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March 23, 2016 GZA File No: 01.00171521.42

Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup Northeast Regional Office 205B Lowell Street Wilmington, Massachusetts 01887

Re: Immediate Response Action Status Report No. 1
Underground Storage Tank Removal
(Former) Everett Staging Yard
1 Horizon Way
Everett, Massachusetts
Release Tracking Number 3-33284

To Whom It May Concern:

GZA GeoEnvironmental, Inc. (GZA), on behalf of Wynn MA, LLC (Wynn MA), has prepared this Immediate Response Action (IRA) Status Report to describe those Response Actions pursuant to the Massachusetts Contingency Plan (MCP) completed to date to address contamination associated with a recently removed underground storage tank (UST) at the above-referenced disposal site (Site). The UST was encountered during ongoing Release Abatement Measure (RAM) activities being conducted at the disposal site under RTN 3-13341. An IRA Plan was submitted to the Massachusetts Department of Environmental Protection (MassDEP) for RTN 3-33284 on January 27, 2016. Since RTN 3-13341 is a Public Involvement Plan (PIP) site under the MCP, the IRA Plan was presented at a February 1, 2016, public meeting for review and comment. No comments were received.

This IRA Status Report has been prepared in accordance with 310 CMR 40.0425 of the MCP, and with the Limitations in Appendix A. This IRA Status Report will be submitted electronically through MassDEP's eDEP online filing system. A copy of the IRA transmittal form (BWSC-105) is included in Appendix B.

EXECUTIVE SUMMARY

On November 25, 2015, field screening in the vicinity of a recently removed UST at the Site indicated total volatile organic compound (VOC) levels that triggered a 72-hour notification requirement to the MassDEP under Section 40.0313(2) of the MCP. The location of the former UST is near the CES-2 Area, which is the subject of remediation under a RAM Plan submitted for RTN 3-13341.



An IRA Plan was submitted on January 27, 2016, outlining actions to be taken in response to the release. In late February, contaminated soil from within the tank grave was excavated and stockpiled on-site for characterization and disposal. Confirmatory soil samples taken from the sidewalls and bottom of the UST did not indicated residual petroleum contamination above applicable MCP standards.

SITE AND SURROUNDING AREA CONDITIONS

The IRA disposal site is a small portion of the property at 1 Horizon Way in Everett ("the property;" Figure 1). The location of the former UST is depicted on Figure 2. The approximate latitude and longitude for the location of the UST are 42.3945 degrees north and 71.0705 degrees west, respectively. The Universal Transverse Mercator (UTM) coordinates are 4,695,655 meters north and 329,585 meters east. Access to the property is limited by the presence of a chain-link fence with several locked gates. The ground surface at the property is generally bituminous pavement, unpaved, or compacted coarse gravel. The ground surface at the property is generally flat with a gentle slope toward the southwest. Based on an April 2013 survey prepared by Harry R. Feldman, Inc. (Professional Land Surveyors), ground surface elevations on the property range from approximately 8 to 13 feet NAVD88.

The 1 Horizon Way property is adjoined to the northeast by a vehicle maintenance and repair facility operated by the Massachusetts Bay Transportation Authority (MBTA); to the southeast by properties along Alford Street, including a vacant commercial building and facilities operated by the Boston Water and Sewer Commission (BWSC) and the Massachusetts Water Resources Authority (MWRA); to the southwest by the Mystic River; and to the northwest by railroad tracks for the MBTA Commuter Rail, beyond which are several large commercial/retail buildings associated with the Gateway Center.

The property is located within the Boston Basin, a regional depression of bedrock consisting primarily of Cambridge Argillite, a partially metamorphosed siltstone. Property conditions generally consist of fill over a variable sequence of naturally deposited organics, sand and gravel, and silty clay over weathered rock and bedrock. Filling over naturally deposited materials occurred in the area of the property from the late 1800s through the early 1960s. More recent naturally deposited sediments along the shoreline include sand, silt, and organics.

Depth to groundwater at the property ranges from approximately 4 to 10 feet. Groundwater at the property flows generally toward the east on the southern portion of the property and generally toward the south on the northern portion of the property. Depth to water in the area of the UST is approximately 10 feet, while groundwater in this area is anticipated to flow easterly, toward the Mystic River.

According to a Massachusetts Geographic Information System (MassGIS) map, the property is not located in or within 500 feet of a Zone II public water supply, a potentially productive aquifer, a Zone A surface water body, an Interim Wellhead Protection Area, a protected wetlands habitat, or an Area of Critical Environmental Concern. Protected open space associated with Gateway Park is located approximately 400 feet to the northwest of the property.

Soil and groundwater at the property have been contaminated by historic activities, including the former use of the property as a chemical manufacturing facility. On August 18, 2015, Wynn MA and GZA submitted a RAM Plan under RTN 3-13341 documenting MCP Response Actions to be completed prior to the redevelopment of the property. RAM activities have been ongoing at the property. The objective of the activities described in the RAM Plan is to reduce the



risks associated with soil and groundwater contamination in the three areas of the property previously identified as the A-5 Area, the CES-2 Area, and the Low pH Area. Soils containing elevated concentrations of arsenic and lead in the A-5 Area have been excavated and disposed of off-site. Elevated concentrations of arsenic in soil and groundwater in the CES-2 Area are also being addressed through the excavation and disposal of soil off-site. Soil and groundwater in the Low pH Area are being treated using in-situ solidification/stabilization (ISS) to both reduce the ability of groundwater to flow through the Area, and raise the pH to limit the further mobilization of metals from soil to groundwater.

RELEASE HISTORY

On November 9, 2015, during excavation activities being conducted near the CES-2 Area under the RAM for RTN 3 13351, an approximately 5,000-gallon, single-wall steel UST was uncovered. The UST was not within the target remediation zone of the CES-2 Area, but was within an adjacent part of the property being excavated to create a ramp down to the target remediation zone. The UST measured approximately 6 feet by 27 feet, with an estimated volume of 5,000 gallons. The tank was encountered at a depth of approximately 6.5 feet below the existing ground surface, beneath an approximately 1-foot thick concrete slab. The UST appeared to be filled with a mixture of soil and groundwater that exhibited a petroleum-like odor. Representative samples of the soil and water from within the UST were obtained and submitted to ESS Laboratory (ESS) of Cranston, Rhode Island, for analysis of VOCs, semi-volatile organic compounds (SVOCs), pH, total petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), MCP 14 metals, conductivity and/or reactivity.

Removal of the UST contents was initiated on November 24, 2015. Liquid within the UST was removed using a vacuum truck. Approximately 1,253 gallons of liquid was transported by Clean Harbors Environmental Services (CHES) under hazardous waste manifest to CHES' facility in South Portland, Maine The sludge within the UST was excavated into three lined roll-off containers for treatment to remove excess liquids (through the addition of wood chips) before off-site disposal (see below). Waste manifests for these materials were included in the IRA Plan.

On November 25, 2015, the UST was removed from the ground. Upon removal, the UST was observed to be in poor condition, and evidence of petroleum-impacted soils was observed in the tank grave. No non-aqueous phase liquid (NAPL) was observed in the excavation, and groundwater seen entering the excavation from the sidewalls did not appear to exhibit a sheen. Jar-headspace screening of soils using a photoionization detector (PID) indicted a maximum total VOC reading of 111 parts per million by volume (ppmv). This sample was obtained from greater than 2 feet below ground surface and within 10 feet of the UST, thereby triggering a 72-hour notification requirement to MassDEP under Section 40.0313(2) of the MCP. Later that day, GZA contacted Mr. Victor Fonkem at MassDEP's Northeast Regional Office (NERO) to report the release on behalf of Wynn. Mr. Fonkem issued RTN 3-33284 for the release and verbally authorized an IRA consisting of the excavation and off-site disposal of petroleum-impacted soil.

An IRA Plan was submitted to the Massachusetts Department of Environmental Protection for RTN 3-33284 on January 27, 2016.



IRA STATUS REPORT

The following sections provide IRA Plan information in accordance with 310 CMR 40.0425.

THE STATUS OF ASSESSMENT AND/OR REMEDIAL ACTIONS [310 CMR 40.0425(3)(a)]:

In addition to the IRA activities discussed in the Release History section above, the following activities have been conducted with respect to the UST.

On December 3, 2015, the Everett Fire Department inspected the UST, and approved off-site disposal of the tank. On December 8, 2015, the UST was transported to the James G. Grant Company, Inc., of Readville, Massachusetts, for disposal. Copies of the UST removal permit and disposal receipt were included with the IRA Plan.

On December 10 and 11, 2015, the three roll-offs containing soil removed from the UST were transported off-site. Approximately 45 cubic yards of impacted soil were transported under hazardous waste manifest to CHES' Braintree, Massachusetts facility. A copy of the manifest was included with the IRA Plan.

The tank grave was lined with polyethylene sheeting, and was backfilled with clean material to allow for access across the area for continued remediation of the CES-2 Area. IRA activities were then temporarily delayed until the IRA Plan could be filed and reviewed through the PIP process. As previously noted, the IRA Plan was filed on January 27, 2016.

On February 23, 2016, IRA activities recommenced. The backfill material previously placed within the excavation was excavated and stockpiled separately. Groundwater was encountered during the excavation; however, no NAPL or sheen was observed on the groundwater. In order to dewater the excavation, a temporary sump was installed adjacent to the excavation area, and groundwater was pumped to the groundwater treatment system operating as part of the RAM being conducted under RTN 3-13341. Approximately 125 cubic yards of petroleum impacted soil was removed from the excavation and transported to the on-site materials management area (MMA) for temporary stockpiling and characterization for off-Site disposal. Representative soil samples from the four sidewalls and the bottom of the excavation were collected, and were submitted to ESS for analysis for extractable petroleum hydrocarbons (EPH) with target polycyclic aromatic hydrocarbons (PAHs) and volatile petroleum hydrocarbons (VPH) with target VOCs. Result of the analyses are summarized on Table 1, and the laboratory analytical report is included as Appendix C. Several EPH range hydrocarbon fractions and PAHs were detected; however, the results were below the applicable Method 1 S-1/GW-2 Standards. No VPH range compounds were detected.

Upon completion of the excavation activities, the excavation was backfilled to the pre-existing surface grade.

A representative sample of the soil stockpiled from the UST excavation was collected on March 14, 2016, and submitted to ESS for analysis for disposal characterization. Once the results of these analyses have been received and the stockpiled soil has been disposed of off-Site, an IRA Completion Report will be submitted.

GZA anticipates that RTN 3-33284 will be linked to the RTN for the larger property as part of the IRA Completion Report, and that any further MCP Response Actions in the IRA area will be conducted under RTN 3-13341. These additional response actions will include the installation of at least one groundwater monitoring well at, or downgradient of, the



former UST location. A groundwater sample will be collected from the monitoring well(s) and submitted to ESS for analysis of EPH and VPH.

ANY SIGNIFICANT NEW SITE INFORMATION OR DATA [310 CMR 40.0425(3)(b)]

No new significant information or data has been developed for RTN 3-33284, with the exception of the previously noted confirmatory soil data.

DETAILS OF AND/OR PLANS FOR THE MANAGEMENT OF REMEDIATION WASTE, REMEDIAL WASTEWATER AND /OR REMEDIAL ADDITIVES [310 CMR 40.0425(3)(c)]

As previously noted, approximately 125 cubic yards of petroleum-impacted soil was generated during the excavation and stockpiled on-site. The stockpiled soil was placed on, and covered by, polyethylene sheeting pending disposal characterization sampling and eventual off-site disposal.

Soil transported off-site will be handled in accordance with the management procedures for remediation waste specified in the MCP at 310 CMR 40.0030. Each load of soil transported for disposal will be accompanied by the appropriate documentation. The documentation will be prepared and stamped by GZA's Licensed Site Professional. Wynn MA will be designated as the soil generator. The endorsed tracking/receipt forms issued by the licensed disposal facility will be included in the IRA Completion Report.

