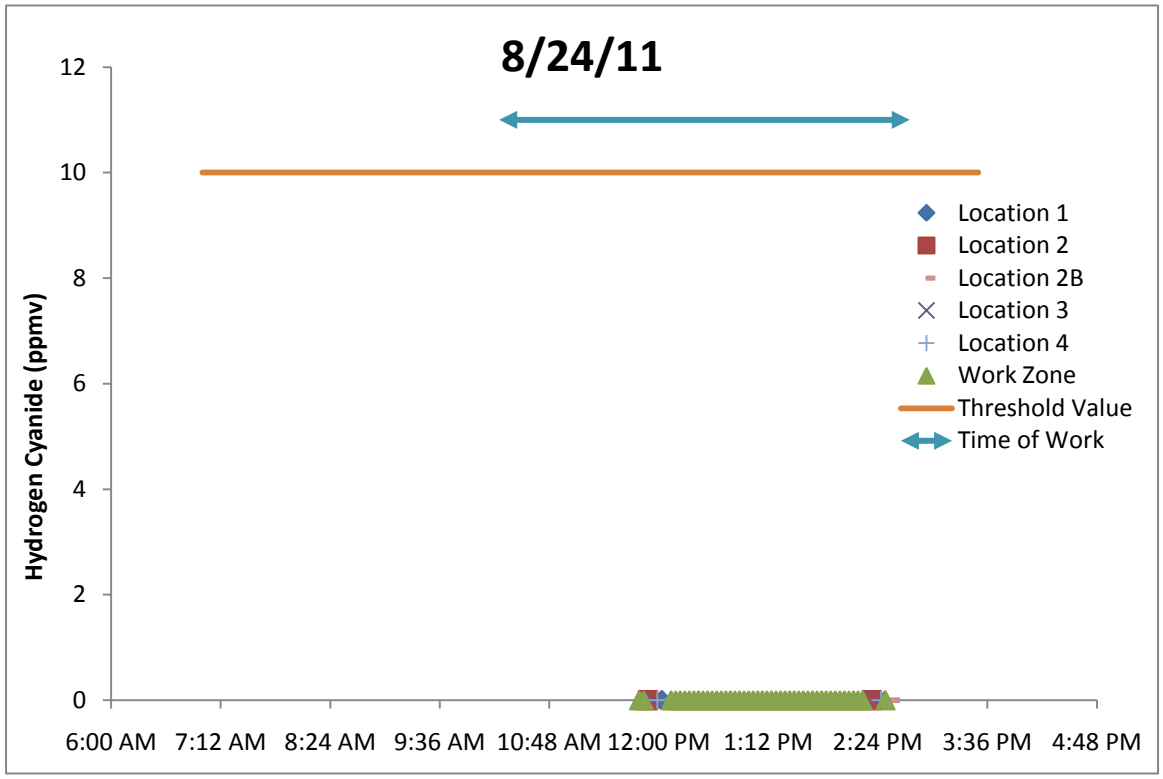
Former Tidewater Facility
Pawtucket, Rhode Island

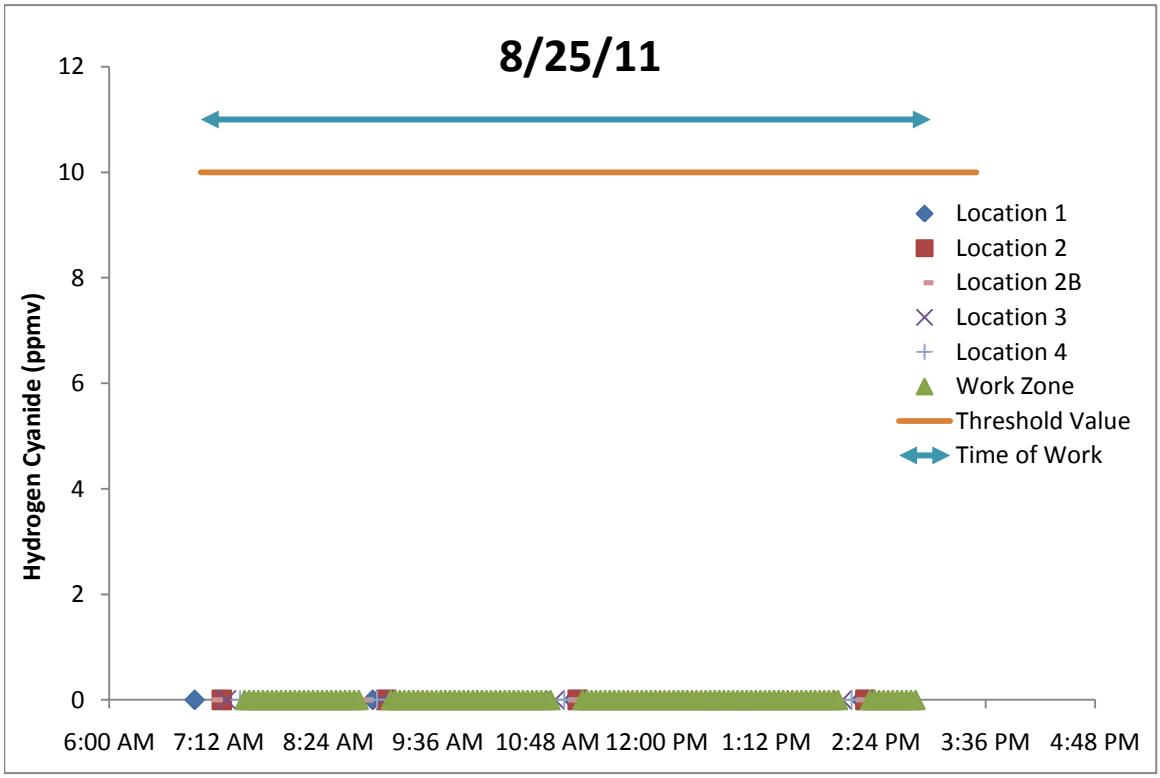




APPENDIX D
AIR QUALITY MONITORING - HCN
PCB ABATEMENT ACTIVITIES

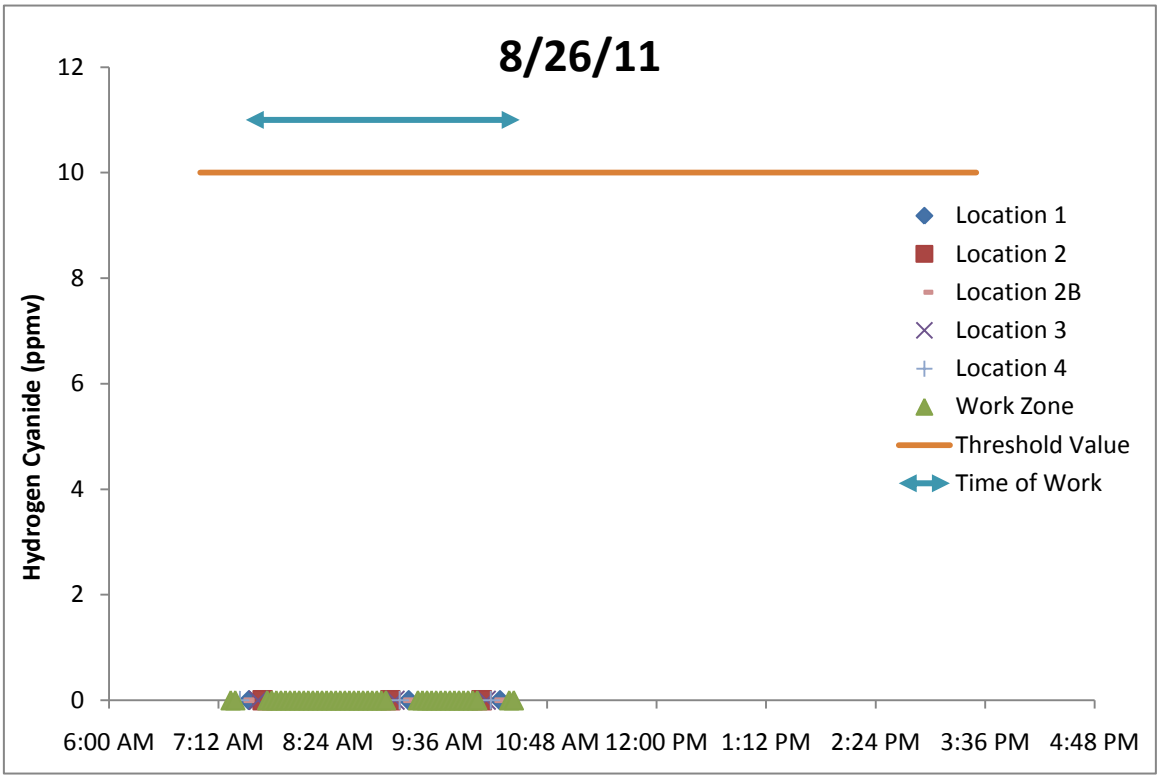
Former Tidewater Facility
Pawtucket, Rhode Island