Groundwater encountered during the excavation was treated using the on-site groundwater treatment system operating under the RAM for RTN 3-13341, and was discharged on-site.

ANY OTHER INFORMATION REQUIRED BY THE DEPARTMENT IN ITS APPROVAL OF THE REMEDIATION RESPONSE ACTION PLAN [310 CMR 40.0425(3)(d)]

No other information was required by MassDEP in its approval of the IRA Plan.

AN LSP OPINION AS TO WHETHER THE IMMEDIATE RESPONSE ACTION IS BEING CONDUCTED IN CONFORMANCE WITH THE IMMEDIATE RESPONSE ACTION PLAN AND ANY CONDITIONS OF APPROVAL ESTABLISHED BY THE DEPARTMENT [310 CMR 40.0425(3)(e)]

The LSP certification is provided on the BWSC-105 transmittal form included in Appendix A.



Please feel free to contact any of the undersigned at (781) 278-3700 if you have any questions or require additional information.

GZA GEOENVIRONMENTAL, INC.

David E. Leone

Senior Project Manager

Albert J. Ricciardelli Consultant/Reviewer

Lawrence Feldman, LS

Senior Principal

Attachments: Table 1 – Soil Analytical Data

Figure 1 – Site Locus Figure 2 – Site Plan Appendix A – Limitations

Appendix B – BWSC Form 105

Appendix C – Laboratory Analytical Results

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TABLE

TABLE 1 SOIL ANALYTICAL RESULTS CES-2 UST Excavation 1 Horizon Way Everett, Massachusetts

Sample Name:	UST_NW_02-24-16	UST_BTM_02-24-16	UST_SW_02-24-16	UST_EW_02-24-16	UST_WW_02-24-16	MCP S	tandards
Sample Date:	2/24/2016	2/24/2016	2/24/2016	2/24/2016	2/24/2016	RCS-2	Methd 1 S-1/GW-2
Extractable Petroleum Hydrocarbons							
C9-C18 Aliphatics	<52.6	<38.7	<58.8	<36.5	<36.8	3000	1000
C11-C22 Aromatics	128	<38.7	120	<36.5	<36.8	3000	1000
C19-C36 Aliphatics	134	<38.7	61.4	57.3	<36.8	5000	3000
2-Methylnaphthalene	<0.7	<0.52	<0.78	<0.49	<0.49	80	80
Acenaphthene	<1.4	<1.03	<1.57	<0.97	<0.98	3000	1000
Acenaphthylene	<0.7	<0.52	<0.78	<0.49	<0.49	10	600
Anthracene	<1.4	<1.03	<1.57	<0.97	<0.98	3000	1000
Benzo(a)anthracene	<1.4	<1.03	1.65	<0.97	<0.98	40	7
Benzo(a)pyrene	<1.4	<1.03	<1.57	<0.97	<0.98	4	2
Benzo(b)fluoranthene	<1.4	<1.03	1.69	<0.97	<0.98	40	7
Benzo(g,h,i)perylene	<1.4	<1.03	<1.57	<0.97	<0.98	3000	1000
Benzo(k)fluoranthene	<1.4	<1.03	<1.57	<0.97	<0.98	400	70
Chrysene	<1.4	<1.03	<1.57	<0.97	<0.98	400	70
Dibenzo(a,h)Anthracene	<0.7	<0.52	<0.78	<0.49	<0.49	4	0.7
Fluoranthene	<1.4	<1.03	5.04	1.41	<0.98	3000	1000
Fluorene	<1.4	<1.03	<1.57	<0.97	<0.98	3000	1000
Indeno(1,2,3-cd)Pyrene	<1.4	<1.03	<1.57	<0.97	<0.98	40	7
Naphthalene	<1.4	<1.03	<1.57	<0.97	<0.98	40	20
Phenanthrene	<1.4	<1.03	2.68	1.45	<0.98	1000	500
Pyrene	<1.4	<1.03	4.05	1.15	<0.98	3000	1000
Volatile Petroleum Hydrocarbon							
C5-C8 Aliphatics	<31.6	<19.2	<34.7	<8.71	<16.1	500	100
C9-C10 Aromatics	<31.6	<19.2	<34.7	<8.71	<16.1	500	100
C9-C12 Aliphatics	<31.6	<19.2	<34.7	<8.71	<16.1	3000	1000
Benzene	< 0.63	<0.38	< 0.69	<0.17	<0.32	200	40
Ethylbenzene	< 0.63	<0.38	< 0.69	<0.17	<0.32	1000	500
Methyl tert-Butyl Ether	<0.16	<0.1	<0.17	<0.04	<0.08	100	100
Naphthalene	< 0.63	<0.38	< 0.69	0.42	<0.32	40	20
Toluene	< 0.63	<0.38	< 0.69	<0.17	<0.32	1000	500
Xylene O	<0.63	<0.38	<0.69	<0.17	<0.32	100	100
Xylene P,M	<1.26	<0.77	<1.39	<0.35	<0.64	100	100

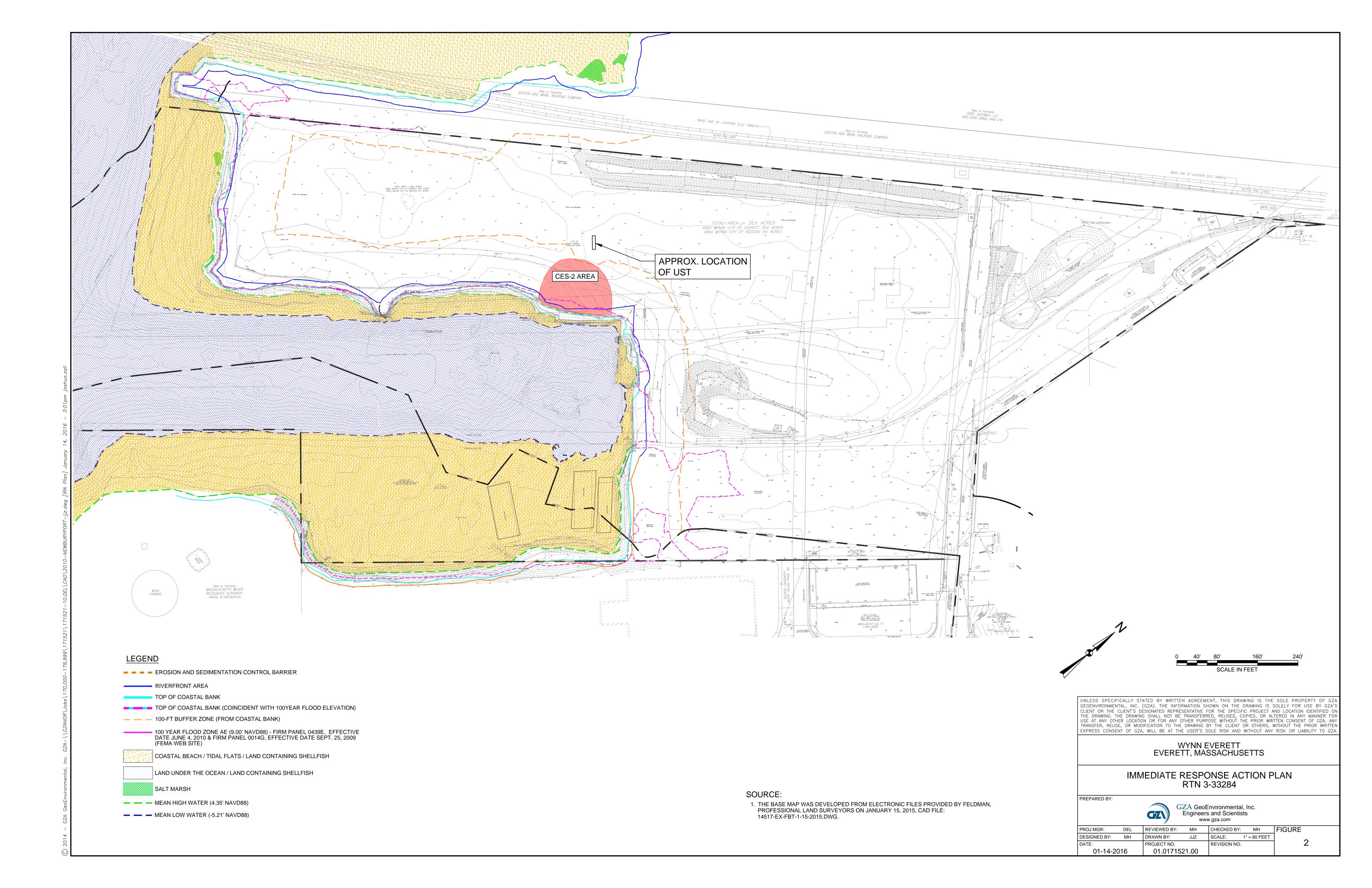
Notes:

All values in milligrams per kilogram (mg/kg)

MCP: Massachusetts Contingency Plan (MCP, 310 CMR 40.0000)



FIGURES





APPENDIX A

LIMITATIONS

GEOHYDROLOGICAL LIMITATIONS



USE OF REPORT

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

STANDARD OF CARE

- 2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in the Proposal for Services and/or Report and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. Conditions other than described in this report may be found at the subject location(s).
- 3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed 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 its study. Additionally, GZA makes no warranty that any response action or recommended action will achieve all of its objectives or that the findings of this study will be upheld by a local, state or federal agency.
- 4. In conducting our work, GZA relied upon certain information made available by public agencies, Client and/or others. GZA did not attempt to independently verify the accuracy or completeness of that information. Inconsistencies in this information which we have noted, if any, are discussed in the Report.

SUBSURFACE CONDITIONS

- 5. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs. The nature and extent of variations between these explorations may not become evident until further exploration or construction. If variations or other latent conditions then become evident, it will be necessary to reevaluate the conclusions and recommendations of this report.
- 6. Water level readings have been made, as described in this Report, in and monitoring wells at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The observed water table may be other than indicated in the Report.

COMPLIANCE WITH CODES AND REGULATIONS

7. We used reasonable care in identifying and interpreting applicable codes and regulations necessary to execute our scope of work. These codes and regulations are subject to various, and possibly contradictory, interpretations. Interpretations and compliance with codes and regulations by other parties is beyond our control.

GEOHYDROLOGICAL LIMITATIONS



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April 2012

SCREENING AND ANALYTICAL TESTING

- 8. GZA collected environmental samples at the locations identified in the Report. These samples were analyzed for the specific parameters identified in the report. Additional constituents, for which analyses were not conducted, may be present in soil, groundwater, surface water, sediment and/or air. Future Site activities and uses may result in a requirement for additional testing.
- 9. Our interpretation of field screening and laboratory data is presented in the Report. Unless otherwise noted, we relied upon the laboratory's QA/QC program to validate these data.
- 10. Variations in the types and concentrations of contaminants observed at a given location or time may occur due to release mechanisms, disposal practices, changes in flow paths, and/or the influence of various physical, chemical, biological or radiological processes. Subsequently observed concentrations may be other than indicated in the Report.

INTERPRETATION OF DATA

11. Our opinions are based on available information as described in the Report, and on our professional judgment. Additional observations made over time, and/or space, may not support the opinions provided in the Report.

ADDITIONAL INFORMATION

12. In the event that the Client or others authorized to use this report obtain additional 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.