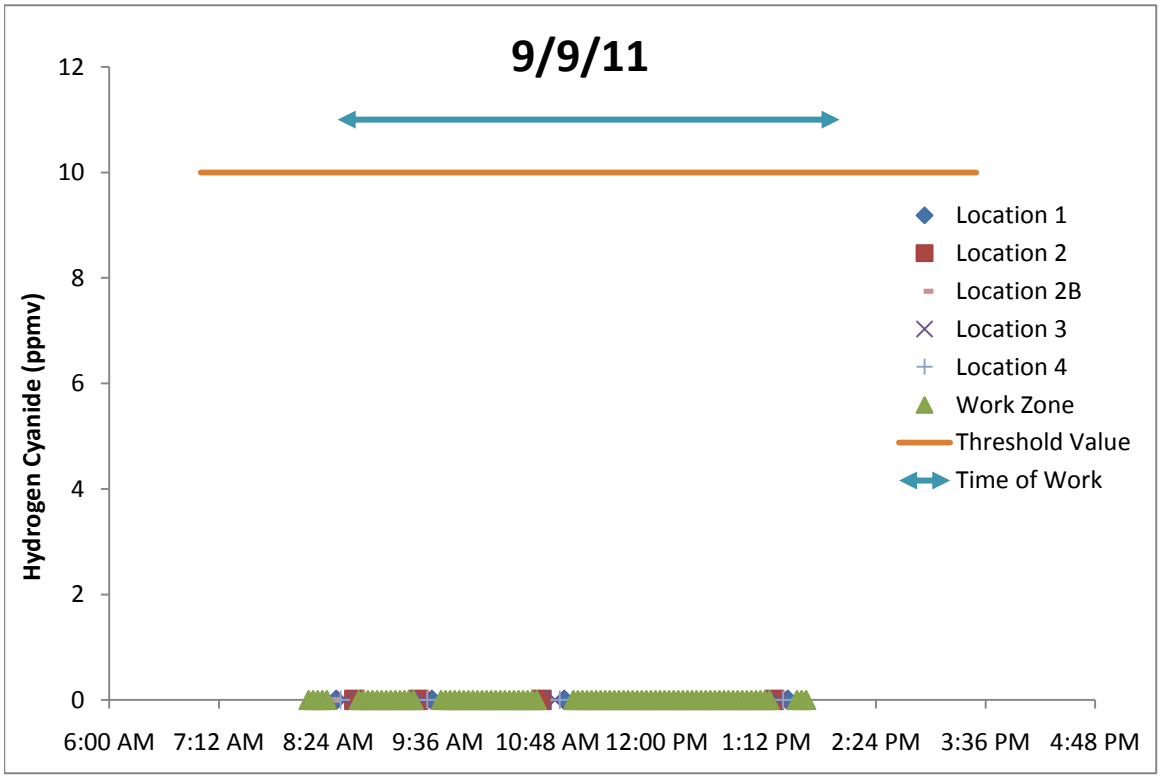




APPENDIX D
AIR QUALITY MONITORING - HCN
PCB ABATEMENT ACTIVITIES

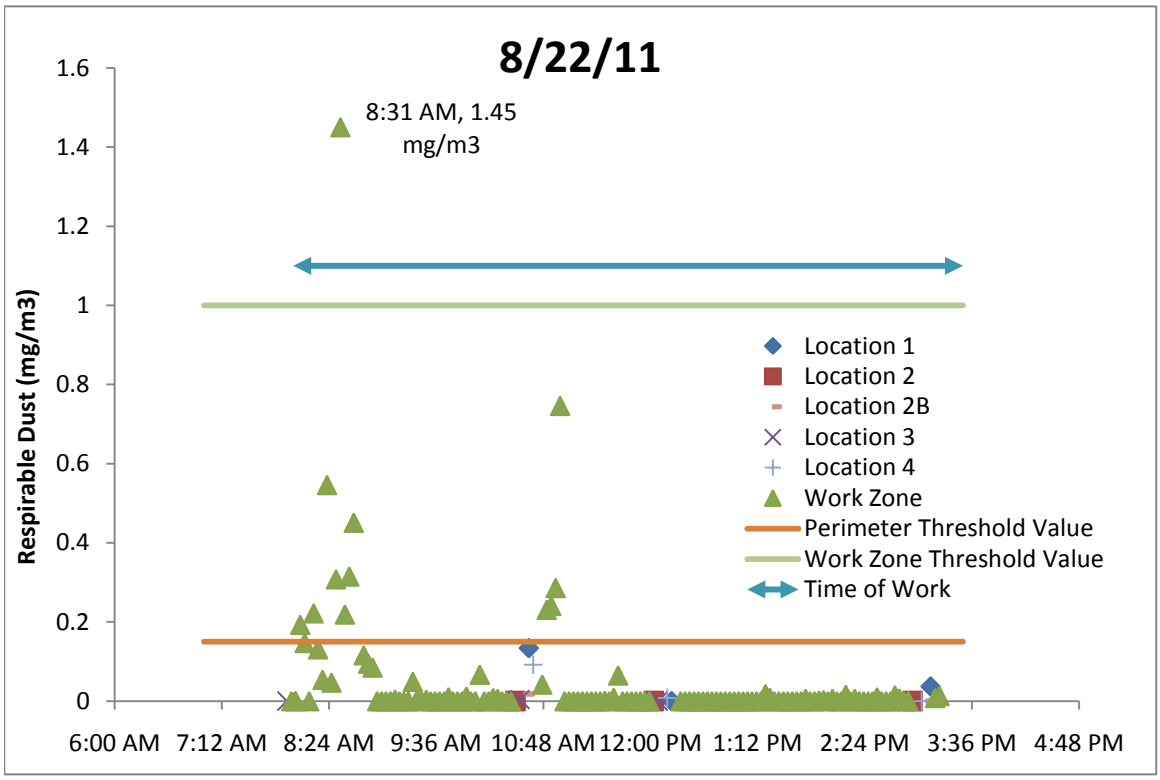
Former Tidewater Facility
Pawtucket, Rhode Island

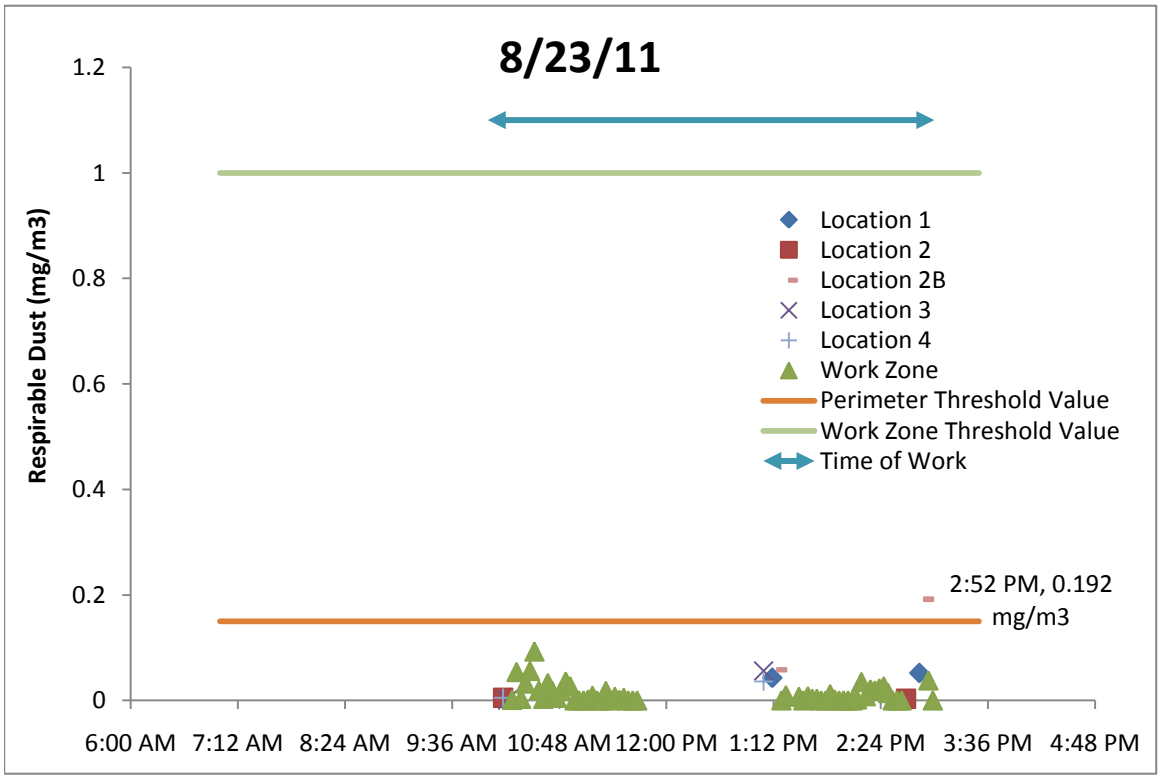




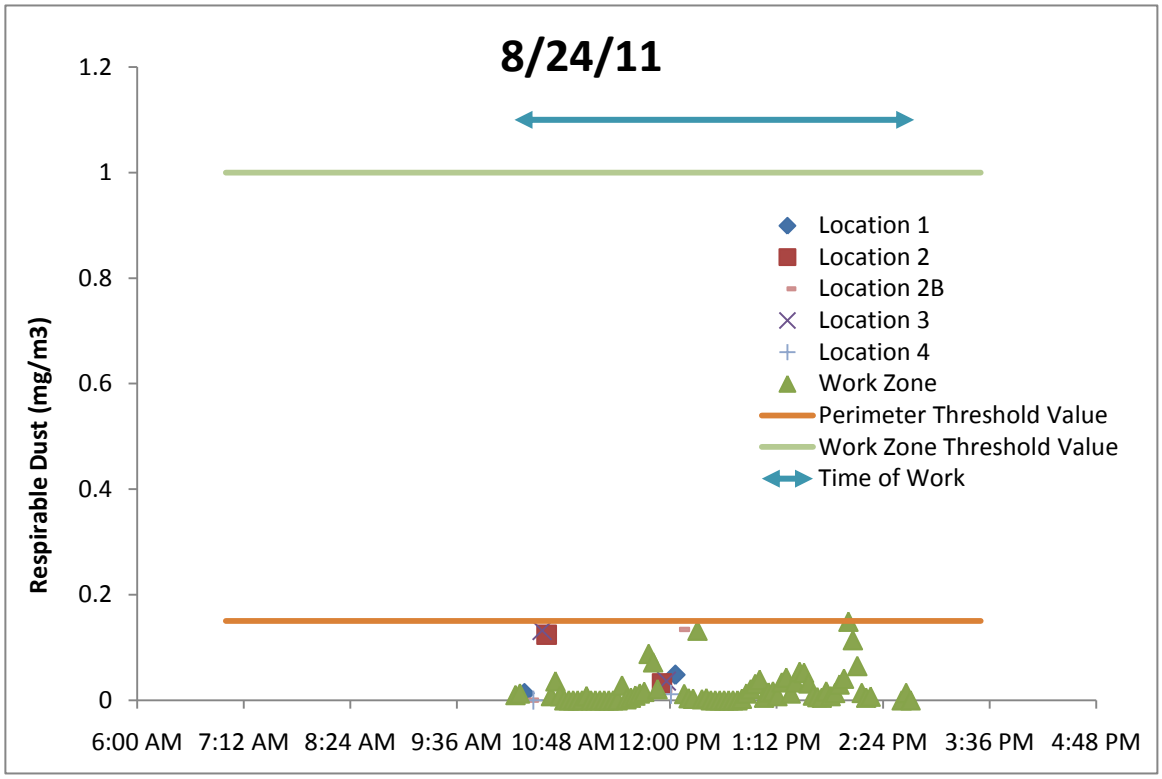
APPENDIX D
AIR QUALITY MONITORING - RESPIRABLE DUST
PCB ABATEMENT ACTIVITIES

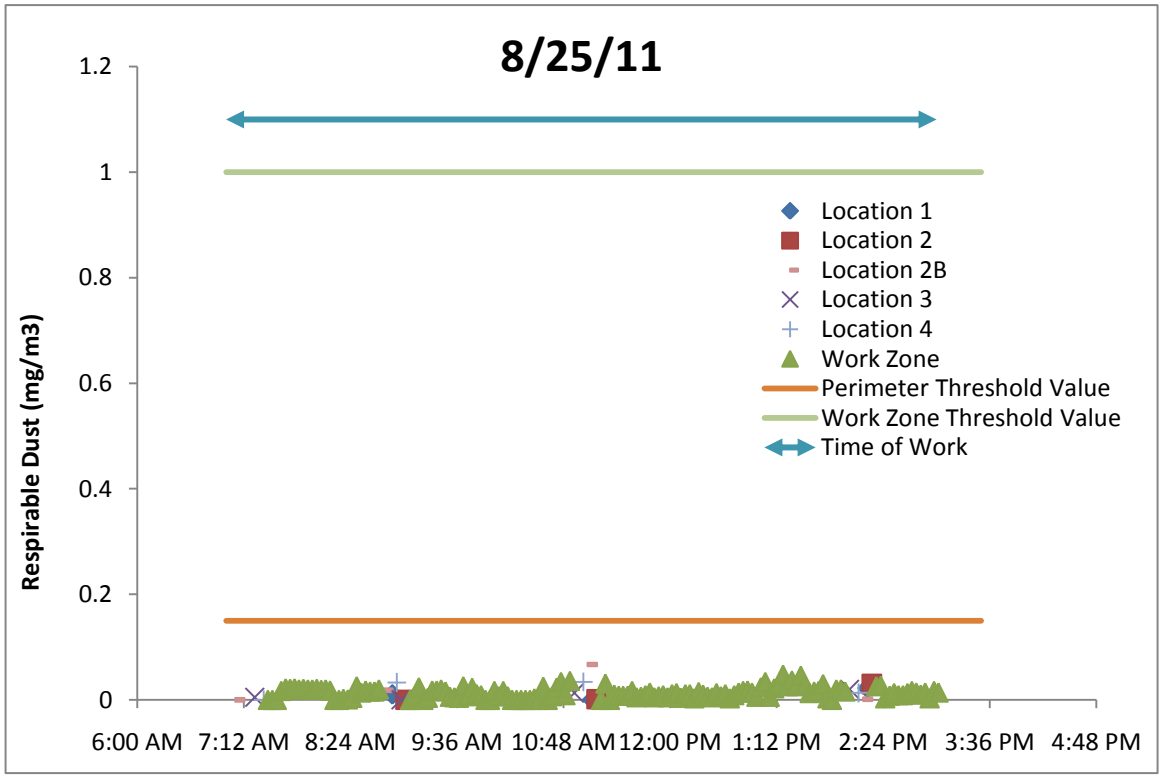
Former Tidewater Facility
Pawtucket, Rhode Island