ADDITIONAL SERVICES

13. GZA recommends that we be retained to provide services during any future investigations, design, implementation activities, construction, and/or property development/ redevelopment at the Site. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

CONCEPTUAL SITE MODEL

- 14. Our opinions were developed, in part, based upon a comparison of site data to conditions anticipated within our Conceptual Site Model (CSM). The CSM is based on available information, and professional judgment. There are rarely sufficient data to develop a unique CSM. Therefore observations over time, and/or space, may vary from those depicted in the CSM provided in this report. In addition, the CSM should be evaluated and refined (as appropriate) whenever significant new information and/or data is obtained.
- 15. As additional field data becomes available our numerical model can be modified to better reflect conditions of possible interest.

RISK CHARACTERIZATION

16. Our risk evaluation was performed in accordance with generally accepted practices of appropriate Federal and/or state regulatory agencies, and of other consultants undertaking similar studies at the same time, for similar purposes, and under similar circumstances. The findings of the risk evaluation are dependent on the numerous assumptions and uncertainties inherent in the risk characterization process. Sources of the uncertainty may include Site conditions; Site



GEOHYDROLOGICAL LIMITATIONS

use; the nature, extent, concentration and distribution of contaminants; and the available toxicity and/or health/risk based regulatory information. Consequently, the findings of the risk characterization are not an absolute characterization of actual risks; but rather serve to highlight potential incremental risks associated with activities indicated in the Report. Actual risks may be other than indicated in the Report.



APPENDIX B

BWSC FORM 105



Massachusetts Department of Environmental Protection *Bureau of Waste Site Cleanup*

Immediate Response Action (IRA) Transmittal Form Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

BWSC 105

Relea	se T	racking Number
3	-	33284

A. SITE LOCATION:

1. Release Name/Location	on Aid: NO LOCATION AID	
2. Street Address:	1 HORIZON WAY	
3. City/Town:	EVERETT	4. Zip Code:
6 5. Check here if this	s location is Adequately Regulated, pursuant to 31	0 CMR 40.0110-0114.
ê a. CERO	CLA	€ c. Solid Waste Management
é d. RCR	A State Program (21C Facilities)	
B. THIS FORM IS B	EING USED TO: (check all that apply)	
1. List Submittal Date of	f Initial IRA Written Plan (if previously submitted):
e 2. Submit an Initial	IRA Plan.	
§ 3. Submit a Modifie	d IRA Plan of a previously submitted written IRA	A Plan.
ê 4. Submit an Immin	nent Hazard Evaluation. (check one)	
ê a. An Imminen	t Hazard exists in connection with this Release or	Threat of Release.
ê b. An Imminen	t Hazard does not exist in connection with this Re	elease or Threat of Release.
€ c. It is unknown activities will be ur		on with this Release or Threat of Release, and further assessment
	n whether an Imminent Hazard exists in connections that could pose an Imminent H	on with this Release or Threat of Release. However, response Hazard.
6 5. Submit a request	to Terminate an Active Remedial System or Res	ponse Action(s) Taken to Address an Imminent Hazard.
6. Submit an IRA S	tatus Report	
ê 7. Submit a Remedi	al Monitoring Report. (This report can only be su	abmitted through eDEP.)
a. Type of Report:	(check one)	i. Interim Report & iii. Final Report
b. Frequency of Su	bmittal: (check all that apply)	
ê i. A Remedial N	Monitoring Report(s) submitted monthly to address	s an Imminent Hazard.
ê ii. A Remedial	Monitoring Report(s) submitted monthly to addre	ess a Condition of Substantial Release Migration.
ê iii. A Remedial	Monitoring Report(s) submitted every six months	s, concurrent with an IRA Status Report.
ê iv. A Remedial	Monitoring Report(s) submitted annually, concur	rrent with an IRA Status Report.
c. Number of Reme	edial Systems and/or Monitoring Programs:	
A separate BWSC1 addressed by this to		filled out for each Remedial System and/or Monitoring Program

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8. Submit an **IRA Completion Statement**.

3. Type of Release or TOR: (check all that apply)

ê f. Vehicle Accident

Others Specify:

Describe:

4. Identify Oils and Hazardous Materials Released: (check all that apply)

 $\stackrel{\mbox{\tiny \'e}}{}$ m. Other:

ê d.

ê e. Rupture

ê 1. Unknown

b k. UST Removal

ê c. Heavy Metals

Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC 105

Immediate Response Action (IRA) Transmittal Form Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 33284

~								
 a. Check here if future response actions addressing part of the Response Actions planned or ongoing at a S Number (RTN) 								
b. Provide Release Tracking Number of Tier Classified Site (Primary RTN):								
These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.								
$\hat{\in}~9.$ Submit a Revised IRA Completion Statement.								
$\hat{\epsilon}$ 10. Submit a Plan for the Application of Remedial Addi	tives near a sensi	tive receptor, pursuant to	310 CMR 40.0046(3).				
(All sections of this transmittal form must be filled out unless otherwise noted above)								
C. RELEASE OR THREAT OF RELEASE CONDITI	ONS THAT WA	ARRANT IRA:						
1. Media Impacted and Receptors Affected: (check all that a	apply)	ê a. Paved Surface	ê b. Basement	ê c. School				
ê d. Public Water Supply € e. Surface Water	ê f. Zone 2	ê g. Private Well	ê h. Residence	₿ i. Soil				
	ê l. Wetland	ê m. Storm Drain	ê n. Indoor Air	ê o. Air				
ê p. Soil Gas	ê r. Critical Ex	xposure Pathway	ê s. NAPL	ê t. Unknown				
ê r. Others Specify:								
2. Sources of the Release or TOR: (check all that apply)	ê a. T	ransformer	Fuel Tank 🔑 c. l	Pipe				
ê d. OHM Delivery ê e. AST	ê f. Drums	ê g. Tanker Truck	ê h. Hose	ê i. Line				
b j. UST Describe: Tank		ê	k. Vehicle	ê l. Boat/Vessel				
ê m. Unknown € n. Other:								

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

€ 1. Assessment and/or Monitoring Only	€ 2. Temporary Covers or Caps
€ 3. Deployment of Absorbent or Containment Materials	€ 4. Temporary Water Supplies
€ 5. Structure Venting System/HVAC Modification System	$\ensuremath{\hat{\in}}\xspace$ 6. Temporary Evacuation or Relocation of Residents
€ 7. Product or NAPL Recovery	€ 8. Fencing and Sign Posting
€ 9. Groundwater Treatment Systems	€ 10. Soil Vapor Extraction
€ 11. Remedial Additives	€ 12. Air Sparging
€ 13 Active Exposure Pathway Mitigation System	€ 14 Passive Exposure Pathway Mitigation System

ê a. Dumping

Tank Corrosion resulting in a release of OHM

ê g. Leak

€ b. Fire

ê h. Spill

b a. Oils

€ c. AST Removal

ê i. Test failure

é d. Overfill

6 b. Chlorinated Solvents

ê j. TOR Only

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Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC 105

Immediate Response Action (IRA) Transmittal Form Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D) Release Tracking Number
3 - 33284

D. D	ES	SCRIPTION OF RESE	PONSE ACTION	NS: ((cont.)				
		Excavation of Contamina		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	()				
	ê	a. Re-use, Recycling or	Treatment		i. On Siteii. Off Site	Estimated volume in cubic yards			
				ê	II. OII SHE	Estimated volume in cubic yards			
		iia. Receiving Facility:				Town:		State:	
		iib. Receiving Facility:				Town:		State:	
		iii. Describe:							
	ê	b. Store		ê	i. On Site	Estimated volume in cubic yards			
				ê	ii. Off Site	Estimated volume in cubic yards			
		iia. Receiving Facility:				Town:		State:	
		iib. Receiving Facility:				Town:		State:	
	ь	c. Landfill		ê	i. Cover	Estimated volume in cubic yards			
		Receiving Facility:				Town:		State:	
				Ь	ii. Disposal	Estimated volume in cubic yards	125		
		Receiving Facility:	TBD			Town: TBD		State:	MA
ь 1	16.	Removal of Drums, Tank	ks, or Containers:						
		a. Describe Quantity an	nd Amount: RI	EMO\	/AL OF APPRO	DX. 5,000-GALLON STEEL UST			
		b. Receiving Facility:	JAMES G. GRANT	-		Town: READVILLE		State:	MA
		c. Receiving Facility:				Town:		State:	
ь ¹	17.	Removal of Other Contain	minated Media:					•	
		a. Specify Type and Vo	lume: 1,253 GAL	LONS	S LIQUID UST C	CONTENTS TRANSPORTED TO CHES, S	s. PORTL	AND, ME	E, 45 YARDS SOLID UST
e 1	18.	Other Response Actions	;:						
		Describe:							
ê 1	19.	Use of Innovative Techr	nologies:						
		Describe:							



Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

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3 - 33284

E. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

- > if Section B of this form indicates that an **Immediate Response Action Plan** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish thepurposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;
- > if Section B of this form indicates that an **Imminent Hazard Evaluation** is being submitted, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;
- > if Section B of this form indicates that an **Immediate Response Action Status Report** and/or a **Remedial Monitoring Report** is(are) being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000,(ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;
- > if Section B of this form indicates that an **Immediate Response Action Completion Statement** or a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard** is being submitted, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 810)7				
2. First Name:	LAWRENCE		3. Last Name:	FELDMAN	
4. Telephone:	781-278-3700	5. Ext:		6. Email:	
7. Signature:	LAWRENCE FELDMAN				
8. Date: <u>3/24/</u>	/2016	(mm.	n/dd/yyyy)		9. LSP Stamp:

Revised: 11/14/2013 Page 4 of 6



to BWSC.eDEP@state.ma.us.

Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC 105

Immediate Response Action (IRA) Transmittal Form Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number

3 - 33284

F.	PERSON UNDERTAKING IRA:
1. (Check all that apply: B a. change in contact name b b. change of address c c. change in the person undertaking response actions
2. 1	Name of Organization: WYNN MA LLC
3. (Contact First Name: ROBERT 4. Last Name: DESALVIO
5. 5	Street: 101 STATION LANDING 2ND FLOOR 6. Title: PRESIDENT
7. 0	City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000
10.	Telephone: 857-770-7801 11. Ext: 12. Email:
G.	RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:
ê	Check here to change relationship
Ь	1. RP or PRP & a. Owner & b. Operator & c. Generator & d. Transporter
	ê e. Other RP or PRP Specify Relationship:
ê	2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)
ê	3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))
ê	4. Any Other Person Undertaking Response Actions: Specify Relationship:
H.	REQUIRED ATTACHMENT AND SUBMITTALS:
ê	1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the sit following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.
	ê a. A Release Abatement Measure (RAM) Plan (BWSC106)
ê	2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by MassDEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.
ê	3. Check here to certify that the Chief Municipal Officer and the Local Boardof Health were notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.

Revised: 11/14/2013 Page 5 of 6

4. Check here to certify that the Chief Municipal Officer and the Local Boardof Health were notified of the submittal of a Completion

5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections

Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.

6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC 105

Immediate Response Action (IRA) Transmittal Form Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D) Release Tracking Number
3 - 33284

I. CERTIFICATION OF PERSON UNDERTAKING IRA:

1. I, ROE	BERT DESALVIO	, attest under the	pains and pen	alties of perjury (i) the	nat I have person	ally examined and
that cont kno CM 310 resp sign	t, based on my inquiry of the tained herein is, to the best wledge, information and be R 40.0183(2); (iv) that I/the CMR 40.0183(5); and (v) consible for this submittal	on contained in this submittal, inche/those individual(s) immediated to f my knowledge, information elief, I/the person(s) or entity(ies) person(s) or entity(ies) on whose that I am fully authorized to m. I/the person(s) or entity(ies) og, but not limited to, possible fin	ly responsible and belief, tru on whose beh behalf this sub take this attest on whose beha	for obtaining the inf e, accurate and comp alf this submittal is romittal is made have p ation on behalf of the alf this submittal is	ormation, the maplete; (iii) that, made satisfy(ies) provided notice in the person(s) or a made is/are away	aterial information to the best of my the criteria in 310 n accordance with entity(ies) legally are that there are
2. By:	ROBERT DESALVIO		3. Title:	PRESIDENT		
4. For:	WYNN MA LLC		5. Date:	3/24/2016		(mm/dd/yyyy)
ê 6. Ch	neck here if the address of th	e person providing certification is	s different from	address recorded in	Section F.	
7. Street:						
8. City/To	own:		9. State:	10. Z	ip Code:	
11. Telepl	hone:	12. Ext:	13. Email:			
D : G:	YEAR FOR THIS DISI FORM OR DEP MAY	TO AN ANNUAL COMPLIANCE POSAL SITE. YOU MUST LEGIB Y RETURN THE DOCUMENT AS I, YOU MAY BE PENALIZED FO	LY COMPLETS INCOMPLET	E ALL RELEVANT S E. IF YOU SUBMIT A	ECTIONS OF TH AN INCOMPLET	IIS

Date Stamp (DEP USE ONLY:)

Received by DEP on 3/24/2016 4:26:59 PM

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APPENDIX C

LABORATORY ANALYTICAL DATA



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Matt Smith GZA GeoEnvironmental, Inc. 249 Vanderbilt Avenue Norwood, MA 02062

RE: Wynn Everett (01.0171521.41 Task 2)

ESS Laboratory Work Order Number: 1602554

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

Laurel Stoddard Laboratory Director REVIEWED

By ESS Laboratory at 4:14 pm, Mar 03, 2016

Analytical Summary

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

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



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

SAMPLE RECEIPT

The following samples were received on February 25, 2016 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1602554-01	UST_NW_02-24-16	Soil	EPH8270, MADEP-EPH
1602554-02	UST_NW_02-24-16	Soil	MADEP-VPH
1602554-03	UST_BTM_02-24-16	Soil	EPH8270, MADEP-EPH
1602554-04	UST_BTM_02-24-16	Soil	MADEP-VPH
1602554-05	UST_SW_02-24-16	Soil	EPH8270, MADEP-EPH
1602554-06	UST_SW_02-24-16	Soil	MADEP-VPH
1602554-07	UST_EW_02-24-16	Soil	EPH8270, MADEP-EPH
1602554-08	UST_EW_02-24-16	Soil	MADEP-VPH
1602554-09	UST_WW_02-24-16	Soil	EPH8270, MADEP-EPH
1602554-10	UST WW 02-24-16	Soil	MADEP-VPH



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

PROJECT NARRATIVE

MADEP-EPH Extractable Petroleum Hydrocarbons

1602554-07 <u>Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).</u>

1-Chlorooctadecane (35% @ 40-140%)

CB62521-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

C19-C36 Aliphatics 1 (38% @ 25%), C9-C18 Aliphatics 1 (35% @ 25%), Eicosane (C20) (26% @ 25%), Hexacosane (C26) (26% @ 25%), Hexatriacontane (C36) (52% @ 25%), Octacosane (C28) (28% @

25%), Triacontane (C30) (31% @ 25%)

CZB0378-CCV2 Continuing Calibration %Diff/Drift is below control limit (CD-).

Hexatriacontane (C36) (41% @ 25%)

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

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

http://www.ESSLaboratory.com



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint

6010C - ICP

6020A - ICP MS

7010 - Graphite Furnace

7196A - Hexavalent Chromium

7470A - Aqueous Mercury

7471B - Solid Mercury

8011 - EDB/DBCP/TCP

8015D - GRO/DRO

8081B - Pesticides

8082A - PCB

8100M - TPH

8151A - Herbicides

8260B - VOA

8270D - SVOA

8270D SIM - SVOA Low Level

9014 - Cyanide

9038 - Sulfate

9040C - Aqueous pH

9045D - Solid pH (Corrosivity)

9050A - Specific Conductance

9056A - Anions (IC)

9060A - TOC

9095B - Paint Filter

MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion

3020A - Aqueous Graphite Furnace / ICP MS Digestion

3050B - Solid ICP / Graphite Furnace / ICP MS Digestion

3060A - Solid Hexavalent Chromium Digestion

3510C - Separatory Funnel Extraction

3520C - Liquid / Liquid Extraction

3540C - Manual Soxhlet Extraction

3541 - Automated Soxhlet Extraction

3546 - Microwave Extraction

3580A - Waste Dilution

5030B - Aqueous Purge and Trap

5030C - Aqueous Purge and Trap

5035 - Solid Purge and Trap

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



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett Client Sample ID: UST_NW_02-24-16

Date Sampled: 02/24/16 12:50

Percent Solids: 47 Initial Volume: 15.1

Final Volume: 1

Extraction Method: 3546

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-01

Sample Matrix: Soil Units: mg/kg dry

Prepared: 2/25/16 18:04

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte C9-C18 Aliphatics1	Results (MRL) ND (52.6)	<u>MDL</u>	Method MADEP-EPH	<u>Limit</u>	<u>DF</u>	Analyst ZLC	Analyzed 02/26/16 16:09	Sequence CZB0378	Batch CB62521
C19-C36 Aliphatics1	134 (52.6)		MADEP-EPH		1	ZLC	02/26/16 16:09	CZB0378	CB62521
C11-C22 Unadjusted Aromatics1	128 (52.6)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
C11-C22 Aromatics1,2	128 (52.6)		EPH8270			VSC	02/27/16 9:29		[CALC]
2-Methylnaphthalene	ND (0.70)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Acenaphthene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Naphthalene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Phenanthrene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Acenaphthylene	ND (0.70)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Anthracene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Benzo(a)anthracene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Benzo(a)pyrene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Benzo(b)fluoranthene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Benzo(g,h,i)perylene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Benzo(k)fluoranthene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Chrysene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Dibenzo(a,h)Anthracene	ND (0.70)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Fluoranthene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Fluorene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Indeno(1,2,3-cd)Pyrene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
Pyrene	ND (1.40)		EPH8270		1	VSC	02/27/16 9:29	CZB0420	CB62521
		%Recovery	Qualifier	Limits					
Surrogate: 1-Chlorooctadecane		54 %		40-140					

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	54 %		40-140
Surrogate: 2-Bromonaphthalene	96 %		40-140
Surrogate: 2-Fluorobiphenyl	83 %		40-140
Surrogate: O-Terphenyl	74 %		40-140



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_NW_02-24-16

Date Sampled: 02/24/16 12:50

Percent Solids: 47 Initial Volume: 15.7 Final Volume: 15

Extraction Method: 5035

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-02

Sample Matrix: Soil Units: mg/kg dry Analyst: MEK

MADEP-VPH Volatile Petroleum Hydrocarbon

<u>Analyte</u>	Results (MRL)	MDL <u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	Sequence	Batch
C9-C10 Aromatics	ND (31.6)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
C5-C8 Aliphatics1,2	ND (31.6)	MADEP-VPH		1	02/26/16 15:23		[CALC]
C9-C12 Aliphatics2,3	ND (31.6)	MADEP-VPH		1	02/26/16 15:23		[CALC]
Benzene	ND (0.63)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
Ethylbenzene	ND (0.63)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
Methyl tert-Butyl Ether	ND (0.16)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
Naphthalene	ND (0.63)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
Toluene	ND (0.63)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
Xylene O	ND (0.63)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
Xylene P,M	ND (1.26)	MADEP-VPH		1	02/26/16 15:23	CZB0381	CB62625
1:1 Methanol/Soil Ratio %D	5 (N/A)	MADEP-VPH			02/26/16 7:40		CB62625
Preservative:	MeOH - cover	ed MADEP-VPH					CB62625
	%Reco	overy Qualifier	Limits				

	,	•
Surrogate: 2,5-Dibromotoluene - FID	96 %	70-130
Surrogate: 2,5-Dibromotoluene - PID	99 %	70-130
Surrogate: Trifluorotoluene - FID	109 %	70-130
Surrogate: Trifluorotoluene - PID	114 %	70-130

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

http://www.ESSLaboratory.com



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_BTM_02-24-16

Date Sampled: 02/24/16 13:15

Percent Solids: 64 Initial Volume: 15.1

Final Volume: 15.1

Extraction Method: 3546

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-03

Sample Matrix: Soil Units: mg/kg dry

Prepared: 2/25/16 18:04

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method MADEP-EPH	<u>Limit</u>	$\frac{\mathbf{DF}}{1}$	Analyst ZLC	Analyzed 02/26/16 16:56	Sequence CZB0378	Batch CB62521
C9-C18 Aliphatics1 C19-C36 Aliphatics1	ND (38.7) ND (38.7)		MADEP-EPH		1	ZLC	02/26/16 16:56	CZB0378 CZB0378	CB62521
C11-C22 Unadjusted Aromatics1	ND (38.7) ND (38.7)		EPH8270		1	VSC	02/27/16 10:06	CZB0378 CZB0420	CB62521
C11-C22 Aromatics1,2	,		EPH8270		1	VSC	02/27/16 10:06	CZB0420	[CALC]
ŕ	ND (38.7)				1			CZD0420	. ,
2-Methylnaphthalene	ND (0.52)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Acenaphthene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Naphthalene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Phenanthrene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Acenaphthylene	ND (0.52)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Anthracene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Benzo(a)anthracene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Benzo(a)pyrene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Benzo(b)fluoranthene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Benzo(g,h,i)perylene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Benzo(k)fluoranthene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Chrysene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Dibenzo(a,h)Anthracene	ND (0.52)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Fluoranthene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Fluorene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Indeno(1,2,3-cd)Pyrene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
Pyrene	ND (1.03)		EPH8270		1	VSC	02/27/16 10:06	CZB0420	CB62521
		%Recovery	Qualifier	Limits					
Surrogate: 1-Chlorooctadecane		58 %		40-140					

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	58 %		40-140
Surrogate: 2-Bromonaphthalene	100 %		40-140
Surrogate: 2-Fluorobiphenyl	88 %		40-140
Surrogate: O-Terphenyl	72 %		40-140



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_BTM_02-24-16

Date Sampled: 02/24/16 13:15

Percent Solids: 64 Initial Volume: 17.3 Final Volume: 15

Extraction Method: 5035

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-04

Sample Matrix: Soil Units: mg/kg dry Analyst: MEK

MADEP-VPH Volatile Petroleum Hydrocarbon

Analyte	Results (MRL)	MDL Method	<u>Limit</u>	<u>DF</u>	Analyzed	Sequence	Batch
C9-C10 Aromatics	ND (19.2)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
C5-C8 Aliphatics1,2	ND (19.2)	MADEP-VPH		1	02/26/16 15:56		[CALC]
C9-C12 Aliphatics2,3	ND (19.2)	MADEP-VPH		1	02/26/16 15:56		[CALC]
Benzene	ND (0.38)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
Ethylbenzene	ND (0.38)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
Methyl tert-Butyl Ether	ND (0.10)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
Naphthalene	ND (0.38)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
Toluene	ND (0.38)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
Xylene O	ND (0.38)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
Xylene P,M	ND (0.77)	MADEP-VPH		1	02/26/16 15:56	CZB0381	CB62625
1:1 Methanol/Soil Ratio %D	15 (N/A)	MADEP-VPH			02/26/16 7:40		CB62625
Preservative:	MeOH - covere	ed MADEP-VPH					CB62625
	%Reco	very Qualifier	Limits				

	, on teed tery	Quanner	Zirriico
Surrogate: 2,5-Dibromotoluene - FID	99 %		70-130
Surrogate: 2,5-Dibromotoluene - PID	102 %		70-130
Surrogate: Trifluorotoluene - FID	110 %		70-130
Surrogate: Trifluorotoluene - PID	118 %		70-130