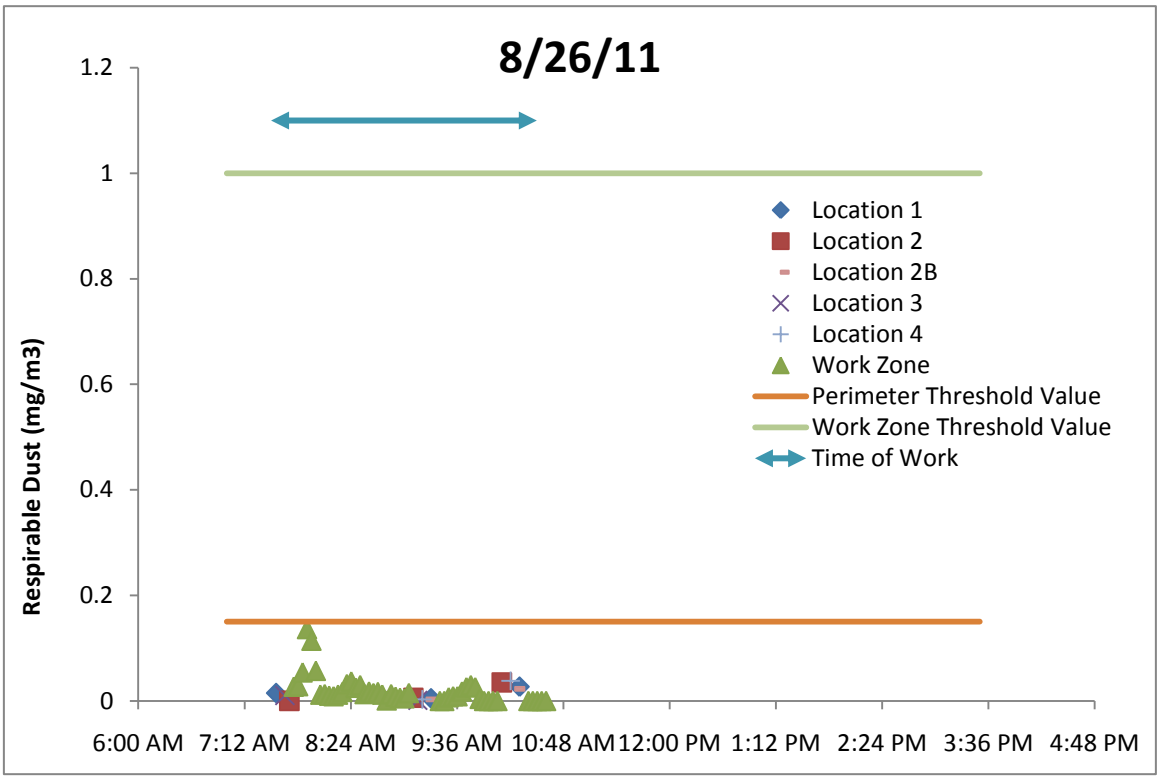


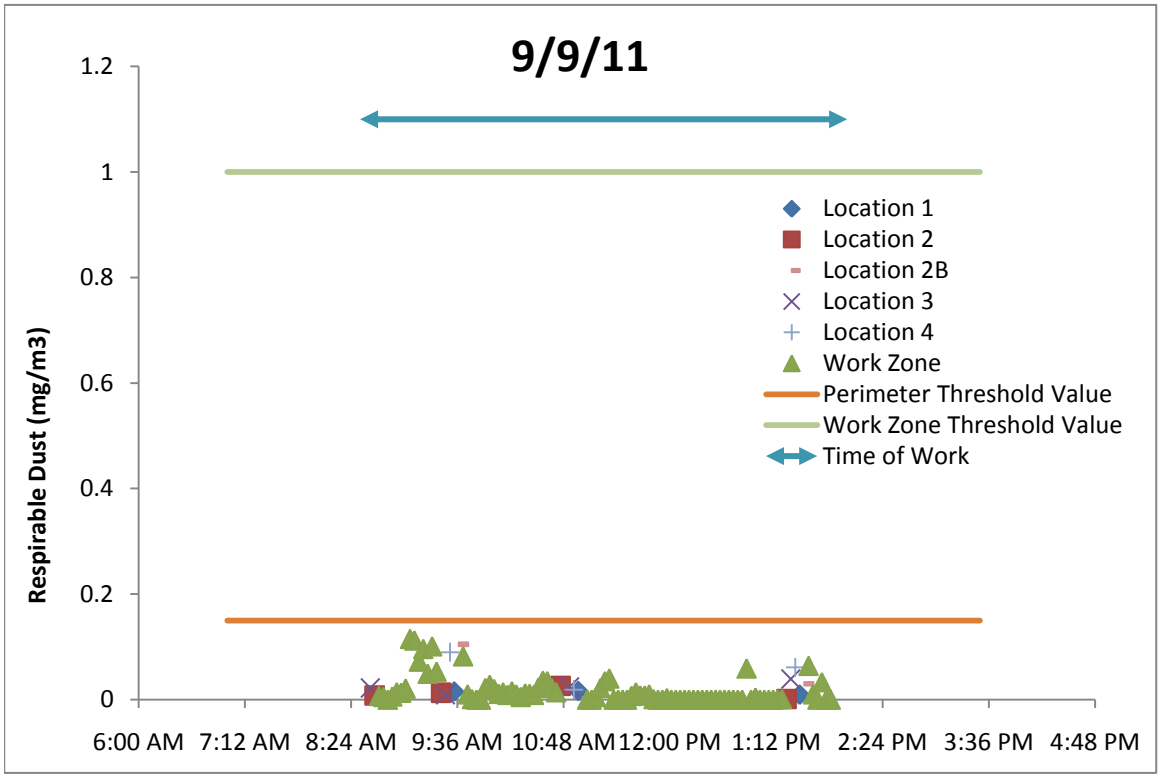
APPENDIX D
AIR QUALITY MONITORING - RESPIRABLE DUST
PCB ABATEMENT ACTIVITIES
Former Tidewater Facility
Pawtucket, Rhode Island





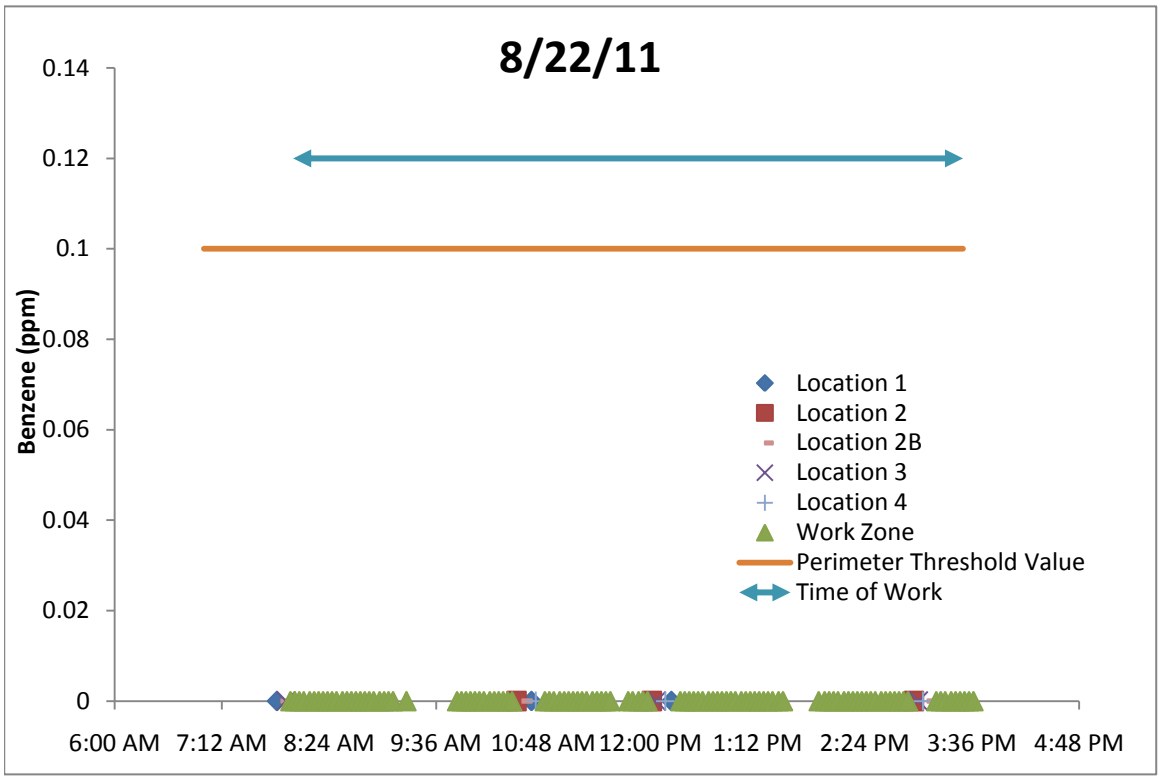
APPENDIX D
AIR QUALITY MONITORING - RESPIRABLE DUST
PCB ABATEMENT ACTIVITIES
Former Tidewater Facility
Pawtucket, Rhode Island

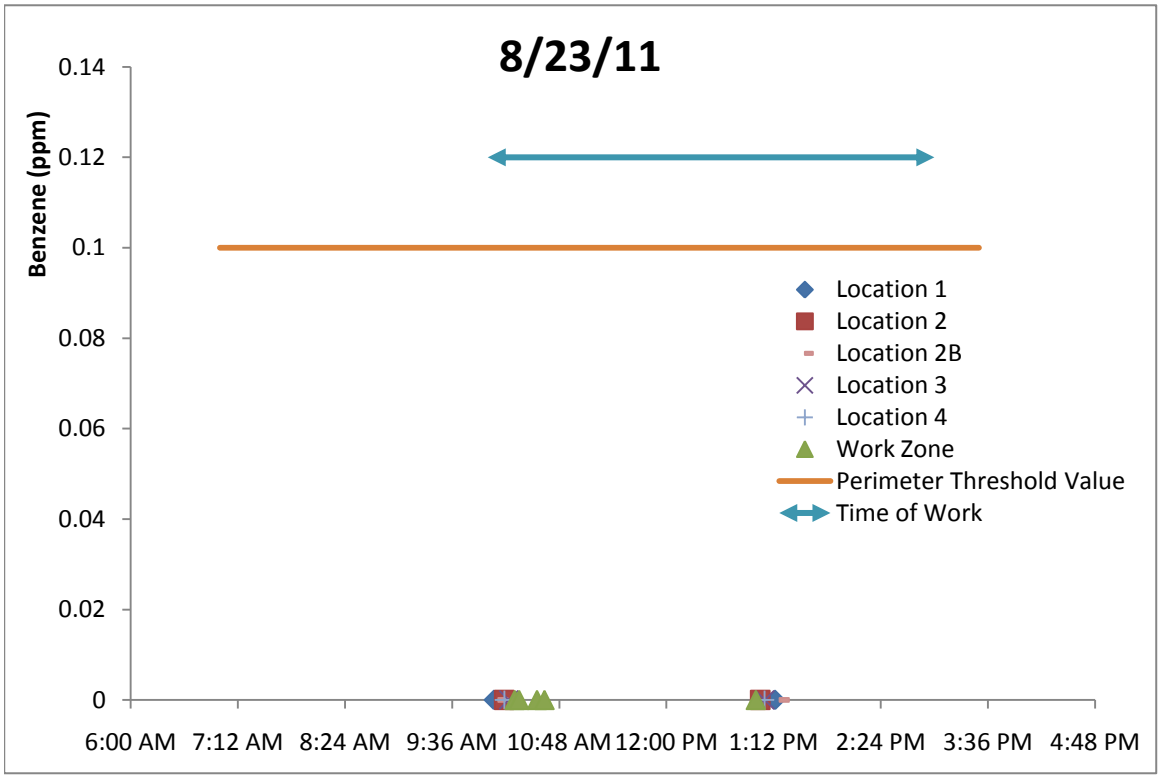




APPENDIX D
AIR QUALITY MONITORING - BENZENE
PCB ABATEMENT ACTIVITIES

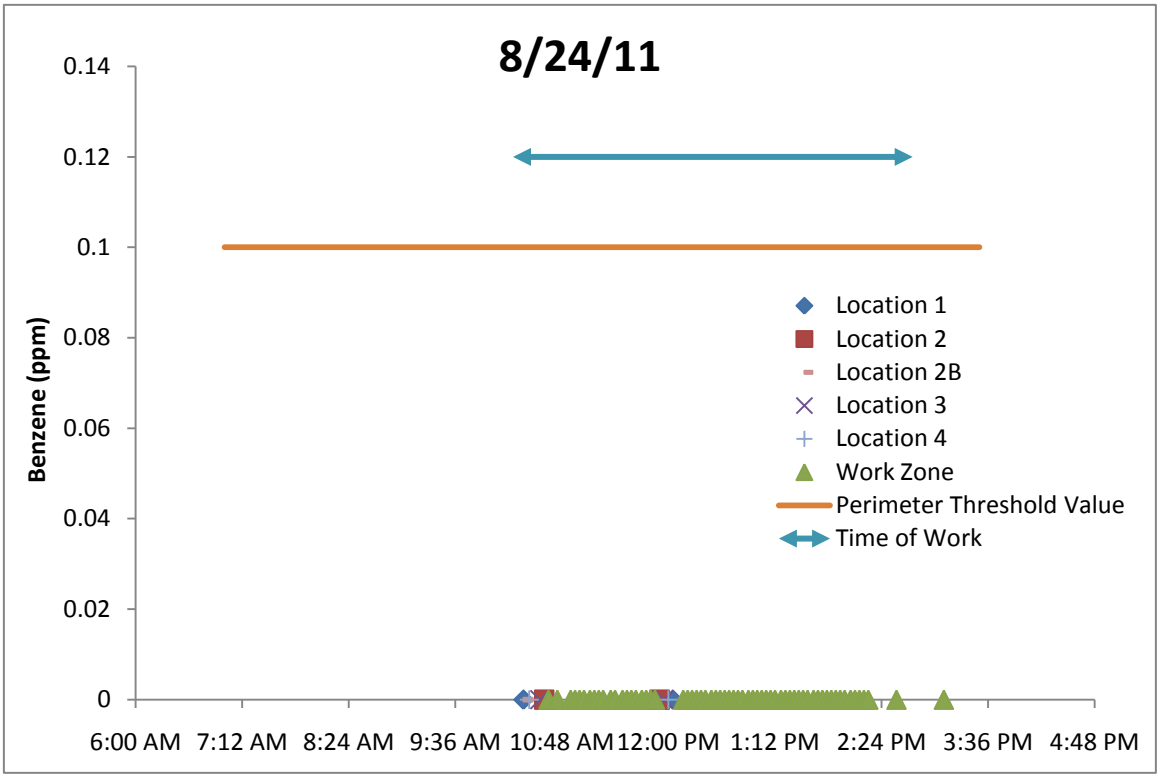
Former Tidewater Facility
Pawtucket, Rhode Island