185 Frances Avenue, Cranston, RI 02910-2211

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Quality

Fax: 401-461-4486

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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_SW_02-24-16

Date Sampled: 02/24/16 13:30

Percent Solids: 43 Initial Volume: 15

Final Volume: 1

Extraction Method: 3546

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-05

Sample Matrix: Soil Units: mg/kg dry

Prepared: 2/25/16 18:04

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte C9-C18 Aliphatics1	Results (MRL)	MDL Method MADEP-EPH	<u>Limit</u>	<u>DF</u>	Analyst ZLC	Analyzed 02/26/16 17:45	Sequence CZB0378	Batch CB62521
C19-C36 Aliphatics1	ND (58.8)	MADEP-EPH		1	ZLC	02/26/16 17:45	CZB0378 CZB0378	CB62521
•	61.4 (58.8)			1				
C11-C22 Unadjusted Aromatics1	135 (58.8)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
C11-C22 Aromatics1,2	120 (58.8)	EPH8270			VSC	02/27/16 10:43		[CALC]
2-Methylnaphthalene	ND (0.78)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Acenaphthene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Naphthalene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Phenanthrene	2.68 (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Acenaphthylene	ND (0.78)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Anthracene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Benzo(a)anthracene	1.65 (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Benzo(a)pyrene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Benzo(b)fluoranthene	1.69 (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Benzo(g,h,i)perylene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Benzo(k)fluoranthene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Chrysene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Dibenzo(a,h)Anthracene	ND (0.78)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Fluoranthene	5.04 (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Fluorene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Indeno(1,2,3-cd)Pyrene	ND (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
Pyrene	4.05 (1.57)	EPH8270		1	VSC	02/27/16 10:43	CZB0420	CB62521
		%Recovery Qualifier	Limits					
Currogatas 1 Chlaracetadacana								

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	59 %		40-140
Surrogate: 2-Bromonaphthalene	97 %		40-140
Surrogate: 2-Fluorobiphenyl	86 %		40-140
Surrogate: O-Terphenyl	72 %		40-140

Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_SW_02-24-16

Date Sampled: 02/24/16 13:30

Percent Solids: 43 Initial Volume: 16.3 Final Volume: 15

Extraction Method: 5035

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-06

Sample Matrix: Soil Units: mg/kg dry Analyst: MEK

MADEP-VPH Volatile Petroleum Hydrocarbon

<u>Analyte</u>	Results (MRL)	<u>MDL Method</u>	<u>Limit</u> <u>Dl</u>	<u>Analyzed</u>	<u>Sequence</u>	Batch
C9-C10 Aromatics	ND (34.7)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
C5-C8 Aliphatics1,2	ND (34.7)	MADEP-VPH	1	02/26/16 16:28		[CALC]
C9-C12 Aliphatics2,3	ND (34.7)	MADEP-VPH	1	02/26/16 16:28		[CALC]
Benzene	ND (0.69)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
Ethylbenzene	ND (0.69)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
Methyl tert-Butyl Ether	ND (0.17)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
Naphthalene	ND (0.69)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
Toluene	ND (0.69)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
Xylene O	ND (0.69)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
Xylene P,M	ND (1.39)	MADEP-VPH	1	02/26/16 16:28	CZB0381	CB62625
1:1 Methanol/Soil Ratio %D	9 (N/A)	MADEP-VPH		02/26/16 7:40		CB62625
Preservative:	MeOH - covere	d MADEP-VPH				CB62625
	%Reco	very Qualifier	Limits			

	,	· · · · · · · · · · · · · · · · · · ·	
Surrogate: 2,5-Dibromotoluene - FID	92 %		70-130
Surrogate: 2,5-Dibromotoluene - PID	96 %		70-130
Surrogate: Trifluorotoluene - FID	110 %		70-130
Surrogate: Trifluorotoluene - PID	115 %		70-130

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CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett Client Sample ID: UST_EW_02-24-16

Date Sampled: 02/24/16 13:45

Percent Solids: 85

Initial Volume: 24.2

Final Volume: 2

Extraction Method: 3546

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-07

Sample Matrix: Soil Units: mg/kg dry

Prepared: 3/2/16 15:30

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	<u>Limit</u>	<u>DF</u>	Analyst		Sequence	Batch
C9-C18 Aliphatics1	ND (36.5)		MADEP-EPH		1	JXS	03/03/16 8:24	CZC0028	CC60204
C19-C36 Aliphatics1	57.3 (36.5)		MADEP-EPH		1	JXS	03/03/16 8:24	CZC0028	CC60204
C11-C22 Unadjusted Aromatics1	ND (36.5)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
C11-C22 Aromatics1,2	ND (36.5)		EPH8270			JXS	03/03/16 11:42		[CALC]
2-Methylnaphthalene	ND (0.49)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Acenaphthene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Naphthalene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Phenanthrene	1.45 (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Acenaphthylene	ND (0.49)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Anthracene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Benzo(a)anthracene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Benzo(a)pyrene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Benzo(b)fluoranthene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Benzo(g,h,i)perylene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Benzo(k)fluoranthene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Chrysene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Dibenzo(a,h)Anthracene	ND (0.49)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Fluoranthene	1.41 (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Fluorene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Indeno(1,2,3-cd)Pyrene	ND (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
Pyrene	1.15 (0.97)		EPH8270		1	JXS	03/03/16 11:42	CZC0043	CC60204
		%Recovery	Qualifier	Limits					

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	35 %	SM	40-140
Surrogate: 2-Bromonaphthalene	92 %		40-140
Surrogate: 2-Fluorobiphenyl	91 %		40-140
Surrogate: O-Terphenyl	41 %		40-140



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_EW_02-24-16

Date Sampled: 02/24/16 13:45

Percent Solids: 85 Initial Volume: 25.4 Final Volume: 15

Extraction Method: 5035

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-08

Sample Matrix: Soil Units: mg/kg dry Analyst: MEK

MADEP-VPH Volatile Petroleum Hydrocarbon

<u>Analyte</u>	Results (MRL)	MDL Method	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	Sequence	Batch
C9-C10 Aromatics	ND (8.71)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
C5-C8 Aliphatics1,2	ND (8.71)	MADEP-VPH		1	02/26/16 17:00		[CALC]
C9-C12 Aliphatics2,3	ND (8.71)	MADEP-VPH		1	02/26/16 17:00		[CALC]
Benzene	ND (0.17)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
Ethylbenzene	ND (0.17)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
Methyl tert-Butyl Ether	ND (0.04)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
Naphthalene	0.42 (0.17)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
Toluene	ND (0.17)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
Xylene O	ND (0.17)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
Xylene P,M	ND (0.35)	MADEP-VPH		1	02/26/16 17:00	CZB0381	CB62625
1:1 Methanol/Soil Ratio %D	69 (N/A)	MADEP-VPH			02/26/16 7:40		CB62625
Preservative:	MeOH - covere	ed MADEP-VPH					CB62625
	%Reco	verv Qualifier	l imits				

	,	· · · · · · · · · · · · · · · · · · ·	
Surrogate: 2,5-Dibromotoluene - FID	96 %		70-130
Surrogate: 2,5-Dibromotoluene - PID	101 %		70-130
Surrogate: Trifluorotoluene - FID	104 %		70-130
Surrogate: Trifluorotoluene - PID	110 %		70-130



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_WW_02-24-16

Date Sampled: 02/24/16 14:00

Percent Solids: 67 Initial Volume: 15.2 Final Volume: 1

Extraction Method: 3546

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-09

Sample Matrix: Soil Units: mg/kg dry

Prepared: 2/25/16 18:04

MADEP-EPH Extractable Petroleum Hydrocarbons

Analyte C9-C18 Aliphatics1	Results (MRL) ND (36.8)	MDL	Method Madep-eph	<u>Limit</u>	<u>DF</u>	Analyst ZLC	Analyzed 02/26/16 19:20	Sequence CZB0378	Batch CB62521
C19-C36 Aliphatics1	ND (36.8)		MADEP-EPH		1	ZLC	02/26/16 19:20	CZB0378 CZB0378	CB62521
C11-C22 Unadjusted Aromatics1	ND (36.8)		EPH8270		1	VSC	02/27/16 11:57	CZB0370	CB62521
C11-C22 Aromatics1,2	ND (36.8)		EPH8270		_	VSC	02/27/16 11:57		[CALC]
2-Methylnaphthalene	ND (0.49)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Acenaphthene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Naphthalene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Phenanthrene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Acenaphthylene	ND (0.49)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Anthracene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Benzo(a)anthracene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Benzo(a)pyrene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Benzo(b)fluoranthene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Benzo(g,h,i)perylene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Benzo(k)fluoranthene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Chrysene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Dibenzo(a,h)Anthracene	ND (0.49)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Fluoranthene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Fluorene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Indeno(1,2,3-cd)Pyrene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
Pyrene	ND (0.98)		EPH8270		1	VSC	02/27/16 11:57	CZB0420	CB62521
		%Recovery	Qualifier	Limits					
Surrogate: 1-Chlorooctadecane		60 %		40-140					

	%Recovery	Qualifier	Limits
Surrogate: 1-Chlorooctadecane	60 %		40-140
Surrogate: 2-Bromonaphthalene	86 %		40-140
Surrogate: 2-Fluorobiphenyl	79 %		40-140
Surrogate: O-Terphenyl	<i>75 %</i>		40-140



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett

Client Sample ID: UST_WW_02-24-16

Date Sampled: 02/24/16 14:00

Percent Solids: 67 Initial Volume: 20 Final Volume: 15

Extraction Method: 5035

ESS Laboratory Work Order: 1602554 ESS Laboratory Sample ID: 1602554-10

Sample Matrix: Soil Units: mg/kg dry Analyst: MEK

MADEP-VPH Volatile Petroleum Hydrocarbon

Analyte	Results (MRL)	MDL Method	<u>Limit</u>	DF	Analyzed	Sequence	Batch
C9-C10 Aromatics	ND (16.1)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
C5-C8 Aliphatics1,2	ND (16.1)	MADEP-VPH		1	02/26/16 17:33		[CALC]
C9-C12 Aliphatics2,3	ND (16.1)	MADEP-VPH		1	02/26/16 17:33		[CALC]
Benzene	ND (0.32)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
Ethylbenzene	ND (0.32)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
Methyl tert-Butyl Ether	ND (0.08)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
Naphthalene	ND (0.32)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
Toluene	ND (0.32)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
Xylene O	ND (0.32)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
Xylene P,M	ND (0.64)	MADEP-VPH		1	02/26/16 17:33	CZB0381	CB62625
1:1 Methanol/Soil Ratio %D	33 (N/A)	MADEP-VPH			02/26/16 7:40		CB62625
Preservative:	MeOH - cover	ed MADEP-VPH					CB62625
	2/2	0 15					

	,	
Surrogate: 2,5-Dibromotoluene - FID	86 %	70-130
Surrogate: 2,5-Dibromotoluene - PID	91 %	70-130
Surrogate: Trifluorotoluene - FID	100 %	70-130
Surrogate: Trifluorotoluene - PID	104 %	70-130