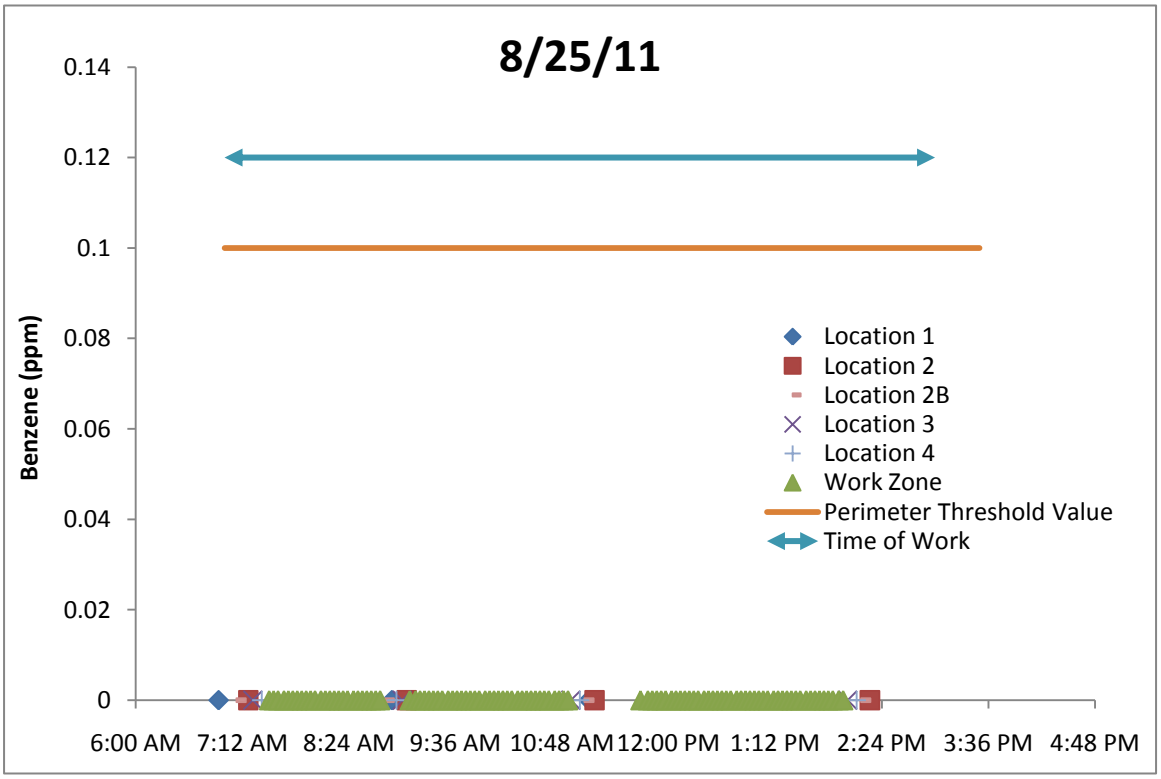




APPENDIX D
AIR QUALITY MONITORING - BENZENE
PCB ABATEMENT ACTIVITIES

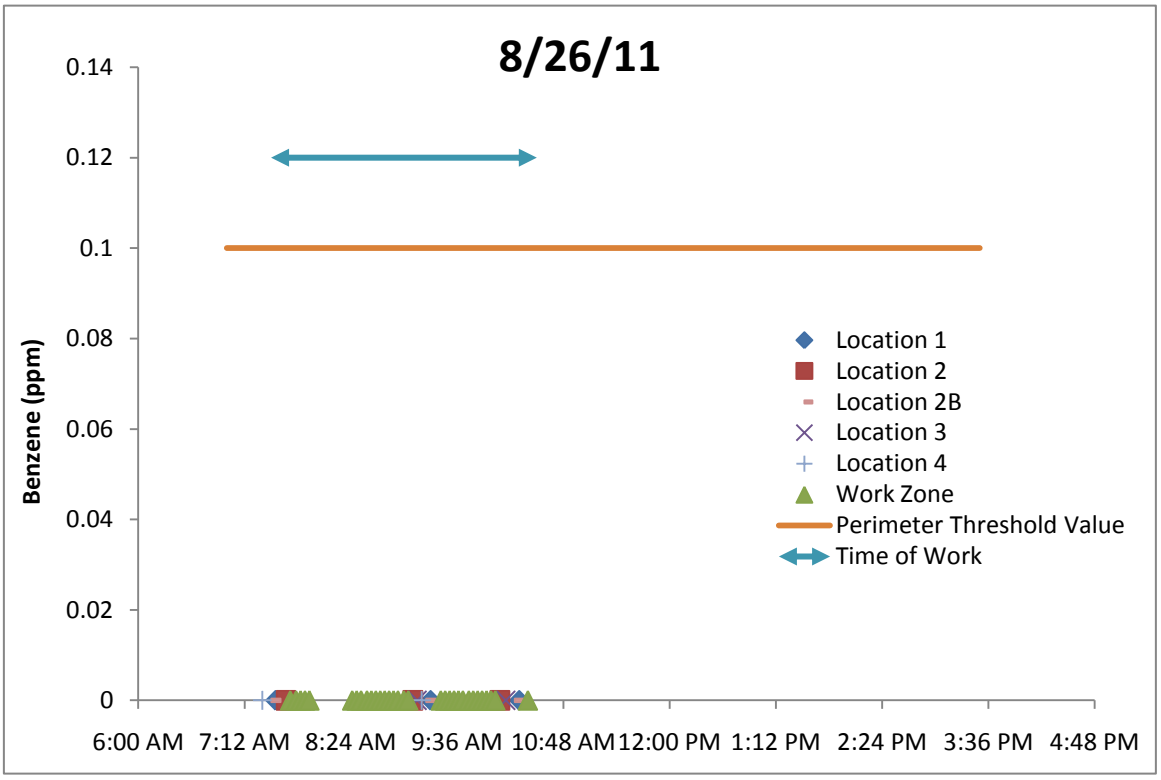
Former Tidewater Facility
Pawtucket, Rhode Island

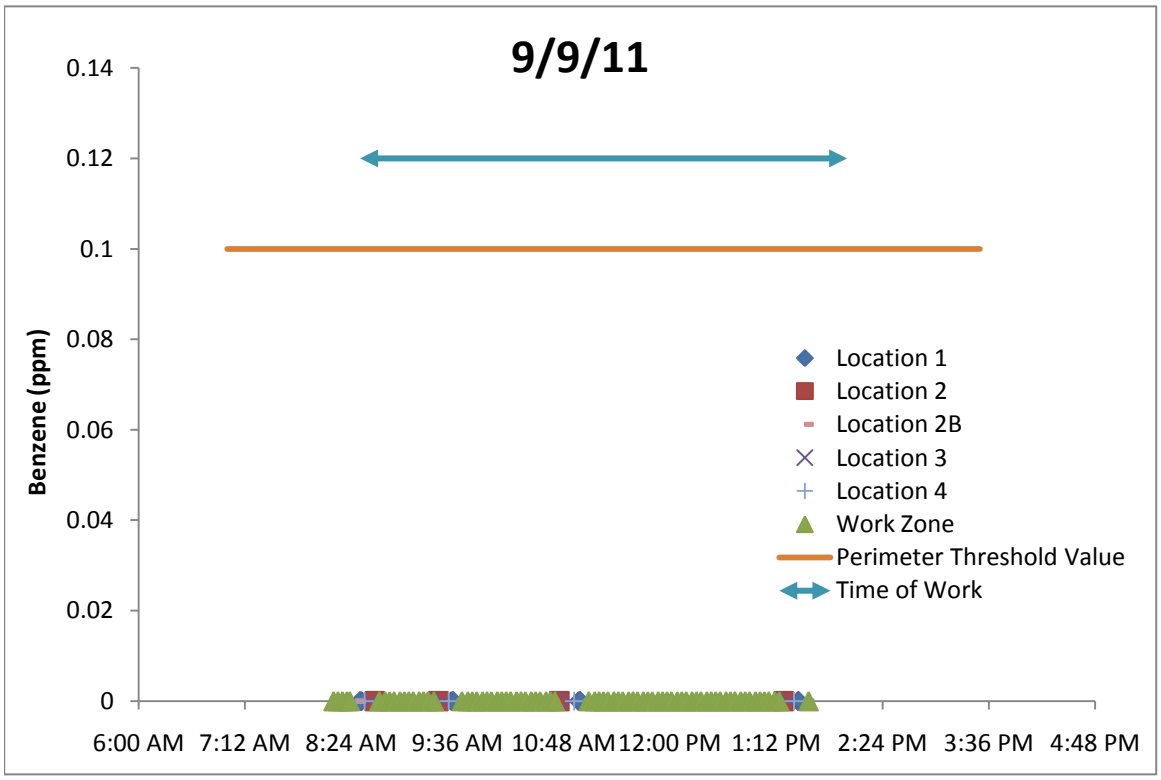




APPENDIX D
AIR QUALITY MONITORING - BENZENE
PCB ABATEMENT ACTIVITIES

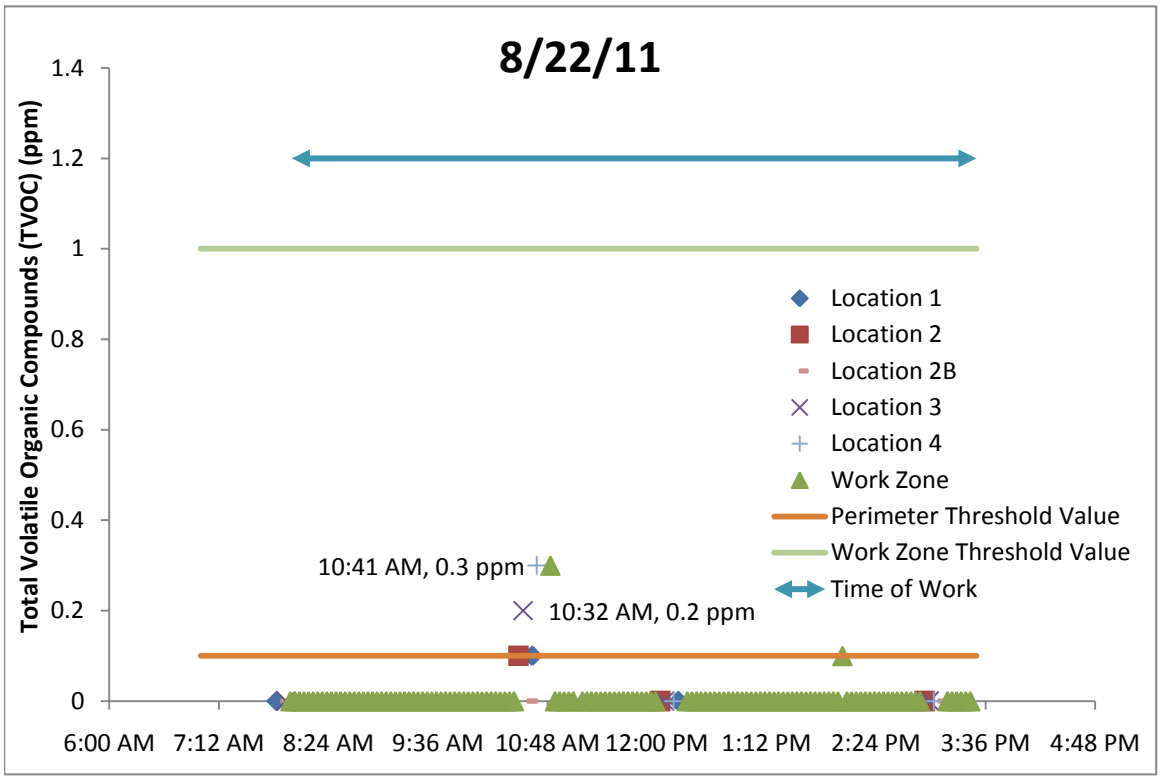
Former Tidewater Facility
Pawtucket, Rhode Island