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Batch CB62521 - 3546

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

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

MADEP-EPH Extractable Petroleum Hydrocarbons

Blank							
C19-C36 Aliphatics1	ND	15.0	mg/kg wet				
C9-C18 Aliphatics1	ND	15.0	mg/kg wet				
Decane (C10)	ND	0.5	mg/kg wet				
Docosane (C22)	ND	0.5	mg/kg wet				
Dodecane (C12)	ND	0.5	mg/kg wet				
Eicosane (C20)	ND	0.5	mg/kg wet				
Hexacosane (C26)	ND	0.5	mg/kg wet				
Hexadecane (C16)	ND	0.5	mg/kg wet				
Hexatriacontane (C36)	ND	0.5	mg/kg wet				
Nonadecane (C19)	ND	0.5	mg/kg wet				
Nonane (C9)	ND	0.5	mg/kg wet				
Octacosane (C28)	ND	0.5	mg/kg wet				
Octadecane (C18)	ND	0.5	mg/kg wet				
Tetracosane (C24)	ND	0.5	mg/kg wet				
Tetradecane (C14)	ND	0.5	mg/kg wet				
Triacontane (C30)	ND	0.5	mg/kg wet				
. ,			<u> </u>				
Surrogate: 1-Chlorooctadecane	1.27		mg/kg wet	2.000	63	40-140	
Blank							
2-Methylnaphthalene	ND	0.20	mg/kg wet				
Acenaphthene	ND	0.40	mg/kg wet				
Acenaphthylene	ND	0.20	mg/kg wet				
Anthracene	ND	0.40	mg/kg wet				
Benzo(a)anthracene	ND	0.40	mg/kg wet				
Benzo(a)pyrene	ND	0.40	mg/kg wet				
Benzo(b)fluoranthene	ND	0.40	mg/kg wet				
Benzo(g,h,i)perylene	ND	0.40	mg/kg wet				
Benzo(k)fluoranthene	ND	0.40	mg/kg wet				
C11-C22 Aromatics1,2	ND	15.0	mg/kg wet				
C11-C22 Unadjusted Aromatics1	ND	15.0	mg/kg wet				
Chrysene	ND	0.40	mg/kg wet				
Dibenzo(a,h)Anthracene	ND	0.20	mg/kg wet				
Fluoranthene	ND	0.40	mg/kg wet				
Fluorene	ND	0.40	mg/kg wet				
Indeno(1,2,3-cd)Pyrene	ND	0.40	mg/kg wet				
Naphthalene	ND	0.40	mg/kg wet				
Phenanthrene	ND	0.40	mg/kg wet				
Pyrene	ND	0.40	mg/kg wet				
Surrogate: 2-Bromonaphthalene	1.72		mg/kg wet	2.000	86	40-140	
Surrogate: 2-Fluorobiphenyl	1.75		mg/kg wet	2.000	87	40-140	
Surrogate: O-Terphenyl	1.59		mg/kg wet	2.000	80	40-140	
LCS							
C19-C36 Aliphatics1	18.3	15.0	mg/kg wet	16.00	114	40-140	
C9-C18 Aliphatics1	12.1	15.0	mg/kg wet	12.00	101	40-140	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
	MAD	EP-EPH Exti	actable Petro	oleum Hy	/drocarboi	าร	· · ·			
Batch CB62521 - 3546										
Decane (C10)	1.0	0.5	mg/kg wet	2.000		51	40-140			
Docosane (C22)	1.8	0.5	mg/kg wet	2.000		88	40-140			
Dodecane (C12)	1.1	0.5	mg/kg wet	2.000		55	40-140			
Eicosane (C20)	1.7	0.5	mg/kg wet	2.000		87	40-140			
Hexacosane (C26)	1.8	0.5	mg/kg wet	2.000		90	40-140			
Hexadecane (C16)	1.6	0.5	mg/kg wet	2.000		80	40-140			
lexatriacontane (C36)	1.6	0.5	mg/kg wet	2.000		80	40-140			
Nonadecane (C19)	1.8	0.5	mg/kg wet	2.000		88	40-140			
Ionane (C9)	0.8	0.5	mg/kg wet	2.000		40	30-140			
Octacosane (C28)	1.7	0.5	mg/kg wet	2.000		86	40-140			
Octadecane (C18)	1.7	0.5	mg/kg wet	2.000		86	40-140			
Fetracosane (C24)	1.7	0.5	mg/kg wet	2.000		84	40-140			
Tetradecane (C14)	1.3	0.5	mg/kg wet	2.000		66	40-140			
Friacontane (C30)	1.7	0.5	mg/kg wet	2.000		87	40-140			
Surrogate: 1-Chlorooctadecane	1.55		mg/kg wet	2.000		<i>78</i>	40-140			
cs										
-Methylnaphthalene	1.40	0.20	mg/kg wet	2.000		70	40-140			
cenaphthene	1.41	0.40	mg/kg wet	2.000		71	40-140			
cenaphthylene	1.46	0.20	mg/kg wet	2.000		73	40-140			
nthracene	1.55	0.40	mg/kg wet	2.000		78	40-140			
enzo(a)anthracene	1.61	0.40	mg/kg wet	2.000		80	40-140			
enzo(a)pyrene	1.70	0.40	mg/kg wet	2.000		85	40-140			
enzo(b)fluoranthene	1.73	0.40	mg/kg wet	2.000		87	40-140			
enzo(g,h,i)perylene	1.44	0.40	mg/kg wet	2.000		72	40-140			
enzo(k)fluoranthene	1.66	0.40	mg/kg wet	2.000		83	40-140			
11-C22 Aromatics1,2	ND	15.0	mg/kg wet							
11-C22 Unadjusted Aromatics1	30.7	15.0	mg/kg wet	34.00		90	40-140			
hrysene	1.61	0.40	mg/kg wet	2.000		80	40-140			
Dibenzo(a,h)Anthracene	1.52	0.20	mg/kg wet	2.000		76	40-140			
luoranthene	1.60	0.40	mg/kg wet	2.000		80	40-140			
luorene	1.50	0.40	mg/kg wet	2.000		75	40-140			
ndeno(1,2,3-cd)Pyrene	1.49	0.40	mg/kg wet	2.000		74	40-140			
Naphthalene	1.38	0.40	mg/kg wet	2.000		69	40-140			
Phenanthrene	1.59	0.40	mg/kg wet	2.000		80	40-140			
lyrene	1.62	0.40	mg/kg wet	2.000		81	40-140			
Surrogate: 2-Bromonaphthalene	1.58		mg/kg wet	2.000		79	40-140			
Surrogate: 2-Fluorobiphenyl	1.72		mg/kg wet	2.000		86	40-140			
Surrogate: O-Terphenyl	1.55		mg/kg wet	2.000		78	40-140			
cs										
-Methylnaphthalene Breakthrough	0.0		%				0-5			
laphthalene Breakthrough	0.0		%				0-5			
.CS Dup										
19-C36 Aliphatics1	12.4	15.0	mg/kg wet	16.00		78	40-140	38	25	D+
C9-C18 Aliphatics1	8.5	15.0	mg/kg wet	12.00		71	40-140	35	25	D+



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifie
	MAD	EP-EPH Exti	ractable Petro	oleum Hy	/drocarbo	ns				
Batch CB62521 - 3546										
Decane (C10)	0.8	0.5	mg/kg wet	2.000		40	40-140	23	25	
Docosane (C22)	1.4	0.5	mg/kg wet	2.000		69	40-140	24	25	
Dodecane (C12)	0.9	0.5	mg/kg wet	2.000		44	40-140	22	25	
Eicosane (C20)	1.3	0.5	mg/kg wet	2.000		67	40-140	26	25	D+
Hexacosane (C26)	1.4	0.5	mg/kg wet	2.000		70	40-140	26	25	D+
Hexadecane (C16)	1.3	0.5	mg/kg wet	2.000		63	40-140	23	25	
Hexatriacontane (C36)	0.9	0.5	mg/kg wet	2.000		47	40-140	52	25	D+
Nonadecane (C19)	1.4	0.5	mg/kg wet	2.000		68	40-140	25	25	
lonane (C9)	0.6	0.5	mg/kg wet	2.000		32	30-140	21	25	
Octacosane (C28)	1.3	0.5	mg/kg wet	2.000		65	40-140	28	25	D+
Octadecane (C18)	1.3	0.5	mg/kg wet	2.000		67	40-140	24	25	
Fetracosane (C24)	1.3	0.5	mg/kg wet	2.000		66	40-140	25	25	
Tetradecane (C14)	1.1	0.5	mg/kg wet	2.000		54	40-140	22	25	
Friacontane (C30)	1.3	0.5	mg/kg wet	2.000		64	40-140	31	25	D+
Surrogate: 1-Chlorooctadecane	1.31		mg/kg wet	2.000		65	40-140			
.CS Dup										
-Methylnaphthalene	1.54	0.20	mg/kg wet	2.000		77	40-140	10	30	
Acenaphthene	1.50	0.40	mg/kg wet	2.000		75	40-140	6	30	
Acenaphthylene	1.57	0.20	mg/kg wet	2.000		78	40-140	7	30	
nthracene	1.61	0.40	mg/kg wet	2.000		81	40-140	4	30	
Senzo(a)anthracene	1.65	0.40	mg/kg wet	2.000		82	40-140	2	30	
Benzo(a)pyrene	1.73	0.40	mg/kg wet	2.000		87	40-140	2	30	
Benzo(b)fluoranthene	1.77	0.40	mg/kg wet	2.000		89	40-140	2	30	
Benzo(g,h,i)perylene	1.51	0.40	mg/kg wet	2.000		75	40-140	4	30	
Benzo(k)fluoranthene	1.73	0.40	mg/kg wet	2.000		87	40-140	5	30	
C11-C22 Aromatics1,2	ND	15.0	mg/kg wet							
C11-C22 Unadjusted Aromatics1	31.9	15.0	mg/kg wet	34.00		94	40-140	4	30	
Chrysene	1.68	0.40	mg/kg wet	2.000		84	40-140	5	30	
Dibenzo(a,h)Anthracene	1.65	0.20	mg/kg wet	2.000		83	40-140	8	30	
Fluoranthene	1.66	0.40	mg/kg wet	2.000		83	40-140	4	30	
Fluorene	1.58	0.40	mg/kg wet	2.000		79	40-140	5	30	
indeno(1,2,3-cd)Pyrene	1.53	0.40	mg/kg wet	2.000		76	40-140	3	30	
Naphthalene	1.52	0.40	mg/kg wet	2.000		76	40-140	9	30	
Phenanthrene	1.67	0.40	mg/kg wet	2.000		84	40-140	5	30	
Pyrene	1.66	0.40	mg/kg wet	2.000		83	40-140	2	30	
Surrogate: 2-Bromonaphthalene	1.73		mg/kg wet	2.000		86	40-140			
Surrogate: 2-Fluorobiphenyl	1.77		mg/kg wet	2.000		88	40-140			
Surrogate: O-Terphenyl	1.58		mg/kg wet	2.000		<i>79</i>	40-140			
.CS Dup										
2-Methylnaphthalene Breakthrough	0.0		%				0-5		200	
Naphthalene Breakthrough	0.0		%				0-5		200	
Batch CC60204 - 3546										
Blank	·									
C19-C36 Aliphatics1	ND	15.0	mg/kg wet							



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Batch CC60204 - 3546

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

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

MADEP-EPH Extractable	Petroleum	Hyc	irocar	bons
-----------------------	-----------	-----	--------	------

ND	15.0	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
ND	0.5	mg/kg wet				
1.38		mg/kg wet	2.000	69	40-140	
ND	0.20	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.20	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	15.0	mg/kg wet				
ND	15.0	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.20	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
ND	0.40					
ND	0.40	mg/kg wet				
ND	0.40	mg/kg wet				
1.74		mg/kg wet	2.000	87	40-140	
1.88		mg/kg wet	2.000	94	40-140	
1.57		mg/kg wet	2.000	<i>78</i>	40-140	
15.5	15.0	ma/ka wet	16.00	97	40-140	
15.5	15.0	mg/kg wet	16.00	97	40-140 40-140	
15.5 10.6 1.0	15.0 15.0 0.5	mg/kg wet mg/kg wet mg/kg wet	16.00 12.00 2.000	97 88 52	40-140 40-140 40-140	
	ND N	ND 0.5 ND 0.40	ND 0.5 mg/kg wet ND 0.40 mg/kg wet ND 0.50 mg/kg wet	ND	ND 0.5 mg/kg wet ND 0.6 mg/kg wet ND 0.7 mg/kg wet ND 0.8 mg/kg wet ND 0.9	ND 0.5 mg/kg wet ND 0.60 mg/kg wet ND 0.70 mg/kg wet

185 Frances Avenue, Cranston, RI 02910-2211 Tel:

2211 Tel: 401-461-7181

Dependability

◆ Quality

Fax: 401-461-4486 ◆ Service



The Microbiology Division of Thielsch Engineering, Inc.