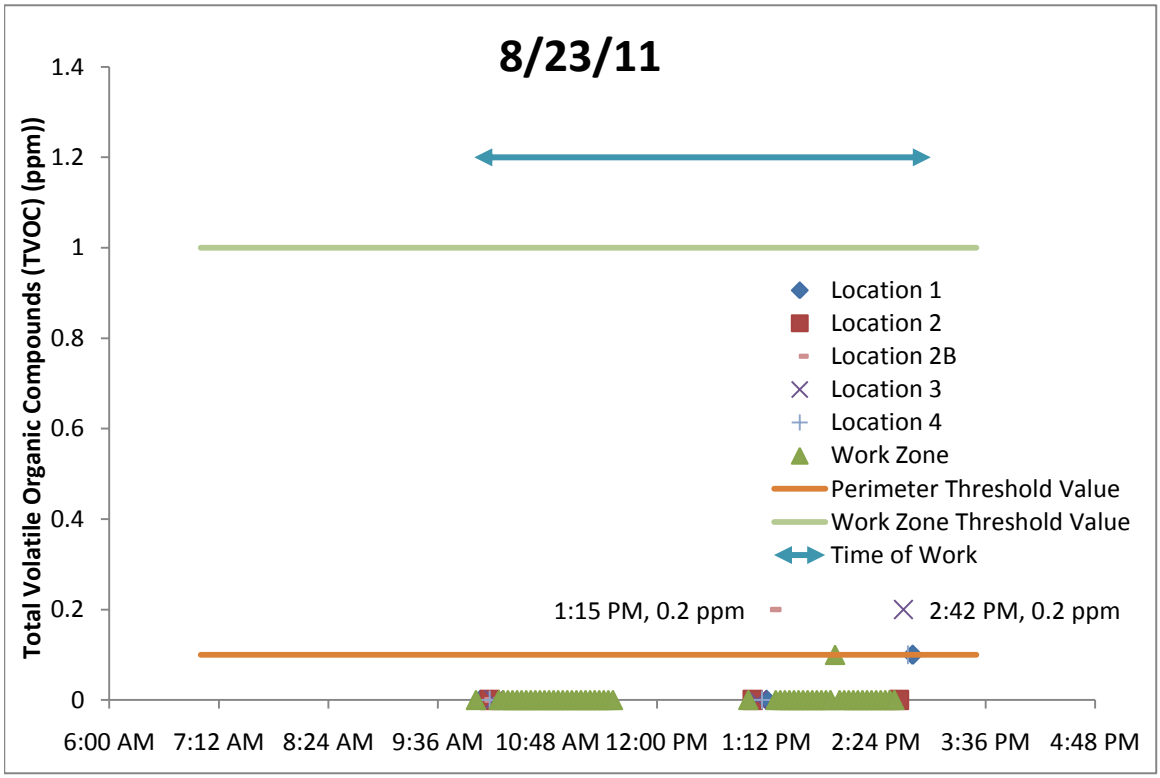




APPENDIX D
AIR QUALITY MONITORING - TVOCS
PCB ABATEMENT ACTIVITIES

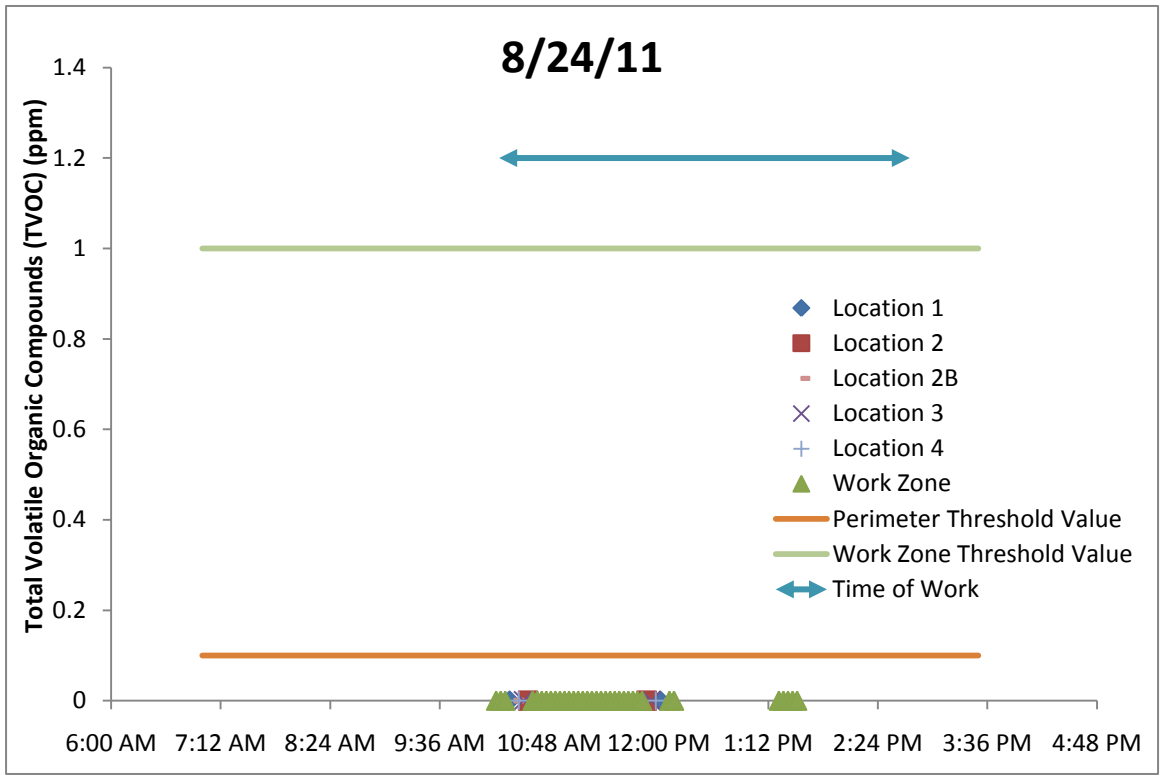
Former Tidewater Facility
Pawtucket, Rhode Island

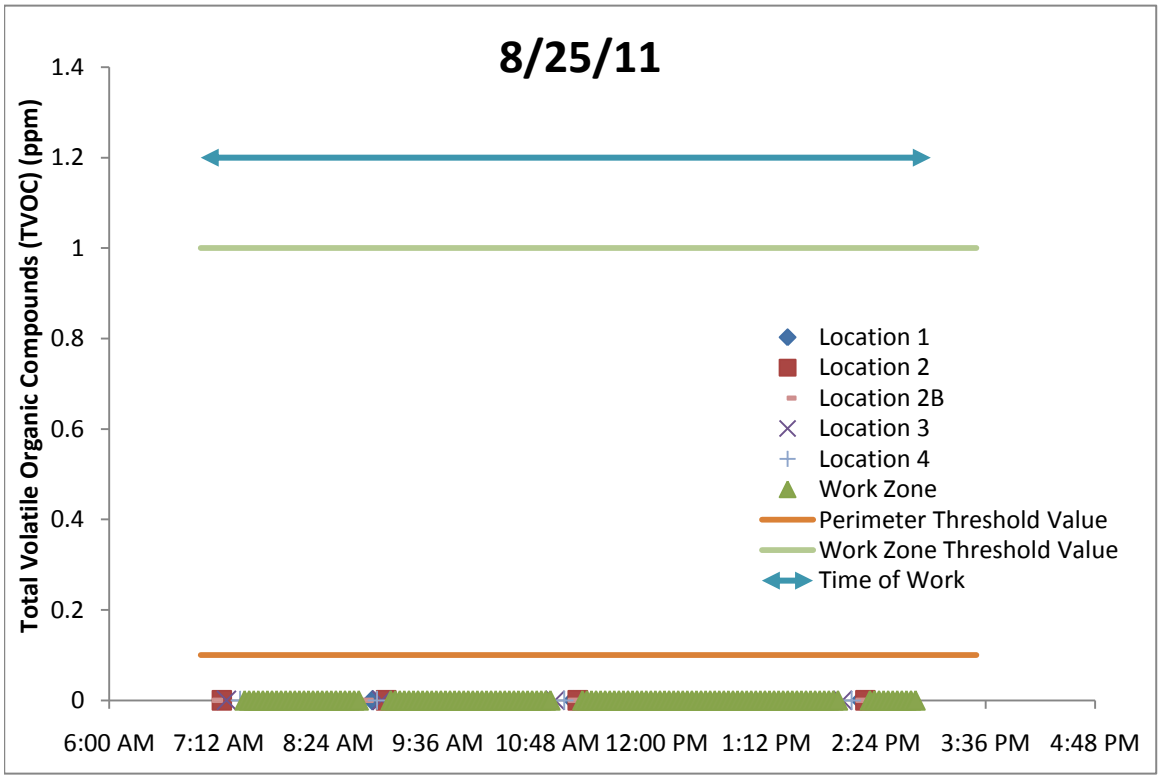




APPENDIX D
AIR QUALITY MONITORING - TVOCS
PCB ABATEMENT ACTIVITIES

Former Tidewater Facility
Pawtucket, Rhode Island





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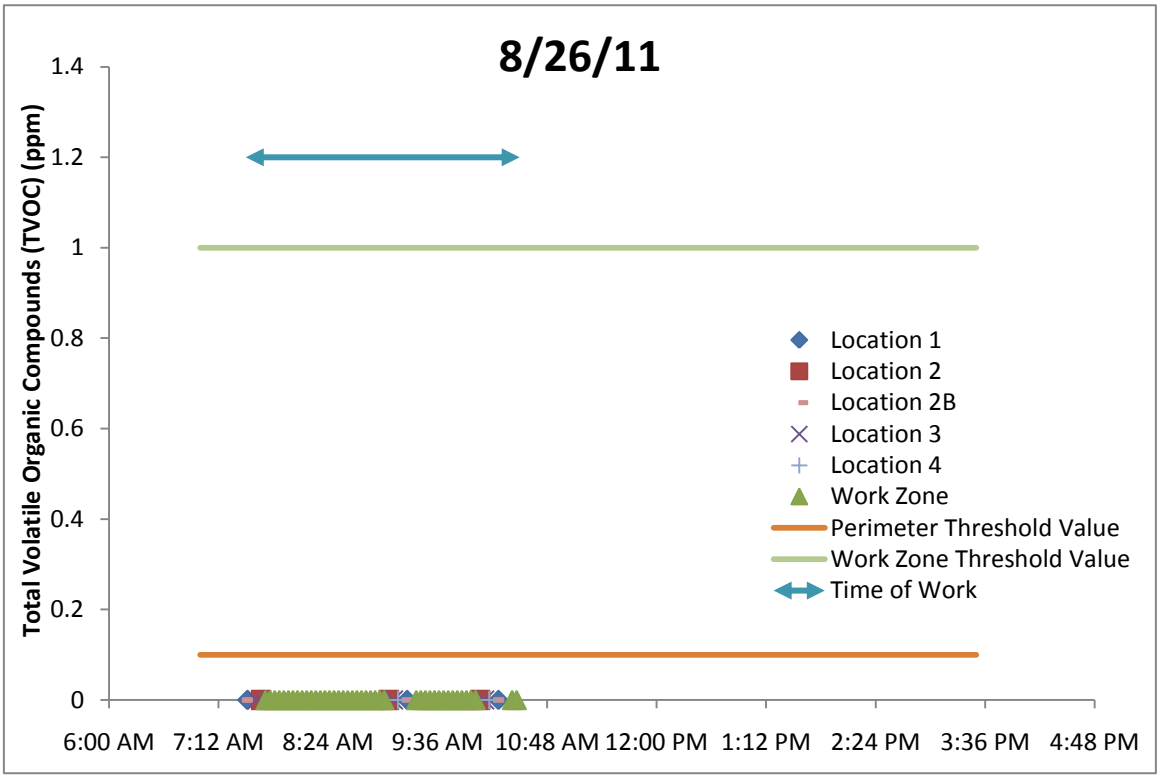
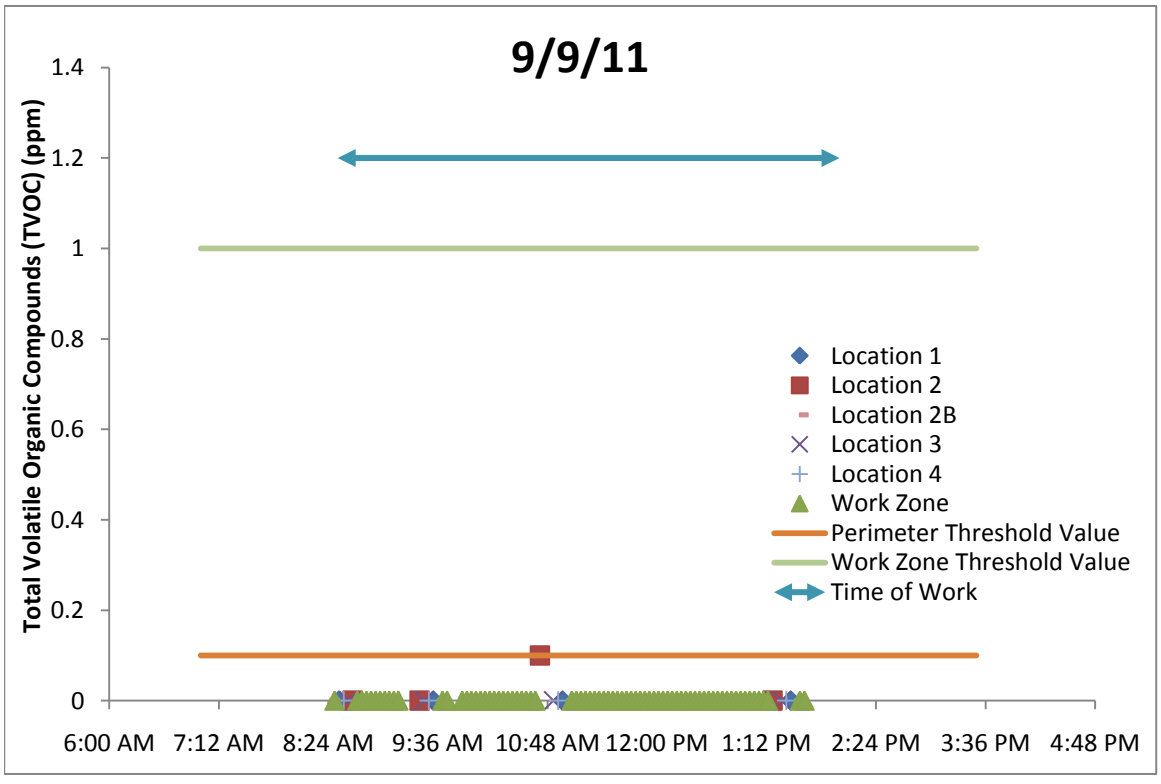
AIR QUALITY MONITORING - TVOCS
PCB ABATEMENT ACTIVITIES

Former Tidewater Facility
Pawtucket, Rhode Island





APPENDIX E

LABORATORY CERTIFICATES OF ANALYSIS-SUMMA CANISTERS

ANALYTICAL REPORT

Lab Number:	L1113440
Client:	GZA GeoEnvironmental, Inc. 530 Broadway Providence, RI 02903
ATTN:	Meg Kilpatrick
Phone:	(401) 421-4140
Project Name:	TIDEWATER
Project Number:	43654-30
Report Date:	09/07/11

Certifications & Approvals: MA (M-MA030), NY (11627), CT (PH-0141), NH (2206), NJ (MA015), RI (LAO00299), ME (MA0030), PA (Registration #68-02089), LA NELAC (03090), FL NELAC (E87814), US Army Corps of Engineers.