%REC



RPD

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

Spike

Source

Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
	MAD	EP-EPH Extr	actable Petro	oleum Hy	drocarbo	ns				
Batch CC60204 - 3546										
Podecane (C12)	1.1	0.5	mg/kg wet	2.000		57	40-140			
Eicosane (C20)	1.7	0.5	mg/kg wet	2.000		84	40-140			
Hexacosane (C26)	1.6	0.5	mg/kg wet	2.000		82	40-140			
Hexadecane (C16)	1.5	0.5	mg/kg wet	2.000		77	40-140			
Hexatriacontane (C36)	1.3	0.5	mg/kg wet	2.000		64	40-140			
Nonadecane (C19)	1.7	0.5	mg/kg wet	2.000		84	40-140			
Nonane (C9)	0.8	0.5	mg/kg wet	2.000		40	30-140			
Octacosane (C28)	1.6	0.5	mg/kg wet	2.000		79	40-140			
Octadecane (C18)	1.8	0.5	mg/kg wet	2.000		91	40-140			
「etracosane (C24)	1.5	0.5	mg/kg wet	2.000		77	40-140			
Fetradecane (C14)	1.3	0.5	mg/kg wet	2.000		64	40-140			
Triacontane (C30)	1.5	0.5	mg/kg wet	2.000		76	40-140			
Surrogate: 1-Chlorooctadecane	1.45		mg/kg wet	2.000		<i>72</i>	40-140			
.cs										
2-Methylnaphthalene	1.59	0.20	mg/kg wet	2.000		79	40-140			
Acenaphthene	1.60	0.40	mg/kg wet	2.000		80	40-140			
Acenaphthylene	1.66	0.20	mg/kg wet	2.000		83	40-140			
Anthracene	1.76	0.40	mg/kg wet	2.000		88	40-140			
Benzo(a)anthracene	1.71	0.40	mg/kg wet	2.000		86	40-140			
Benzo(a)pyrene	1.74	0.40	mg/kg wet	2.000		87	40-140			
Benzo(b)fluoranthene	1.70	0.40	mg/kg wet	2.000		85	40-140			
Benzo(g,h,i)perylene	1.82	0.40	mg/kg wet	2.000		91	40-140			
Benzo(k)fluoranthene	1.79	0.40	mg/kg wet	2.000		89	40-140			
C11-C22 Aromatics1,2	ND ND	15.0	mg/kg wet	2.000		O5	10 110			
C11-C22 Unadjusted Aromatics1	31.8	15.0	mg/kg wet	34.00		94	40-140			
Chrysene	1.75	0.40	mg/kg wet	2.000		87	40-140			
Dibenzo(a,h)Anthracene		0.20		2.000		89	40-140			
	1.78		mg/kg wet							
Fluoranthene	1.77	0.40	mg/kg wet	2.000		88	40-140			
Fluorene	1.68	0.40	mg/kg wet	2.000		84	40-140			
indeno(1,2,3-cd)Pyrene	1.73	0.40	mg/kg wet	2.000		87	40-140			
Naphthalene	1.52	0.40	mg/kg wet	2.000		76	40-140			
Phenanthrene	1.79	0.40	mg/kg wet	2.000		90	40-140			
Pyrene	1.79	0.40	mg/kg wet	2.000		89	40-140			
Surrogate: 2-Bromonaphthalene	1.75		mg/kg wet	2.000		88	40-140			
Surrogate: 2-Fluorobiphenyl	1.81		mg/kg wet	2.000		91	40-140			
Surrogate: O-Terphenyl	1.60		mg/kg wet	2.000		80	40-140			
.cs										
2-Methylnaphthalene Breakthrough	0.0		%				0-5			
Naphthalene Breakthrough	0.0		%				0-5			
LCS Dup										
C19-C36 Aliphatics1	16.8	15.0	mg/kg wet	16.00		105	40-140	8	25	
C9-C18 Aliphatics1	12.6	15.0	mg/kg wet	12.00		105	40-140	17	25	
Decane (C10)	1.3	0.5	mg/kg wet	2.000		66	40-140	22	25	
Docosane (C22)	2.0	0.5	mg/kg wet	2.000		100	40-140	8	25	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
	MAD	EP-EPH Ext	ractable Petro	oleum Hy	/drocarbo	ns				
Batch CC60204 - 3546										
Dodecane (C12)	1.4	0.5	mg/kg wet	2.000		69	40-140	20	25	
Eicosane (C20)	1.8	0.5	mg/kg wet	2.000		91	40-140	7	25	
Hexacosane (C26)	1.7	0.5	mg/kg wet	2.000		87	40-140	6	25	
Hexadecane (C16)	1.7	0.5	mg/kg wet	2.000		85	40-140	11	25	
Hexatriacontane (C36)	1.3	0.5	mg/kg wet	2.000		66	40-140	4	25	
Nonadecane (C19)	1.8	0.5	mg/kg wet	2.000		90	40-140	7	25	
Nonane (C9)	1.0	0.5	mg/kg wet	2.000		50	30-140	23	25	
Octacosane (C28)	1.7	0.5	mg/kg wet	2.000		84	40-140	6	25	
Octadecane (C18)	2.0	0.5	mg/kg wet	2.000		99	40-140	8	25	
Tetracosane (C24)	1.7	0.5	mg/kg wet	2.000		83	40-140	7	25	
Tetradecane (C14)	1.5	0.5	mg/kg wet	2.000		77	40-140	18	25	
Triacontane (C30)	1.6	0.5	mg/kg wet	2.000		81	40-140	6	25	
Surrogate: 1-Chlorooctadecane	1.53		mg/kg wet	2.000		<i>77</i>	40-140			
LCS Dup										
2-Methylnaphthalene	1.81	0.20	mg/kg wet	2.000		91	40-140	13	30	
Acenaphthene	1.78	0.40	mg/kg wet	2.000		89	40-140	11	30	
Acenaphthylene	1.83	0.20	mg/kg wet	2.000		92	40-140	10	30	
Anthracene	1.83	0.40	mg/kg wet	2.000		92	40-140	4	30	
Benzo(a)anthracene	1.67	0.40	mg/kg wet	2.000		84	40-140	2	30	
Benzo(a)pyrene	1.68	0.40	mg/kg wet	2.000		84	40-140	4	30	
Benzo(b)fluoranthene	1.66	0.40	mg/kg wet	2.000		83	40-140	3	30	
Benzo(g,h,i)perylene	1.77	0.40	mg/kg wet	2.000		88	40-140	3	30	
Benzo(k)fluoranthene	1.74	0.40	mg/kg wet	2.000		87	40-140	2	30	
C11-C22 Aromatics1,2	ND	15.0	mg/kg wet							
C11-C22 Unadjusted Aromatics1	31.9	15.0	mg/kg wet	34.00		94	40-140	0.3	30	
Chrysene	1.76	0.40	mg/kg wet	2.000		88	40-140	0.9	30	
Dibenzo(a,h)Anthracene	1.67	0.20	mg/kg wet	2.000		83	40-140	7	30	
Fluoranthene	1.83	0.40	mg/kg wet	2.000		91	40-140	3	30	
Fluorene	1.84	0.40	mg/kg wet	2.000		92	40-140	9	30	
Indeno(1,2,3-cd)Pyrene	1.62	0.40	mg/kg wet	2.000		81	40-140	7	30	
Naphthalene	1.77	0.40	mg/kg wet	2.000		88	40-140	15	30	
Phenanthrene	1.90	0.40	mg/kg wet	2.000		95	40-140	6	30	
Pyrene	1.83	0.40	mg/kg wet	2.000		92	40-140	2	30	
	1.71	0.10	mg/kg wet	2.000		<i>86</i>	40-140	-	30	
Surrogate: 2-Bromonaphthalene	2.06		mg/kg wet	2.000		103	40-140			
Surrogate: 2-Fluorobiphenyl Surrogate: O-Terphenyl	1.67		mg/kg wet	2.000		103 84	40-140			
	0.0		%				0-5		200	
represente productionagn		ADEP-VPH V		eum Hvo	Irocarbon		U J		200	
LCS Dup 2-Methylnaphthalene Breakthrough Naphthalene Breakthrough Batch CB62625 - 5035	0.0 0.0 M /	ADEP-VPH V	% /olatile Petrol	eum Hyc	lro	carbon	carbon	0-5 0-5 carbon	0-5	0-5 200

Blank 1,2,4-Trimethylbenzene

ND 0.20 mg/kg wet

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181 Dependability Quality Fax: 401-461-4486 Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

ESS Laboratory Work Order: 1602554 Client Project ID: Wynn Everett

Quality Control Data

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

MADEP-VPH Volatile	Petroleum H	vdrocarbor
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Batch CB62625 - 5035						
2,2,4-Trimethylpentane	ND	5.00	mg/kg wet			
-Methylpentane	ND	5.00	mg/kg wet			
enzene	ND	0.20	mg/kg wet			
5-C8 Aliphatics1,2	ND	10.0	mg/kg wet			
5-C8 Unadjusted Aliphatics	ND	10.0	mg/kg wet			
9-C10 Aromatics	ND	10.0	mg/kg wet			
9-C12 Aliphatics2,3	ND	10.0	mg/kg wet			
9-C12 Unadjusted Aliphatics	ND	10.0	mg/kg wet			
thylbenzene	ND	0.20	mg/kg wet			
lethyl tert-Butyl Ether	ND	0.05	mg/kg wet			
aphthalene	ND	0.20	mg/kg wet			
-Butylcyclohexane	ND	5.00	mg/kg wet			
Decane	ND	5.00	mg/kg wet			
onane (C9)	ND	5.00	mg/kg wet			
entane	ND	5.00	mg/kg wet			
oluene	ND	0.20	mg/kg wet			
ylene O	ND	0.20	mg/kg wet			
ylene P,M	ND	0.40	mg/kg wet			
urrogate: 2,5-Dibromotoluene - FID	4.56		mg/kg wet	5.000	91	70-130
urrogate: 2,5-Dibromotoluene - PID	4.73		mg/kg wet	5.000	95	70-130
urrogate: Trifluorotoluene - FID	4.29		mg/kg wet	5.333	81	70-130
urrogate: Trifluorotoluene - PID	4.45		mg/kg wet	5.333	83	70-130
cs						
2,4-Trimethylbenzene	9.35	0.20	mg/kg wet	10.00	93	70-130
2,4-Trimethylpentane	13.6	5.00	mg/kg wet	15.00	91	70-130
Methylpentane	13.9	5.00	mg/kg wet	15.00	93	70-130
enzene	4.75	0.20	mg/kg wet	5.000	95	70-130
5-C8 Aliphatics1,2	ND	10.0	mg/kg wet			
5-C8 Unadjusted Aliphatics	36.6	10.0	mg/kg wet	40.00	92	70-130
9-C10 Aromatics	9.27	10.0	mg/kg wet	10.00	93	70-130
9-C12 Aliphatics2,3	ND	10.0	mg/kg wet			
9-C12 Unadjusted Aliphatics	25.0	10.0	mg/kg wet	30.00	83	70-130
thylbenzene	4.87	0.20	mg/kg wet	5.000	97	70-130
ethyl tert-Butyl Ether	14.9	0.05	mg/kg wet	15.00	100	70-130
aphthalene	9.41	0.20	mg/kg wet	10.00	94	70-130
-Butylcyclohexane	8.08	5.00	mg/kg wet	10.00	81	70-130
-Decane	9.27	5.00	mg/kg wet	10.00	93	70-130
onane (C9)	7.72	5.00	mg/kg wet	10.00	77	30-130
entane	10.1	5.00	mg/kg wet	10.00	101	70-130
bluene	13.9	0.20	mg/kg wet	15.00	93	70-130
vlene O	9.39	0.20	mg/kg wet	10.00	94	70-130
ylene P,M	18.8	0.40	mg/kg wet	20.00	94	70-130
Surrogate: 2,5-Dibromotoluene - FID	4.80		mg/kg wet	5.000	96	70-130
urrogate: 2,5-Dibromotoluene - PID	4.94		mg/kg wet	5.000	99	70-130
5 ,	ue, Cranston, RI 029		Tel: 401-461-718		101-461-4486	http://www.ESSLaboratory.com

Quality

Dependability

Fax: 401-461-4486 Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Quality Control Data

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

MADEP-VPH Volatile	Petroleum	Hyc	Irocar	bon
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Batch CB62625 - 5035									
Surrogate: Trifluorotoluene - FID	4.85		mg/kg wet	5.333	91	70-130			
Surrogate: Trifluorotoluene - PID	5.11		mg/kg wet	5.333	96	70-130			
LCS Dup									
1,2,4-Trimethylbenzene	9.11	0.20	mg/kg wet	10.00	91	70-130	3	25	
2,2,4-Trimethylpentane	12.6	5.00	mg/kg wet	15.00	84	70-130	8	25	
2-Methylpentane	12.5	5.00	mg/kg wet	15.00	84	70-130	11	25	
Benzene	4.68	0.20	mg/kg wet	5.000	94	70-130	1	25	
C5-C8 Aliphatics1,2	ND	10.0	mg/kg wet						
C5-C8 Unadjusted Aliphatics	34.9	10.0	mg/kg wet	40.00	87	70-130	5	25	
C9-C10 Aromatics	8.87	10.0	mg/kg wet	10.00	89	70-130	4	25	
C9-C12 Aliphatics2,3	ND	10.0	mg/kg wet						
C9-C12 Unadjusted Aliphatics	22.7	10.0	mg/kg wet	30.00	76	70-130	10	25	
Ethylbenzene	4.76	0.20	mg/kg wet	5.000	95	70-130	2	25	
Methyl tert-Butyl Ether	14.8	0.05	mg/kg wet	15.00	99	70-130	0.7	25	
Naphthalene	9.28	0.20	mg/kg wet	10.00	93	70-130	1	25	
n-Butylcyclohexane	7.61	5.00	mg/kg wet	10.00	76	70-130	6	25	
n-Decane	8.74	5.00	mg/kg wet	10.00	87	70-130	6	25	
Nonane (C9)	7.05	5.00	mg/kg wet	10.00	70	30-130	9	25	
Pentane	9.22	5.00	mg/kg wet	10.00	92	70-130	9	25	
Toluene	13.7	0.20	mg/kg wet	15.00	91	70-130	2	25	
Xylene O	9.22	0.20	mg/kg wet	10.00	92	70-130	2	25	
Xylene P,M	18.3	0.40	mg/kg wet	20.00	92	70-130	2	25	
Surrogate: 2,5-Dibromotoluene - FID	5.04		mg/kg wet	5.000	101	70-130			
Surrogate: 2,5-Dibromotoluene - PID	5.18		mg/kg wet	5.000	104	70-130			
Surrogate: Trifluorotoluene - FID	4.71		mg/kg wet	5.333	88	70-130			
Surrogate: Trifluorotoluene - PID	4.89		mg/kg wet	5.333	92	70-130			

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.

Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

Notes and Definitions

	Notes and Definitions
Z-04	MeOH - covered
U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.

2 Range result excludes concentrations of target analytes eluting in that range 3 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

NR No Recovery

[CALC] Calculated Analyte

SUB Subcontracted analysis; see attached report

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Client Project ID: Wynn Everett ESS Laboratory Work Order: 1602554

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002 http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424 http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

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

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006 http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

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

Pennsylvania: 68-01752

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

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

ESS Laboratory Sample and Cooler Receipt Checklist

Client:			, MA - GZA <u>/C</u>		Date	Project ID: Received:	1602554 2/25/2016	
Shipped/De	elivered Via:		ESS Courier			Due Date: or Project:	5 Day '2	DAY . 22516
	anifest prese		[Yes	6. Does COC	match bottles?		No
2. Were cu	stody seals p	resent?	[No	7. Is COC cor	mplete and correct?		Yes
3. Is radiati	on count <10	00 CPM?	[Yes	8. Were samp	oles received intact?		Yes
	ler Present? 2.6	Iced with:	[[ce	Yes	9. Were labs	informed about <u>short h</u>	nolds & rushes?	Yes No / NA
5. Was CO	C signed and	d dated by cl	ient? [Yes	10. Were any	analyses received outs	ide of hold time?	Yes (No
		· · · -						
•	Sample IDs: Analysis:		Yes			As received? s in aqueous VOAs? nanol cover soil complete	ely?	Yes / No Yes / No Yes) / No / NA
	TAT:			$\overline{}$				
a. If metals	samples pro preserved u el VOAs brou	pon receipt:		(res) / No Date: Date:	Time:Time:	By	r:	
	ceiving Notes						_	
RECE	VEO -	TRIP	BLAN	K N	OT ON COC	•	(C) 2	225.le
) NO 9	050UC	IS REC	ZIVEO	FoX	UPH SAMPLE	S 2,4, le,	8,10	
14. Was th	ere a need to	o contact Pro	oject Manage		Yes/ No			
 a. Was the Who was o 	re a need to ontacted?	contact the one	client? ne/Kyle Ma:	kfield Date:	Yes // No 2/26/16 Time:	Ву	r: 2/26/16	_
	un Trip Bla							
Provided	d informatio	on on missi	ng % solids					
Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cy Pestic	
01	11922	Yes	NA	Yes	4 oz. Jar - Unpres	NP		
02	11927	Yes	NA	Yes	VOA Vial - Methanol 4 oz. Jar - Unpres	MeOH NP		
03 04	11921 11926	Yes Yes	NA NA	Yes Yes	VOA Vial - Methanol	MeOH		
05	11920	Yes	NA	Yes	4 oz. Jar - Unpres	NP		
06	11925	Yes	NA	Yes	VOA Vial - Methanol	MeOH		
07	11919	Yes	NA	Yes	4 oz. Jar - Unpres	NP		
80	11924	Yes	NA _.	Yes	VOA Vial - Methanol	MeOH		
09	11918	Yes	NA	Yes	4 oz. Jar - Unpres	NP		
10	11923	Yes	NA	Yes	VOA Vial - Methanol	MeOH		
2nd Review Are barcode	/ e labels on c	orrect contai	ners?		Yes / No			
Completed By:	1/1/	6			Date & Time: 2.25	14 1715		
Reviewed By:		el_	25		Date & Time: 4/25/	16 1725		

Cooler Present Seals Intact Cooler Temp: Le Yes Relinquished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature)	Container Type: P-Poly G-Gl:	10 Jos/24/2016	9 or/14/2016	8 pr/124/248	7 borhulas	60 orhuhod	5 parfulab	4 ortunes	on/my co	9 without	onfund 1	Sample#	ESS LAB 781-276-5	Norwood	,	Contact Person	- Vame	Con recostaboratory.co	Www. acci-1 461-7181	185 Frances Avenue,	Labor Labor
No NA: No NA: Date/Time Date/Time Date/Time Recei	Glass S-Sterile V-VOA Mat	SIXI	S X agri	1345 XS	1325 X	1330	1330 X	1315 X	1315 X	1250 X	1750 X	Time	5879 Fax #	State MA	7			om	Fax (401) 461-4486	Engineering, Inc. Cranston, RI 02910-	ratory
Comments: 1. PLEASE TAKE MATELIAL [1] Fickup [1] Technicians Date/Time Relinquished by: (Signature) Date/Time Relinquished by: (Signature)	trix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water	3 min 102-20-24-4605-1-102-24-61 /	05T_WW_02.24.16	5 - ENT-02-24-16 UST-EW-02-14-16 / V	S UST_EW_02.24.16	5 Sty UST 02 24-601 50 1 V	5 UST_SW_02.24.6	S BAN-02-02-02-02-02-02-02-02-02-02-02-02-02-	SI vsr-874-02.24.16	S - NW-52-WK-50-150-1-10-1-10-1-10-1-1-1-1-1-1-1-1-1	S UST_NN-02-24.16		Email Address Constitution C		249 Vander 5: H Avenue	171521.41 124 WYNN EVERETT	Project # Project Name (20 Char. or less)	ny of the following: Navy USAC	NH	If faster than 5 days, prior approval by laboratory is required #	CILLIA
Date/Time Received by: (Signature) Date/Time (Bate/Time Received by: (Signature) Date/Time Date/Time	SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters	X		X		X			X			802 MTBE 8100 TPH 8081 Pesticid 82 RCRAS	1 8015 (BTEX 8082 PCB 70 6	25 18 PP	PAH only	gets .8 .8 .23	Circle and/or Write Required Analysis	X Yes No Format POF/6x164	Electronic Deliverable	Reporting Limits Reporting Limits ESSIAB PROJECT ID (OOOCCA	

VIN OF CUSTODY Page of 1	Turn Time Standard Other 188-72 Hwes Reporting Limits ESS LAB PROJECT ID If faster than 5 days, prior approval by laboratory is required #	ty NY ME Other Electronic Deliverable Format POF/6xcec		108 Sets 58 Se	STALS HAV SALA A A A A A A A A A A A A A A A A A	V8 bb 5 5 60 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	BTEX 8015 808 808	Number of Pesticide of Pesticide Pes	5 1 AL X	X > -	16 Ab X	91 × × 1	.6 1 AG X	1 X X - 9	16 1 At X	91.	16 / AG- X		WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters	nts:		Time Relinquished the Signature) Date/Time Received by: (Signature) Date/Time	Relinquished by: (Signature) (Date/T	
CHAIN		Fax (401) 461-4486 MA RI CT NH NJ NY M This project for any of the following: The project for any of the following:	Project # Project Name (20 Char. or less)	1.41 Task 2 WANN	Address 249 Vardes H Avenue	State MA Zip Ozo62 PO#	[T.]	Collection 2 B Z Z Sample Identification (20 Char. or less)	250 X ST NOT NOW - 02-24-16	1250 X S NW_UST_02.44.16	1315 X S VST-874-02-24-16	1315 XS Bry_UST_024.16	1330 X S UST_SW_02.24.16	1330 X S SW-UST, 02.24.16	1315 X S UST_EW_02.24.16	1345 XS EW-UST_02.24.16	1400 X S UST_WW_02.24.16	1400 XIS WW-UST_02:24:16	D-Sludge	No Internal Use Only Comments:		Date/Time Received by: (Stepfature) Date/Time	Received by: (Signature)	·
FSS Laborator	Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211	Tel. (401) 461-7181 Fax (www.esslaboratory.com	Co. Name	624	Contact Person Matt Smith	City Norwood	Telephone # 751-276-5879	ESS LAB Date Co	1 02/m/m9	2 02/24/2016		4 ortwhole) Ses/4/20 0)	1 dulubro F		1 9/11/12/20 6	10 or/w/rak 1	Container Type: P-Poly G-Glass	ant Yes .	Seals Intact Cooler Temp:	Relinquished by: (Signature)	as Selinquished by: (Signature)	

*MADEP requires that all additional calibrated analytes found during analysis be disclosed.

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

Please fax all changes to Chain of Custody in writing.