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1113440-01	SUMMA - UPGRAD.	PAWTUCKET, RI	08/25/11 15:07
L1113440-02	SUMMA - DOWNGRAD.	PAWTUCKET, RI	08/25/11 15:10
L1113440-03	BLANK	PAWTUCKET, RI	08/25/11 00:00

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Volatile Organics in Air

The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kathleen M. O'Brien Kathleen O'Brien

Title: Technical Director/Representative Date: 09/07/11

AIR

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

SAMPLE RESULTS

Lab ID: L1113440-01
Client ID: SUMMA - UPGRAD.
Sample Location: PAWTUCKET, RI
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 09/01/11 01:57
Analyst: AR

Date Collected: 08/25/11 15:07
Date Received: 08/30/11
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air (Low Level) - Mansfield Lab								
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	0.561	0.200	--	2.11	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	81		60-140
Bromochloromethane	84		60-140
chlorobenzene-d5	75		60-140

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

SAMPLE RESULTS

Lab ID: L1113440-02
Client ID: SUMMA - DOWNGRAD.
Sample Location: PAWTUCKET, RI
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 09/01/11 02:33
Analyst: AR

Date Collected: 08/25/11 15:10
Date Received: 08/30/11
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air (Low Level) - Mansfield Lab								
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	0.566	0.200	--	2.13	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	80		60-140
Bromochloromethane	83		60-140
chlorobenzene-d5	74		60-140

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

SAMPLE RESULTS

Lab ID: L1113440-03
Client ID: BLANK
Sample Location: PAWTUCKET, RI
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 09/01/11 22:34
Analyst: AR

Date Collected: 08/25/11 00:00
Date Received: 08/30/11
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab								
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	110		60-140
Bromochloromethane	71		60-140
chlorobenzene-d5	96		60-140

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/11 15:58

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01-02 Batch: WG487315-4								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.860	--		1
Propane	ND	0.200	--	ND	0.361	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/11 15:58

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01-02 Batch: WG487315-4								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/11 15:58

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01-02 Batch: WG487315-4								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
2,4,4-trimethyl-1-pentene	ND	0.500	--	ND	2.29	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
2,4,4-trimethyl-2-pentene	ND	0.500	--	ND	2.29	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/11 15:58

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01-02 Batch: WG487315-4								
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.20	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethybenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 08/31/11 15:58

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 01-02 Batch: WG487315-4								
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 09/01/11 18:21

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 03 Batch: WG487315-9								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.860	--		1
Propane	ND	0.200	--	ND	0.361	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 09/01/11 18:21

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 03 Batch: WG487315-9								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 09/01/11 18:21

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 03 Batch: WG487315-9								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
2,4,4-trimethyl-1-pentene	ND	0.500	--	ND	2.29	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
2,4,4-trimethyl-2-pentene	ND	0.500	--	ND	2.29	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 09/01/11 18:21

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 03 Batch: WG487315-9								
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.20	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethybenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1

Project Name: TIDEWATER
Project Number: 43654-30
Lab Number: L1113440
Report Date: 09/07/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 09/01/11 18:21

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab for sample(s): 03 Batch: WG487315-9								
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-02 Batch: WG487315-3								
Chlorodifluoromethane	77		-		70-130	-		
Propylene	75		-		70-130	-		
Propane	77		-		70-130	-		
Dichlorodifluoromethane	90		-		70-130	-		
Chloromethane	88		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	94		-		70-130	-		
Methanol	**52**	Q	-		70-130	-		
Vinyl chloride	91		-		70-130	-		
1,3-Butadiene	88		-		70-130	-		
Butane	**65**	Q	-		70-130	-		
Bromomethane	93		-		70-130	-		
Chloroethane	95		-		70-130	-		
Ethyl Alcohol	89		-		70-130	-		
Dichlorofluoromethane	70		-		70-130	-		
Vinyl bromide	92		-		70-130	-		
Acrolein	98		-		70-130	-		
Acetone	102		-		70-130	-		
Acetonitrile	110		-		70-130	-		
Trichlorofluoromethane	95		-		70-130	-		
iso-Propyl Alcohol	87		-		70-130	-		
Acrylonitrile	102		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER

Project Number: 43654-30

Lab Number: L1113440

Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-02 Batch: WG487315-3								
Pentane	87		-		70-130	-		
Ethyl ether	98		-		70-130	-		
1,1-Dichloroethene	94		-		70-130	-		
tert-Butyl Alcohol	83		-		70-130	-		
Methylene chloride	97		-		70-130	-		
3-Chloropropene	102		-		70-130	-		
Carbon disulfide	86		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	106		-		70-130	-		
trans-1,2-Dichloroethene	97		-		70-130	-		
1,1-Dichloroethane	106		-		70-130	-		
Methyl tert butyl ether	99		-		70-130	-		
Vinyl acetate	109		-		70-130	-		
2-Butanone	102		-		70-130	-		
cis-1,2-Dichloroethene	111		-		70-130	-		
Ethyl Acetate	114		-		70-130	-		
Chloroform	118		-		70-130	-		
Tetrahydrofuran	78		-		70-130	-		
2,2-Dichloropropane	106		-		70-130	-		
1,2-Dichloroethane	87		-		70-130	-		
n-Hexane	**132**	Q	-		70-130	-		
Isopropyl Ether	**138**	Q	-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-02 Batch: WG487315-3								
Ethyl-Tert-Butyl-Ether	100		-		70-130	-		
1,1,1-Trichloroethane	110		-		70-130	-		
1,1-Dichloropropene	114		-		70-130	-		
Benzene	109		-		70-130	-		
Carbon tetrachloride	108		-		70-130	-		
Cyclohexane	103		-		70-130	-		
Tertiary-Amyl Methyl Ether	95		-		70-130	-		
Dibromomethane	110		-		70-130	-		
1,2-Dichloropropane	106		-		70-130	-		
Bromodichloromethane	102		-		70-130	-		
1,4-Dioxane	94		-		70-130	-		
Trichloroethene	111		-		70-130	-		
2,2,4-Trimethylpentane	109		-		70-130	-		
Heptane	104		-		70-130	-		
2,4,4-Trimethyl-1-Pentene	101		-		70-130	-		
cis-1,3-Dichloropropene	104		-		70-130	-		
4-Methyl-2-pentanone	95		-		70-130	-		
2,4,4-Trimethyl-2-Pentene	97		-		70-130	-		
trans-1,3-Dichloropropene	84		-		70-130	-		
1,1,2-Trichloroethane	110		-		70-130	-		
Toluene	108		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-02 Batch: WG487315-3								
1,3-Dichloropropane	108		-		70-130	-		
2-Hexanone	94		-		70-130	-		
Dibromochloromethane	106		-		70-130	-		
1,2-Dibromoethane	105		-		70-130	-		
Butyl Acetate	101		-		70-130	-		
Octane	108		-		70-130	-		
Tetrachloroethene	114		-		70-130	-		
1,1,1,2-Tetrachloroethane	112		-		70-130	-		
Chlorobenzene	109		-		70-130	-		
Ethylbenzene	110		-		70-130	-		
p/m-Xylene	114		-		70-130	-		
Bromoform	97		-		70-130	-		
Styrene	113		-		70-130	-		
1,1,2,2-Tetrachloroethane	115		-		70-130	-		
o-Xylene	121		-		70-130	-		
1,2,3-Trichloropropane	78		-		70-130	-		
Nonane (C9)	108		-		70-130	-		
Isopropylbenzene	119		-		70-130	-		
Bromobenzene	105		-		70-130	-		
o-Chlorotoluene	113		-		70-130	-		
n-Propylbenzene	118		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-02 Batch: WG487315-3								
p-Chlorotoluene	105		-		70-130	-		
4-Ethyltoluene	110		-		70-130	-		
1,3,5-Trimethylbenzene	115		-		70-130	-		
tert-Butylbenzene	119		-		70-130	-		
1,2,4-Trimethylbenzene	119		-		70-130	-		
Decane (C10)	113		-		70-130	-		
Benzyl chloride	80		-		70-130	-		
1,3-Dichlorobenzene	115		-		70-130	-		
1,4-Dichlorobenzene	113		-		70-130	-		
sec-Butylbenzene	118		-		70-130	-		
p-Isopropyltoluene	108		-		70-130	-		
1,2-Dichlorobenzene	117		-		70-130	-		
n-Butylbenzene	114		-		70-130	-		
1,2-Dibromo-3-chloropropane	100		-		70-130	-		
Undecane	112		-		70-130	-		
Dodecane (C12)	101		-		70-130	-		
1,2,4-Trichlorobenzene	109		-		70-130	-		
Naphthalene	102		-		70-130	-		
1,2,3-Trichlorobenzene	107		-		70-130	-		
Hexachlorobutadiene	109		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 03 Batch: WG487315-8								
Chlorodifluoromethane	81		-		70-130	-		
Propylene	80		-		70-130	-		
Propane	83		-		70-130	-		
Dichlorodifluoromethane	97		-		70-130	-		
Chloromethane	84		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	93		-		70-130	-		
Methanol	**50**	Q	-		70-130	-		
Vinyl chloride	89		-		70-130	-		
1,3-Butadiene	87		-		70-130	-		
Butane	97		-		70-130	-		
Bromomethane	96		-		70-130	-		
Chloroethane	93		-		70-130	-		
Ethyl Alcohol	97		-		70-130	-		
Dichlorofluoromethane	104		-		70-130	-		
Vinyl bromide	97		-		70-130	-		
Acrolein	96		-		70-130	-		
Acetone	104		-		70-130	-		
Acetonitrile	98		-		70-130	-		
Trichlorofluoromethane	100		-		70-130	-		
iso-Propyl Alcohol	97		-		70-130	-		
Acrylonitrile	95		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 03 Batch: WG487315-8								
Pentane	94		-		70-130	-		
Ethyl ether	99		-		70-130	-		
1,1-Dichloroethene	98		-		70-130	-		
tert-Butyl Alcohol	88		-		70-130	-		
Methylene chloride	98		-		70-130	-		
3-Chloropropene	76		-		70-130	-		
Carbon disulfide	92		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	105		-		70-130	-		
trans-1,2-Dichloroethene	97		-		70-130	-		
1,1-Dichloroethane	98		-		70-130	-		
Methyl tert butyl ether	101		-		70-130	-		
Vinyl acetate	120		-		70-130	-		
2-Butanone	112		-		70-130	-		
cis-1,2-Dichloroethene	107		-		70-130	-		
Ethyl Acetate	123		-		70-130	-		
Chloroform	113		-		70-130	-		
Tetrahydrofuran	86		-		70-130	-		
2,2-Dichloropropane	88		-		70-130	-		
1,2-Dichloroethane	81		-		70-130	-		
n-Hexane	**140**	Q	-		70-130	-		
Isopropyl Ether	**158**	Q	-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 03 Batch: WG487315-8								
Ethyl-Tert-Butyl-Ether	106		-		70-130	-		
1,1,1-Trichloroethane	107		-		70-130	-		
1,1-Dichloropropene	114		-		70-130	-		
Benzene	106		-		70-130	-		
Carbon tetrachloride	110		-		70-130	-		
Cyclohexane	104		-		70-130	-		
Tertiary-Amyl Methyl Ether	98		-		70-130	-		
Dibromomethane	115		-		70-130	-		
1,2-Dichloropropane	110		-		70-130	-		
Bromodichloromethane	106		-		70-130	-		
1,4-Dioxane	110		-		70-130	-		
Trichloroethene	112		-		70-130	-		
2,2,4-Trimethylpentane	109		-		70-130	-		
Heptane	106		-		70-130	-		
2,4,4-Trimethyl-1-Pentene	103		-		70-130	-		
cis-1,3-Dichloropropene	110		-		70-130	-		
4-Methyl-2-pentanone	114		-		70-130	-		
2,4,4-Trimethyl-2-Pentene	108		-		70-130	-		
trans-1,3-Dichloropropene	92		-		70-130	-		
1,1,2-Trichloroethane	123		-		70-130	-		
Toluene	111		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 03 Batch: WG487315-8								
1,3-Dichloropropane	114		-		70-130	-		
2-Hexanone	111		-		70-130	-		
Dibromochloromethane	101		-		70-130	-		
1,2-Dibromoethane	111		-		70-130	-		
Butyl Acetate	110		-		70-130	-		
Octane	110		-		70-130	-		
Tetrachloroethene	115		-		70-130	-		
1,1,1,2-Tetrachloroethane	109		-		70-130	-		
Chlorobenzene	112		-		70-130	-		
Ethylbenzene	110		-		70-130	-		
p/m-Xylene	111		-		70-130	-		
Bromoform	101		-		70-130	-		
Styrene	114		-		70-130	-		
1,1,2,2-Tetrachloroethane	118		-		70-130	-		
o-Xylene	108		-		70-130	-		
1,2,3-Trichloropropane	93		-		70-130	-		
Nonane (C9)	119		-		70-130	-		
Isopropylbenzene	118		-		70-130	-		
Bromobenzene	114		-		70-130	-		
o-Chlorotoluene	120		-		70-130	-		
n-Propylbenzene	119		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 03 Batch: WG487315-8								
p-Chlorotoluene	111		-		70-130	-		
4-Ethyltoluene	114		-		70-130	-		
1,3,5-Trimethylbenzene	119		-		70-130	-		
tert-Butylbenzene	123		-		70-130	-		
1,2,4-Trimethylbenzene	126		-		70-130	-		
Decane (C10)	114		-		70-130	-		
Benzyl chloride	87		-		70-130	-		
1,3-Dichlorobenzene	124		-		70-130	-		
1,4-Dichlorobenzene	124		-		70-130	-		
sec-Butylbenzene	124		-		70-130	-		
p-Isopropyltoluene	116		-		70-130	-		
1,2-Dichlorobenzene	127		-		70-130	-		
n-Butylbenzene	127		-		70-130	-		
1,2-Dibromo-3-chloropropane	118		-		70-130	-		
Undecane	119		-		70-130	-		
Dodecane (C12)	124		-		70-130	-		
1,2,4-Trichlorobenzene	128		-		70-130	-		
Naphthalene	123		-		70-130	-		
1,2,3-Trichlorobenzene	129		-		70-130	-		
Hexachlorobutadiene	114		-		70-130	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG487315-5 QC Sample: L1113438-03 Client ID: DUP Sample						
Propylene	ND	ND	ppbV	NC		25
Dichlorodifluoromethane	0.379	0.443	ppbV	16		25
Chloromethane	0.431	0.507	ppbV	16		25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	ND	ppbV	NC		25
Vinyl chloride	ND	ND	ppbV	NC		25
1,3-Butadiene	ND	ND	ppbV	NC		25
Bromomethane	ND	ND	ppbV	NC		25
Chloroethane	ND	ND	ppbV	NC		25
Ethyl Alcohol	ND	ND	ppbV	NC		25
Vinyl bromide	ND	ND	ppbV	NC		25
Acetone	2.90	3.24	ppbV	11		25
Trichlorofluoromethane	ND	0.205	ppbV	NC		25
iso-Propyl Alcohol	0.775	0.757	ppbV	2		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
Methylene chloride	ND	ND	ppbV	NC		25
3-Chloropropene	ND	ND	ppbV	NC		25
Carbon disulfide	ND	ND	ppbV	NC		25
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	ND	ND	ppbV	NC		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG487315-5 QC Sample: L1113438-03 Client ID: DUP Sample					
1,1-Dichloroethane	ND	ND	ppbV	NC	25
Methyl tert butyl ether	ND	ND	ppbV	NC	25
Vinyl acetate	ND	ND	ppbV	NC	25
2-Butanone	0.338	0.373	ppbV	10	25
cis-1,2-Dichloroethene	ND	ND	ppbV	NC	25
Ethyl Acetate	ND	ND	ppbV	NC	25
Chloroform	ND	ND	ppbV	NC	25
Tetrahydrofuran	ND	ND	ppbV	NC	25
1,2-Dichloroethane	ND	ND	ppbV	NC	25
n-Hexane	ND	ND	ppbV	NC	25
1,1,1-Trichloroethane	ND	ND	ppbV	NC	25
Benzene	ND	ND	ppbV	NC	25
Carbon tetrachloride	ND	ND	ppbV	NC	25
Cyclohexane	ND	ND	ppbV	NC	25
1,2-Dichloropropane	ND	ND	ppbV	NC	25
Bromodichloromethane	ND	ND	ppbV	NC	25
1,4-Dioxane	ND	ND	ppbV	NC	25
Trichloroethene	ND	ND	ppbV	NC	25
2,2,4-Trimethylpentane	ND	ND	ppbV	NC	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG487315-5 QC Sample: L1113438-03 Client ID: DUP Sample					
Heptane	ND	ND	ppbV	NC	25
cis-1,3-Dichloropropene	ND	ND	ppbV	NC	25
4-Methyl-2-pentanone	ND	ND	ppbV	NC	25
trans-1,3-Dichloropropene	ND	ND	ppbV	NC	25
1,1,2-Trichloroethane	ND	ND	ppbV	NC	25
Toluene	ND	0.259	ppbV	NC	25
2-Hexanone	ND	ND	ppbV	NC	25
Dibromochloromethane	ND	ND	ppbV	NC	25
1,2-Dibromoethane	ND	ND	ppbV	NC	25
Tetrachloroethene	ND	ND	ppbV	NC	25
Chlorobenzene	ND	ND	ppbV	NC	25
Ethylbenzene	ND	ND	ppbV	NC	25
p/m-Xylene	ND	ND	ppbV	NC	25
Bromoform	ND	ND	ppbV	NC	25
Styrene	ND	ND	ppbV	NC	25
1,1,2,2-Tetrachloroethane	ND	ND	ppbV	NC	25
o-Xylene	ND	ND	ppbV	NC	25
4-Ethyltoluene	ND	ND	ppbV	NC	25
1,3,5-Trimethylbenzene	ND	ND	ppbV	NC	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Volatile Organics in Air (Low Level) - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG487315-5 QC Sample: L1113438-03 Client ID: DUP Sample					
1,2,4-Trimethylbenzene	ND	ND	ppbV	NC	25
Benzyl chloride	ND	ND	ppbV	NC	25
1,3-Dichlorobenzene	ND	ND	ppbV	NC	25
1,4-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2-Dichlorobenzene	ND	ND	ppbV	NC	25
1,2,4-Trichlorobenzene	ND	ND	ppbV	NC	25
Hexachlorobutadiene	ND	ND	ppbV	NC	25

Project Name: TIDEWATER **Lab Number:** L1113440

Project Number: 43654-30 **Report Date:** 09/07/11

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Cleaning Batch ID	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Out mL/min	Flow In mL/min	% RSD
L1113440-01	SUMMA - UPGRAD.	0159	#90 SV		-	-	3.9	4.1	5
L1113440-01	SUMMA - UPGRAD.	537	2.7L Can	L1111691	-29.5	-7.5	-	-	-
L1113440-02	SUMMA - DOWNGRAD.	0476	#16 AMB		-	-	3.8	4.1	8
L1113440-02	SUMMA - DOWNGRAD.	231	2.7L Can	L1111691	-28.7	-1.7	-	-	-
L1113440-03	BLANK	364	2.7L Can	L1111691	-29.5	-29.5	-	-	-

Air Volatiles Can Certification

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1111691
Report Date: 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01
Client ID: CAN 145 SHELF 7
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/04/11 17:20
Analyst: RY

Date Collected: 08/02/11 00:00
Date Received: 08/02/11
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air (Low Level) - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.860	--		1
Propane	ND	0.200	--	ND	0.361	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	2.50	--	ND	4.71	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.200	--	ND	0.434	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION ***Lab Number:*** L1111691

Project Number: CANISTER QC BAT ***Report Date:*** 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01 Date Collected: 08/02/11 00:00

Client ID: CAN 145 SHELF 7 Date Received: 08/02/11

Sample Location: Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air (Low Level) - Mansfield Lab								
Methylene chloride	ND	1.00	--	ND	3.47	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	0.200	--	ND	0.704	--		1
2-Butanone	ND	0.200	--	ND	0.590	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.200	--	ND	0.590	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1

Project Name: BATCH CANISTER CERTIFICATION ***Lab Number:*** L1111691

Project Number: CANISTER QC BAT ***Report Date:*** 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01 Date Collected: 08/02/11 00:00

Client ID: CAN 145 SHELF 7 Date Received: 08/02/11

Sample Location: Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air (Low Level) - Mansfield Lab								
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
2,4,4-trimethyl-1-pentene	ND	0.500	--	ND	2.29	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.200	--	ND	0.820	--		1
2,4,4-trimethyl-2-pentene	ND	0.500	--	ND	2.29	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.20	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1111691
Report Date: 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01
Client ID: CAN 145 SHELF 7
Sample Location:
Date Collected: 08/02/11 00:00
Date Received: 08/02/11
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air (Low Level) - Mansfield Lab								
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethybenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1111691
Report Date: 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01
Client ID: CAN 145 SHELF 7
Sample Location:
Date Collected: 08/02/11 00:00
Date Received: 08/02/11
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air (Low Level) - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	114		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1111691
Report Date: 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01
Client ID: CAN 145 SHELF 7
Sample Location:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/04/11 17:20
Analyst: RY

Date Collected: 08/02/11 00:00
Date Received: 08/02/11
Field Prep: Not Specified

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.050	--	ND	0.247	--		1
Chloromethane	ND	0.500	--	ND	1.03	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.020	--	ND	0.053	--		1
Acetone	ND	2.00	--	ND	4.75	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.08	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	1.00	--	ND	3.47	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
Halothane	ND	0.050	--	ND	0.404	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.020	--	ND	0.072	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION ***Lab Number:*** L1111691

Project Number: CANISTER QC BAT ***Report Date:*** 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01 Date Collected: 08/02/11 00:00

Client ID: CAN 145 SHELF 7 Date Received: 08/02/11

Sample Location: Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.020	--	ND	0.092	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.500	--	ND	2.46	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.500	--	ND	2.74	--		1
p-Isopropyltoluene	ND	0.500	--	ND	2.74	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.500	--	ND	2.74	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1111691
Report Date: 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01
Client ID: CAN 145 SHELF 7
Sample Location:
Date Collected: 08/02/11 00:00
Date Received: 08/02/11
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1111691
Report Date: 09/07/11

Air Canister Certification Results

Lab ID: L1111691-01
Client ID: CAN 145 SHELF 7
Sample Location:
Date Collected: 08/02/11 00:00
Date Received: 08/02/11
Field Prep: Not Specified

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	84		60-140
bromochloromethane	112		60-140
chlorobenzene-d5	83		60-140

AIR Petro Can Certification

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L1111691

Project Number: CANISTER QC BAT **Report Date:** 09/07/11

AIR CAN CERTIFICATION RESULTS

Lab ID:	L1111691-01	Date Collected:	08/02/11 00:00
Client ID:	CAN 145 SHELF 7	Date Received:	08/02/11
Sample Location:	Not Specified	Field Prep:	Not Specified
Matrix:	Air		
Analytical Method:	96,APH		
Analytical Date:	08/05/11 20:44		
Analyst:	RY		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbons in Air - Mansfield Lab						
1,3-Butadiene	ND		ug/m3	2.0	--	1
Methyl tert butyl ether	ND		ug/m3	2.0	--	1
Benzene	ND		ug/m3	2.0	--	1
Toluene	ND		ug/m3	2.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/m3	12	--	1
Ethylbenzene	ND		ug/m3	2.0	--	1
p/m-Xylene	ND		ug/m3	4.0	--	1
o-Xylene	ND		ug/m3	2.0	--	1
Naphthalene	ND		ug/m3	2.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/m3	14	--	1
C9-C10 Aromatics Total	ND		ug/m3	10	--	1

Project Name: TIDEWATER
Project Number: 43654-30

Lab Number: L1113440
Report Date: 09/07/11

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information	Custody Seal
Cooler	
N/A	Present/Intact

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1113440-01A	Canister - 2.7 Liter	N/A	NA		Y	Present/Intact	TO15-LL(30)
L1113440-02A	Canister - 2.7 Liter	N/A	NA		Y	Present/Intact	TO15-LL(30)
L1113440-03A	Canister - 2.7 Liter	N/A	NA		Y	Present/Intact	TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	TIDEWATER	**Lab Number:**	L1113440
Project Number:	43654-30	**Report Date:**	09/07/11

GLOSSARY

Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
C	- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
D	- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
E	- Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
G	- The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
H	- The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
I	- The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.
M	- Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
P	- The RPD between the results for the two columns exceeds the method-specified criteria.
Q	- The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report

Project Name:	TIDEWATER	**Lab Number:**	L1113440
Project Number:	43654-30	**Report Date:**	09/07/11

Data Qualifiers

than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised August 4, 2011 – Mansfield Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0141.

Wastewater/Non-Potable Water (Inorganic Parameters: pH, Turbidity, Conductivity, Alkalinity, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Vanadium, Zinc, Total Residue (Solids), Total Suspended Solids (non-filterable), Total Cyanide. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Acid Extractables, Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, PAHs, Haloethers, Chlorinated Hydrocarbons, Volatile Organics.)

Solid Waste/Soil (Inorganic Parameters: pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Organic Carbon, Total Cyanide, Corrosivity, TCLP 1311. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Volatile Organics, Acid Extractables, Benzidines, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Florida Department of Health Certificate/Lab ID: E87814. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, SM2540G.)

Solid & Chemical Materials (Inorganic Parameters: 6020, 7470, 7471, 9045. Organic Parameters: EPA 8260, 8270, 8082, 8081.)

Air & Emissions (EPA TO-15.)

Louisiana Department of Environmental Quality Certificate/Lab ID: 03090. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA 180.1, 245.7, 1631E, 3020, 6020A, 7470A, 9040, 9050A, SM2320B, 2540D, 2540G, 4500H-B, Organic Parameters: EPA 3510C, 3580A, 3630C, 3640A, 3660B, 3665A, 5030B, 8015D, 3570, 8081B, 8082A, 8260B, 8270C, 8270D.)

Solid & Chemical Materials (Inorganic Parameters: EPA 1311, 3050, 3051A, 3060A, 6020A, 7196A, 7470A, 7471B, 7474, 9040B, 9045C, 9060. Organic Parameters: EPA 3540C, 3570B, 3580A, 3630C, 3640A, 3660, 3665A, 5035, 8015D, 8081B, 8082A, 8260B, 8270C, 8270D.)

Biological Tissue (Inorganic Parameters: EPA 6020A. Organic Parameters: EPA 3570, 3510C, 3610B, 3630C, 3640A, 8270C, 8270D.)

Air & Emissions (EPA TO-15.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2206. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: EPA, 245.1, 245.7, 1631E, 180.1, 6020A, 7470A, 9040B, 9050A, SM2540D, 2540G, 4500H+B, 2320B. Organic Parameters: EPA 8081, 8082, 8260B, 8270C.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 1311, 1312, 3050B, 3051A, 3060A, 6020A, 7470A, 7471A, 9040B, 9045C, 7196A. Organic Parameters: SW-846 3540C, 3580, 3630C, 3640A, 3660B, 3665A, 5035, 8260B, 8270C, 8015D, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA015. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SW-846 1312, 3010, 3020A, 3015, SM2320B, SM2540D, 2540G, , EPA 180.1, 1631E, SW-846 7470A, 9040B, 6020. Organic Parameters: SW-846 3510C, 3580A, 5030B, 5035L, 5035H, 3630C, 3640C, 3660B, 3665A, 8015B 8081A, 8082, 8260B, 8270C)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6020, 1311, 1312, 3050B, 3051, 3060A, 7196A, 7470A, 7471A, 9040B, 9045C, 9050A, 9060. Organic Parameters: SW-846 3540C, 3570, 3580A, 5030B, 5035L, 5035H, 3630C, 3640A, 3660B, 3665A, 8081A, 8082, 8260B, 8270C, 8015B.)

Atmospheric Organic Parameters (EPA TO-15)

Biological Tissue (Inorganic Parameters: SW-846 6020 Organic Parameters: SW-846 8270C, 3510C, 3570, 3610C, 3630C, 3640A)

New York Department of Health Certificate/Lab ID: 11627. ***NELAP Accredited.***

Non-Potable Water (Inorganic Parameters: SM2320B, SM2540D, EPA 200.8, 6020, 1631E, 245.1, 245.7, 7470A, 9014, 9040B, 9050, 120.1, 4500CN-E, 4500H-B, EPA 376.2, 180.1, 3020A. Organic Parameters: EPA 8260B, 8270C, 8081A, 8082, 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 6020, 7196A, 3060A, 7471A, 7474, 9014, 9040B, 9045C, 9010B. Organic Parameters: EPA 8260B, 8270C, 8081A, DRO 8015B, 8082, 1311, 1312, 3050B, 3580, 3570, 3051, 5035, 5030B.)

Air & Emissions (EPA TO-15.)

Rhode Island Department of Health Certificate/Lab ID: LAO00299. ***NELAP Accredited via LA-DEQ.***

Refer to LA-DEQ Certificate for Non-Potable Water.

Texas Commission of Environmental Quality Certificate/Lab ID: T104704419-08-TX. ***NELAP Accredited.***

Solid & Chemical Materials (Inorganic Parameters: EPA 6020, 7470, 7471, 1311, 7196, 9040, 9045, 9060. Organic Parameters: EPA 8015, 8270, 8260, 8081, 8082.)

Air (Organic Parameters: EPA TO-15)

Washington State Department of Ecology Certificate/Lab ID: C954. *Non-Potable Water* (Inorganic Parameters: SM2540D, 2510B, EPA 120.1, 180.1, 1631E, 245.7.)

Solid & Chemical Materials (Inorganic Parameters: EPA 9040, 9060, 6020, 7470, 7471, 7474. Organic Parameters: EPA 8081, 8082, 8015 Mod, 8270, 8260.)

U.S. Army Corps of Engineers

Department of Defense Certificate/Lab ID: L2217.01.

Non-Potable Water (Inorganic Parameters: EPA 6020A, SM4500H-B. Organic Parameters: 3020A, 3510C, 5030B, 8260B, 8270C, 8270C-ALK-PAH, 8082, 8081A, 8015D-SHC.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 3050B, 6020A, 7471A, 9045C, 9060, SM 2540G, ASTM D422-63. Organic Parameters: EPA 3580A, 3570, 3540C, 5035A, 8260B, 8270C, 8270-ALK-PAH, 8082, 8081A, 8015D-SHC, 8015-DRO.

Air & Emissions (EPA TO-15.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **8270C:** Biphenyl. **TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 2-Methylnaphthalene, 1-Methylnaphthalene.

AIR ANALYSIS

ALPHA ANALYTICAL

CHAIN OF CUSTODY

PAGE 1 OF 1

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1113440

Client Information

Client: MEG KILPATRICK, GZA
Address: 530 BROADWAY
PROVIDENCE, RI 02909
Phone: 401-421-4140
Fax: –
Email: meg.kilpatrick@gza.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: TIDEWATER
Project Location: RI
Project #: 43654-30
Project Manager: MSK
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager) sophia.narkiewicz@gza.com ALSO

Billing Information

☑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria
RI		

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-14A by TO-15	TO-15 Modified	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)
13440.1	SUMMA-upgrad.	8/25/11	656	1507	-29.93	-7.42	AA	SDN	9	537	159		✓						
2	SUMMA-downgrad.	8/25/11	720	1510	-29.12	-7.34	AA	SDN	9	231	476		✓						
3	BLANK	8/25/11	–	–	-29.5	-29.5	AA	SDN	9	364	–		✓						

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
Sophia Narkiewicz	8/26/11 14:00	P. Gilbert	8/30/11 1835
P. Gilbert	8/30/11 1450	[illegible]	8/30/11 1450

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Form No: 101-02 (rev. 5-Jan-09)

APPENDIX F

DISPOSAL DOCUMENTATION

Waste Tracking Detail Report

Manifest Number 004001325fle

CLHB Receiving Facility: **Braintree, MA Facility**

CLHB Generator ID: **NAR100 Narragansett Electric Company Pawtucket RI 02860**

Manifest Number:	004001325FLE	Mnfst. Doc. No:		Gen. Sign. Date:	8/26/2011
Work Order:	RI3724538	Generator EPA Id:	RIP000032905	Date Recvd:	8/26/2011

Line: 1 **Profile No:** U50615B_R006 **Manifested Cntnrs:** 1 TT **Total Qty:** 13181 K **Inbound Mgt Method Code** H141

Tracking No: **24938836** **Code:** **CHSL** **Wgt:** **17680** **Wgt UOM:** **LBS**

Site	Manifest No	Activity	Activity Date	Final Mgt Method Code
Grassy Mountain, UT Facility	004914871FLE	SHIP	9/1/2011	
Grassy Mountain, UT Facility		Landfill	10/7/2011	H132

Clean Harbors of Braintree, Inc.
1 Hill Avenue
Braintree, MA 02184

(781) 380-7100

Date - 8-26-11

Generator - Narri Electric

H.W.F.

Trailer #/Can # 4164

Gross 50060 lb 12:29 08/26/2011

TARE 41180 lb 14:35 08/26/2011

NET ~~12680~~ 17680

Manifest # 004001325 FLE

Drivers Name - Co # A. Brito

8018K

Driver ON OFF

Recorded

SW

CHI-214 (Rev. 8/07)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) RI3724536-002 SC PPW 3/3/2011 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: RIP0000032905
2. Page 1 of: 1
3. Emergency Response Phone: (800)483-3718
4. Manifest Tracking Number: 004001325 FLE

GENERATOR

5. Generator's Name and Mailing Address
Narragansett Electric Company
40 Sylvan Road
Waltham, MA 02451
Generator's Phone: (781)907-3647 ATTN:Susan Brochu

Generator's Site Address (if different than mailing address)
200 Taft Street
Pawtucket,RI 02860

6. Transporter 1 Company Name: **Clean Harbors Environmental Services Inc**
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors of Braintree Inc
1 Hill Avenue
Braintree. MA 02184
Facility's Phone: (781)380-7100
U.S. EPA ID Number: MAD053452637

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-DOT REGULATED PCBS. (SOIL. PCBS)	001	TT	13.181	K	MA02 R007
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.U50615B_R006 TK # 4164

OUT OF SERVICE DATE: 8-26-11

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: AGENT FOR THE GENERATOR FRANCISCO BRITO
Signature: Francisco Brito
Month: 8 Day: 26 Year: 11

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Date leaving U.S.:
Transporter signature (for exports only):

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Adriano Brito
Signature: Adriano Brito
Month: 8 Day: 26 Year: 11
Transporter 2 Printed/Typed Name:
Signature:
Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
U.S. EPA ID Number:
18b. Alternate Facility (or Generator)
Facility's Phone:
Month: Day: Year:
18c. Signature of Alternate Facility (or Generator)

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Huyen Hoang
Signature: Huyen Hoang
Month: 8 Day: 26 Year: 11

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

A552

RI3645268-001 SC PPW 3/3/2011

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number RIP0000032905	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 004001470 FLE

5. Generator's Name and Mailing Address
Narragansett Electric Company
40 Sylvan Road
Waltham. MA 02451
Generator's Phone: (781) 907-3647 ATTN:Susan Brochu

Generator's Site Address (if different than mailing address)
200 Taft Street
Pawtucket,RI 02862
U.S. EPA ID Number MAD039322250

6. Transporter 1 Company Name
Clean Harbors Environmental Services Inc
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors of Braintree Inc
1 Hill Avenue
Braintree. MA 02184
Facility's Phone: (781) 380-7100
U.S. EPA ID Number MAD053452637

	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
GENERATOR	X	1. RQ. UN3432. POLYCHLORINATED BIPHENYLS. SOLID. 9. PG III (PCBS)	02	DM	220	K	MA02	R007	
		2. NON DOT REGULATED MATERIAL. (TSCA PCB'S)	01	DM	139	K	MA02	R007	
		3.							
		4.							

OUT OF SERVICE DATE: 9/19/11

14. Special Handling Instructions and Additional Information
1. U50615_R006 ERG#171 unique ID# 1470-1
2. U50613_R006 unique ID# 1470-2

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.
Generator's/Offeror's Printed/Typed Name Victor DELGADO Signature Month 9 Day 19 Year 11

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.: Month 9 Day 15 Year 11

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name Mike McLaughlin Signature
Transporter 2 Printed/Typed Name Signature

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number: U.S. EPA ID Number
18b. Alternate Facility (or Generator) Month Day Year
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H141 2. H141 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Hiuyen Hoang Signature Month 9 Day 19 Year 11

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIR