Proactive by Design

SITE INVESTIGATION REPORT

FORMER TRUK-AWAY LANDFILL

Warwick Industrial Drive
Warwick, Rhode Island

June 2020
File No. 34648.00

PREPARED FOR:
Rhode Island Department of Environmental Management
Providence, Rhode Island

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June 19, 2020
Job No. 03.00034648.00

Mr. Christopher Walusiak
Rhode Island Department of Environmental Management
Office of Customer and Technical Assistance
235 Promenade Street, 3rd Floor
Providence, Rhode Island 02908

Re: *Site Investigation Report*
Former Truk-Away Landfill
Warwick Industrial Drive
Warwick, Rhode Island

Dear Mr. Walusiak:

On behalf of the Truk-Away Landfill Joint Defense Group (Group), GZA GeoEnvironmental, Inc. (GZA) is pleased to provide this *Site Investigation Report* (SIR) for the Former Truk-Away Landfill (Site). This report has been prepared to address the applicable requirements of Rule 1.8 of the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, including the evaluation of remedial alternatives. This report is presented subject to the Limitations presented in Appendix A.

We trust this submittal satisfies your present needs. If you need any additional information, please feel free to contact Richard Carlone at 401-421-4140 or via email at richard.carlone@gza.com.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Richard A. Carlone, P.E.
Senior Project Manager

Todd R. Greene, P.E.
Consultant/Reviewer

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Principal / District Office Manager

Cc: Michael Donegan, Truk-Away Landfill Joint Defense Group

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APPENDICES

1.0 INTRODUCTION

1.1 PROJECT AUTHORIZATION

GZA GeoEnvironmental, Inc. (GZA) prepared this *Site Investigation Report* (SIR) on behalf of Truk-Away Landfill Joint Defense Group (Group) for the Former Truk-Away Landfill located off of Warwick Industrial Drive in Warwick, Rhode Island (Site). Authorization to proceed on this project was granted in accordance with GZA's signed proposal dated May 15, 2019. This report may be subject to modification if additional information is developed subsequently by GZA or any other party. This SIR is subject to the limitations provided in **Appendix A**.

The landfill is subject to two of the Rhode Island Department of Environmental Management's (RIDEM's) regulatory programs; the Solid Waste Program and the Site Remediation Program. This report was prepared to address the applicable requirements established in Section 1.8 of RIDEM's Rules and Regulation for the Investigation and Remediation of Hazardous Materials Releases dated January 2019 (Remediation Regulations); the Solid Waste Program's Solid Waste Regulations No. 2, dated March 2018; and the Closure Policy for Inactive or Abandoned Solid Waste Landfills, dated March 1, 2007.

An SIR Checklist is attached as **Appendix B**. The checklist references previous reports for the Site, as applicable, see Section 1.4, as well as the required information provided in this SIR.

A public notice was distributed on August 8, 2019 announcing that a Site Investigation would commence, as required in RIDEM's Remediation Regulations. The public notice was sent to owners of abutting properties and tenants, local government officials and easement holders.

1.2 PROJECT BACKGROUND

RIDEM reports that the Former Truk-Away Landfill covers approximately 36 acres of a 54-acre property located off of Industrial Drive in Warwick, Rhode Island; the location of the Site is shown on **Figure 1**. It was operated as a solid waste landfill between 1970 and 1978. RIDEM files indicate that the landfill reportedly accepted household/municipal, industrial, institutional, commercial and hazardous waste. The Rhode Island Department of Transportation (RIDOT) took ownership of the property in 1977. The Rhode Island Airport Corporation (RIAC) currently owns the Site and the Rhode Island Department of Administration (RIDOA) is the lead agency implementing the investigation and closure of the former landfill.

Several previous investigations have been conducted at the Site and have identified the following environmental concerns:

- Volatile organic compounds (VOC) at concentrations in groundwater above RIDEM's Method 1 GB Groundwater Objectives;
- The presence of light non-aqueous phase liquid (LNAPL), primarily in one onsite groundwater monitoring well (MW-3), which also contained elevated levels of polychlorinated biphenyls (PCBs) in the LNAPL; and
- Elevated levels of methane and VOCs in soil gas.

1.3 PROJECT OBJECTIVES

Based on the environmental concerns identified above, GZA conducted a Site Investigation in accordance with the RIDEM-approved August 16, 2019 Site Investigation Work Plan (SIWP). The following objectives were identified in the SIWP:

- Complete a Site Investigation to address the applicable sections of the RIDEM Remediation and Solid Waste Regulations, as referenced above;
- Evaluate the landfill's potential impacts to human health and the environment;

- Further evaluate the limits of waste;
- Evaluate the extent of any adjacent wetland areas;
- Evaluate the thickness of the existing landfill cover materials and cover soils uniformity at the required minimum thickness of 2-feet across the former landfill;
- Evaluate whether the existing cover materials contain regulated contaminants at concentrations above the Method 1 Residential Direct Exposure Criteria (RDEC);
- Evaluate the current landfill topography to support future landfill closure and cap design;
- Install a groundwater monitoring well network, up-gradient and down-gradient of the landfill, to document current groundwater quality conditions and groundwater/contaminant migration patterns;
- Install a landfill gas monitoring network to evaluate off-site subsurface landfill gas migration;
- Collect sediment and surface water samples to evaluate the extent and source of impacts;
- Evaluate LNAPL/PCB impacts in the vicinity of existing monitoring well MW-3;
- Evaluate the possible presence of a 15,000-gallon underground storage tank (UST) on-Site;
- Perform a streamlined Screening Level Ecological Risk Assessment (SCLERA) for surface water and sediment;
- Evaluate and recommend appropriate remedial measures which account for the State's long-term property use goals and meet the remedial objects associated with the RIDEM Remediation and Solid Waste Regulations; and
- Develop this *Site Investigation Report* that identifies three feasible remedial alternatives (including the no-action alternative) and includes a recommended remedial alternative for the project.

1.4 FILE REVIEW

GZA has reviewed files provided by RIDEM. Pertinent documents reviewed and referenced throughout this report are:

- *Final Site Inspection Prioritization* dated December 1993 by Camp Dresser & McKee, Inc. (CDM);
- *Mercury contamination at the former Truk-Away Landfill* dated May 1999 by RIDEM;
- *Limited Site Investigation Work Plan* dated August 2000 by CDM;
- *Preliminary Subsurface Investigation and Geotechnical Feasibility Study* dated January 2001 by CDM;
- *Limited Environmental Site Investigation Report* dated March 2001 by CDM;
- *Preliminary Cost Estimate Report* dated January 2002 by CDM;
- *Truk-Away Landfill* dated February 2005 by Lincoln Environmental, Inc. (Lincoln);
- *Site Investigation Report* dated September 2008 by EA Engineering, Science, and Technology, Inc. (EA);
- Data from the Buckeye Brook Total Maximum Daily Load (TMDL) evaluation provided by RIDEM;
- RIDEM Environmental Resources Map; and
- City of Warwick Web GIS Maps and Online Property Information.

2.0 BACKGROUND

The following background information was developed from the various documents listed in Section 1.4, attached as **Appendix C**. Please refer to these reports for additional detailed information.

2.1 SITE LOCATION, DESCRIPTION AND USE

The former Truk-Away Landfill is located off of Warwick Industrial Drive, in Warwick, Rhode Island. A Locus Plan is provided as **Figure 1**. The property is owned by Rhode Island Airport Corporation (RIAC). Approximately 36 acres of the 54-acre property is occupied by an unlined solid waste landfill.

The landfill is currently untended vacant land, which is heavily vegetated with tall grass, shrubs, trees and wetlands. There are currently no buildings present on the property. It is bordered to the north by a runway for T.F. Green Airport, to the north, south and east by wetlands including Buckeye Brook, to the south by residential housing and to the west by industrial properties.

An Exploration Plan is provided as **Figure 2**, which also depicts key Site features, including the delineated landfill footprint (inferred limits of waste), and existing topography. The Site is secured with a chain-link fence, although evidence of trespassing was visible during the investigation.

2.2 SITE HISTORY

The Site was operated as a privately-owned solid waste landfill beginning in 1970, under the name of Warwick Sanitary Landfill. In 1976 the company changed its name to Truk-Away of Rhode Island, Inc. The landfill reportedly accepted household/municipal, industrial, institutional, commercial and hazardous waste. RIDOT assumed ownership of the property in 1977 and landfill operations ceased in 1978. The RIAC currently owns the Site and the RIDOA is the lead agency implementing the investigation and closure of the landfill.

3.0 ENVIRONMENTAL SETTING

The following subsections provide information regarding the general physiographic and hydrogeologic conditions in the area of the Site.

3.1 TOPOGRAPHY, DRAINAGE, SOIL TYPE

Based on a review of the 2018 U.S. Geological Survey topographic map and online GIS mapping, the Site is at an elevation of ±60 feet above mean sea level (MSL). The Site has an approximate 30-foot elevation change from the highest area in the middle of former landfill, to the lowest areas in the wetlands surrounding the north, east and south of the landfill footprint. The regional topographic gradient near the Site slopes downward to the east towards the adjacent Buckeye Brook.

According to the Bedrock Geology Map of the East Greenwich Quadrangle, Rhode Island, dated 1952, the underlying bedrock is Rhode Island Formation (Esmond-Dedham Subterrane) and is described as greenish, gray, dark-gray, to black greywacke, conglomerate, sandstone, shale, and meta-anthracite. Based on review of available mapping, bedrock appears to be located approximately 50 feet below ground surface (bgs). According to the Surficial Geology Map of the East Greenwich Quadrangle, dated 1955, the surficial soils in the vicinity of the Site are comprised of artificial fill underlain by glacial outwash plains. Outwash plains consist of sorted sand, stratified silts, and local deposits of gravel, and can be highly permeable.

The Unites States Natural Resources Conservation Service's Web Soil Survey classifies surficial Site soils as "Dumps" (human transported material) and "Scarboro mucky fine sandy loam" (0 to 3 percent slopes that are very poorly drained).

3.2 GROUNDWATER

Groundwater at the Site is classified as GB by RIDEM. This designation applies to groundwater resources which may not be suitable for human consumption without treatment due to known or presumed degradation. The Site is not located within an area designated as a Groundwater Reservoir. The Site is located approximately 0.9 miles west (upgradient) of an area with a GA Groundwater Classification.

Based on local topography, the inferred direction of groundwater flow is to the east toward the Buckeye Brook. However, the localized direction of groundwater flow near the Site might vary because of underground utilities, subsurface preferential pathways, variations in weather or heterogeneous geological and/or anthropogenic conditions.

According to overlay maps maintained by the RIDEM's Office of Water Resources, the Site is located approximately 3.8 miles east of a non-community wellhead protection area and over 5 miles away from any community wellhead protection areas.

The area surrounding the Site is supplied with public water. We did not verify if potable wells are present on adjacent properties.

3.3 SURFACE WATER

An unnamed brook borders the northern perimeter of the Site and flows into the Buckeye Brook. The Buckeye Brook has been classified as B water by RIDEM which stipulates that these waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquaculture uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value with the caveat that primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges.

The unnamed brook and Buckeye Brook are currently listed by the RIDEM Office of Water Resources on the State of Rhode Island 2016 303(d) List of Impaired Waters, dated March 2018. The 2016 303(d) list identifies water bodies within the state, which may not currently meet Rhode Island Water Quality Standards and for which a Total Maximum Daily Load (TMDL) may be needed. TMDLs are water quality restoration plans that identify water quality goals, necessary pollutant reductions, sources, and implementation plans to achieve the required reductions. RIDEM identifies the unnamed brook and segment of the Buckeye Brook adjacent to the Site as Water Body ID RI0007024R-01 and lists the impairments as benthic-macroinvertebrate bioassessments, cadmium, copper, enterococcus, fecal coliform, iron and dissolved oxygen.

A bacteria TMDL was completed for Buckeye Brook in December 2008 and bacteria impairments were noted in the watershed, as described above. Between 2008 and 2011, RIDEM performed a water quality TMDL evaluation on Buckeye Brook. Study locations TA01 and AP01 were located downgradient from the landfill Site. TA01 sample concentrations taken during dry and wet weather exceeded RIDEM's Freshwater Aquatic Chronic Criteria for cadmium and iron. The AP01 dry weather sample had an elevated total organic carbon (TOC) result, as well as an iron concentration that exceeded RIDEM's Freshwater Aquatic Chronic Criteria. A sampling location map and a summary of the data is included in **Appendix C**.

A review of the *Environmental Resource Map* prepared by RIDEM (http://www.dem.ri.gov/maps/) shows that the Site is located in the Upper Narragansett Bay Watershed. Stormwater at the Site is primarily managed naturally and either flows downgradient from west to east directly into the Buckeye Brook or is sequestered by infiltration through the soils/waste.

Based on a review of Federal Emergency Management Agency (FEMA) Map #44003C0133H dated September 18, 2013, the majority of the Site is located within Zone X. The Zone X designation is for areas with a 0.2% annual chance of flood; areas of 1% annual chance of flood with average depths of less than 1 foot or with drainage areas less than 1-square mile; and areas protected by levees from 1% annual chance of flood. The brook and wetland areas along the north, east and south of the Site are designated by FEMA as an "A, Without Base Flood Elevation (BFE)" zone.

3.4 ENVIRONMENTALLY SENSITIVE AREA

According to the overlay maps maintained by RIDEM's Office of Water Resources, the area along the northeast perimeter of the Site is located within a Natural Heritage Area.

4.0 SITE HISTORY

The landfill is owned by the RIAC and the RIDOA is the lead agency implementing the investigation and closure of the landfill. The Site contains a former unlined municipal solid waste (MSW) landfill that operated from 1970 until 1978. While in operation, the landfill reportedly accepted MSW, household, industrial, institutional, commercial and hazardous waste. The facility began

operations in the elevated northwest section of the property, and then began dumping in the "swampy areas" without first placing any clean material as required by the Rhode Island Department of Health (RIDOH), Division of Solid Waste Management.

During its operation, the landfill was the subject of several complaints including a roach problem, odors due to decaying organic matter and several daily cover and wind-blown refuse control violations. Leachate outbreaks have been historically observed on the eastern, southeastern and southern slopes of the landfill. Prior to the Site's use as a landfill, the property was utilized as a sand and gravel pit. Note that leachate seeps were not observed during GZA's investigation.

4.1 REGULATORY HISTORY

The Site is included on RIDEM's State Solid Waste Facilities/Landfill list and "State Sites" inventory and is also inventoried on the U.S. Environmental Protection Agency's (USEPA's) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list. The Site has an EPA ID of RID987493822 and a State Site ID of SR-35-1576. The CERCLIS list indicates that the State is taking primary oversight responsibility for investigation. The Site is not on the National Priorities List (NPL – Superfund List).

This site investigation has been performed in accordance with the *Closure Policy for Inactive or Abandoned Solid Waste Landfills* (RIDEM March 2001), Section 1.8 of the *Remediation Regulation* and the *Solid Waste Regulations No.2*. In this regard, the goal is to effectuate a remedial action in accordance with applicable RIDEM policies and regulations that results in the issuance of a *Letter of Compliance* from the RIDEM, a *Letter of No Further Action* from the USEPA, and the archival of the Site from CERCLIS.

4.2 REVIEW OF PREVIOUS REPORTS, HISTORICAL DATA AND SITE ASSESSMENTS

The USEPA directed a Site Inspection Prioritization (SIP) in 1993, by CDM. The RIAC also directed several environmental assessments at the Site in the 2000s. These included a Preliminary Subsurface Investigation and Geotech Feasibility Study in January 2001, a Limited Environmental SIR in March 2001 and a Preliminary Cost Estimate Report in January 2002 conducted by CDM. Lincoln conducted a Site Investigation in February 2005 for RIDEM, and EA conducted a Site Investigation in September 2008 for RIDOA. These investigations consisted of soil sampling, sediment sampling, leachate sampling, groundwater sampling, soil gas screening and wetland delineation. Sections 4.2.1 through 4.2.4 discuss the findings of these prior investigations.

4.2.1 CDM Site Investigations

In 1993, CDM conducted sediment and soil sampling, which indicated the presence of VOCs, semi volatile organic compounds (SVOCs), PCBs and Metals. In 2000 CDM further investigated the Site to assess its suitability for redevelopment and advanced 23 test pits around the perimeter of the Site to determine the lateral extent of landfill material. Landfill material extended beyond the southern and western Site boundaries and consisted of plastic, glass, wood, rubber, cloth, and brick. Eight soil borings were performed, with six monitoring wells installed (MW-1, MW-3, MW-5, MW-6, MW-7 and MW-8). A maximum waste material thickness of 40 feet was noted at MW-3 in the central portion of the Site. The soil sample with the highest PID reading from each boring was submitted for VOCs, SVOCs, total petroleum hydrocarbon (TPH), PCBs, TOC, metals, and pesticides analyses. All compounds were below the applicable RIDEM GB Leachability Criteria and only arsenic was detected at levels exceeding the RIDEM Industrial/Commercial Direct Exposure Criteria (I/C-DEC). Six wetland areas were also delineated across the Site.

In November 2000, groundwater samples were collected from the six newly installed wells and analyzed for Hazardous Substance List (HSL) VOCs, SVOCs, PCBs, pesticides, metals, nitrate nitrogen, alkalinity, chemical oxygen demand (COD), chlorides, total dissolved solids (TDS), total cyanide and sulfate. An approximately 2-foot thick layer of LNAPL was observed in MW-3 and a <1/4-inch thick layer of LNAPL was observed in MW-5. Two VOCs (toluene and ethylbenzene) were detected at levels exceeding the RIDEM GB Groundwater Objective in MW-3 and MW-8.

CDM also installed 16 soil vapor probes around the landfill perimeter and on the top of the landfill in November 2000. Landfill gas, particularly elevated levels of methane, were noted in 8 out of the 16 probe locations.

4.2.2 Lincoln Site Investigation

Lincoln conducted a groundwater sampling event in December 2004. During this event, 1.08 ft of LNAPL was observed in MW-3, but there was no evidence of the previously observed LNAPL at MW-5. Groundwater samples were collected from each of the six on-Site wells (MW-1, MW-3, MW-5, MW-6, MW-7 and MW-8) and analyzed for VOCs, SVOCs and PCBs. A LNAPL sample was also collected from MW-3 and submitted for TPH fingerprinting and PCB analysis. The LNAPL was shown to be a mix of gasoline and motor oil and results also indicated the presence of two PCBs (Aroclor 1016 at 68 mg/kg and 1260 at 48 mg/kg). This exceeded the USEPA Toxic Substances Control Act's (TSCA's) 50 parts per million (ppm) limit. No PCBs were detected in groundwater, and the concentrations of detected VOCs and SVOCs were below the applicable RIDEM criteria.

4.2.3 EA Site Investigation

Between March and May 2008 five soil borings were advanced in the vicinity of MW-3 and two groundwater monitoring wells (MW-EA1 and MW-EA2) were installed. Nine soil vapor points were also installed in the vicinity of the previously encountered pocket of landfill gas and surveyed. Results of the soil gas survey indicated that the levels of soil gas present exceeded the Lower Explosive Limit (LEL) for methane at all but one location in the vicinity of MW-3.

Groundwater samples were collected from seven of the on-Site wells (MW-1, MW-5, MW-6, MW-7, MW-8, MW-EA1 and MW-EA2) in June 2008 and analyzed for VOCs. All concentrations of detected VOCs were below the RIDEM GB Groundwater Objectives. A LNAPL sample was also collected from MW-3 and submitted for analysis of VOCs, SVOCs, PCBs and pesticides. Only one PCB (Aroclor 1260) was detected in the LNAPL sample, at a concentration below the 50 ppm TSCA Limit.

5.0 SITE INVESTIGATION

In accordance with the RIDEM-approved August 16, 2019 SIWP, GZA conducted a Site Investigation to achieve the objectives listed in Section 1.3. The Site Investigation was completed between September 2019 and March 2020, and consisted of the following field activities:

- A topographic survey using Aerial Digital Photogrammetry;
- Flagging of the wetlands adjacent to the landfill;
- A geophysical survey and test pits to evaluate the possible presence of USTs on-Site;
- Test pits to delineate the edge of waste and evaluate cover soil thickness;
- Eight Geoprobe® direct push explorations outside of the landfill footprint, with the installation of a groundwater monitoring well in each;
- Four Geoprobe® direct push/auger explorations around MW-3 to further delineate LNAPL/PCB impacts;
- The collection of 19 groundwater samples (12 newly installed wells and 7 existing wells) for VOCs, SVOCs, TPH, Pesticides, PCBs and 15 Solid Waste Metals/Mercury analysis;
- The installation of 13 soil gas probes along the perimeter of the landfill using a Geoprobe® rig and hand driven methods;
- Two rounds of landfill gas (LFG) field measurements;
- The collection 11 sediment samples using the Vibecore-Mini3 sediment sampler for VOCs, SVOCs, TPH, Pesticides, PCBs and 15 Solid Waste Metals/Mercury;
- The collection of 11 surface water samples for VOCs, SVOCs, TPH, Pesticides, PCBs, 15 dissolved Solid Waste Metals/Mercury/Iron and TOC; and
- A complete exploration location survey.

The Site investigation was conducted in accordance with the SIWP. The following deviations were made from the SIWP as noted in GZA's December 5, 2019 email to the Department:

- Soil gas probes were installed in the locations shown in the SIWP generally using hand driven stainless-steel points, rather than as drill rig installed PVC probes. This was necessary due to access limitations (trees, wet areas, etc.). The probes were driven to about 5 feet below ground surface with the bottom six inches screened; and
- The downgradient monitoring wells were installed as close to the locations shown in the SIWP as practical, based on accessibly (standing water, etc.), with the recognition that some were installed within the waste footprint.

5.1 TOPOGRAPHIC SURVEY

WSP USA, INC., under contract to GZA, conducted a topographic survey of the Site on November 22, 2019. The topographic survey was conducted using Aerial Digital Photogrammetry via an airplane with a contour interval of one (1) foot to support future landfill closure/cap design. Survey ground control points were established to align the topographic survey to the Rhode Island State Plan Coordinate System in the North American Datum NAVD 83 and NAVD 88. These points were established using a Leica Zeno 20 (L1/L2) Collector with an AS-10 antenna using real-time kinematic (RTK) correction with an accuracy of 1.0 cm horizontal and 2.0 cm vertical. Existing State Light Detection and Ranging (LIDAR) survey data was also integrated into the plan to show property features and the topography of relevant adjacent areas.

The results of this survey are shown on **Figure 2**.

5.2 WETLANDS FLAGGING

A GZA biologist flagged on-Site wetlands on October 16 and October 22, 2019. Jurisdictional wetlands are present at the southern, eastern and northern landfill toe-of-slope, and are shown on **Figure 2**.

GZA identified three wetland areas on the Site with flagging as follows:

- A1 to A105 (Pink and black striped flagging on the south, east and north of Site);
- B1 to B25 (Pink and black striped flagging on the northwest portion of Site); and
- TOB-A1 to TOB-A7 and TOB1 to TOB27 (Pink flagging on the banks of a perennial stream);

The wetland flag locations and associated perimeter wetlands are shown on Figure 2.

5.3 TANK INVESTIGATION

A 15,000-gallon UST was reportedly located near the former on-Site building. A ground penetrating radar (GPR) survey of the area where the tank was reportedly located was completed on October 2, 2019 by Thielsch Engineering, with oversight provided by GZA. Five anomalies (indicating a potential buried object/structure) were noted and test pits were completed by Hoffman Environmental Services of North Kingstown, Rhode Island in the area of each anomaly on December 3, 2019. No USTs were located; the anomalies from the GPR survey included a scale (presumably used for weighing incoming materials as part of the former landfilling operations), a former dry well/cesspool and buried concrete/metal debris.

Location	Anomaly Found
GPR-1	Former scale
GPR-2	Dry well
GPR-4	Rotted out drum
GPR-5	Sheet metal
GPR-9	Scrap metal

5.4 TEST PIT EXPLORATIONS

Between December 2 and 4, 2019 GZA observed the completion of 11 test pits (TP-1 to TP-11) by Hoffman Environmental Services of North Kingstown, Rhode Island using a CAT 303.5E2 Mini Excavator with a 10 ft reach. See **Figure 2** for test pit locations.

A GZA field engineer was present during the exploration activities to coordinate and document the program, classify soils, prepare test pit logs, field-screen soil samples and collect/prepare samples for laboratory testing. Samples were characterized in the field and test pit logs maintained for each test pit. Copies of the test pit logs are provided in **Appendix D**.

5.4.1 Edge of Waste Delineation

Four test pits (TP-3, TP-5, TP-8 and TP-11) were excavated around the perimeter of the southern and northeastern suspected waste footprint, to supplement the previous edge of waste delineation in areas where data gaps existed. Waste was encountered in all four test pits, at depths ranging from 0-3 ft bgs. Below the waste layer, soils consisted of dark gray/brown sand with varying degrees of gravel and silt.

Generally, the observed edge of waste is consistent with the previous delineation and the updated delineated edge of waste is shown on **Figure 2**. As shown on **Figure 2**, approximately 3.5 acres of the landfill footprint appears to be within flagged wetland areas, most of which is located on the northeastern side of the landfill.

5.4.2 Cover Soil Evaluation

Seven test pits (TP-1, TP-2, TP-4, TP-6, TP-7, TP-9 and TP-10) were excavated across the top of the landfill to evaluate soil cover thickness. In areas where existing cover soil was at least two feet deep, a surficial soil sample was collected and placed into laboratory provided bottles, preserved as appropriate, packed in ice chests and transported under chain-of-custody protocol to ESS Laboratory in Cranston, Rhode Island. A total of three samples (TP-4, TP-7 and TP-9) and two trip blanks were analyzed for one or all of the following parameters:

- VOCs via EPA Method 8260B;
- SVOCs via EPA Method 8270C; and
- 15 Solid Waste Metals via EPA Method 6010B.

In the remaining locations (TP-1, TP-2, TP-3, TP-5, TP-6, TP-8 and TP-11) waste was encountered between 0-2 ft bgs, thus no soil samples were collected.

Note that there were many areas of ponded/perched water within the landfill footprint and areas of soft cover material. Certain areas also contained stockpiles that reportedly consist of street sweepings. These issues will need to be addressed as part of Site capping/closure.

5.5 SOIL BORINGS AND MONITORING WELL INSTALLATIONS

Between December 2, 2019 and January 1, 2020, GZA observed the completion of 12 borings (MW-101 to MW-105, MW-106S/MW-106D, MW-107, and MW-109 to MW-112) by Hoffman Environmental Services using a direct-push/hollow stem auger Geoprobe® rig. Borings were advanced to depths of between 10 and 30 ft bgs.

All 12 locations were completed as groundwater monitoring wells consisting of a 0.010-inch factory slotted nominal 2-inch inside diameter, flush joint, schedule 40 PVC well screen with solid PVC riser, except for MW-110 which was constructed as a 1-inch inside diameter PVC well. The annular space between the well screen and the borehole was filled with a filter sand pack. The sand pack was carried to a depth of 2-feet above the slotted section of the well screen where a 2-foot thick bentonite seal was placed. Any

non-contaminated drill cuttings (based on PID field screening results, described below) were then placed above the bentonite seal to ground surface.

A GZA field engineer was present during the exploration activities to coordinate and document the program, classify soils, prepare boring logs and field-screen soil samples. Samples were characterized in the field and boring logs maintained for each borehole. Copies of boring logs are provided in **Appendix D**.

Soil samples were collected continuously by pneumatically advancing a 5-foot, 2-inch ID steel split-spoon equipped with a dedicated acetate lining. Samples were recovered from a depth of 0 to 5, 5 to 10, 10 to 15, 15 to 20, 20 to 25, 25 to 30 and 30 to 35 feet bgs or refusal, whichever came first. Soil samples recovered for screening were transferred to clean, unpreserved 8-ounce glass jars using a stainless-steel trowel. A new acetate liner was employed for each sample.

5.5.1 Observed Subsurface Conditions

Soil samples recovered during the boring program were observed to generally consist of fine to coarse sand with varying degrees of gravel and silt in all borings. Peat was observed in MW-103 and MW-104 between 4 and 20 ft bgs. Waste was observed in MW-102, MW-105, MW-106S, MW-107, MW-109, MW-111 and MW-112 between 0 and 30 ft bgs. Soil samples were not collected from two borings (MW-106D and MW-110). Refer to the boring logs in **Appendix D** for additional subsurface information. Observed waste consisted included wood, plastic, metal, glass and brick.

5.5.2 Soil Sample Field Screening

Soil samples recovered during drilling activities were field-screened for total volatile organic compounds (TVOC) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 eV lamp and calibrated with a mixture of isobutylene in air. TVOC screening results are provided on the boring logs attached as **Appendix D**.

The TVOC readings were generally low, i.e. below 5 ppm, except in MW-109 between approximately 3 and 5 feet bgs, where an elevated PID screening result of 6.2 ppm was observed.

5.6 GROUNDWATER SAMPLING

Between January 7 and February 14, 2020, groundwater samples were collected from the 12 newly installed wells (MW-101 to MW-105, MW-106S, MW-106D, MW-107 and MW-109 to MW-112) and the seven previously installed wells which could be field located (MW-1, MW-3, MW-5, MW-6, MW-7, MW-8 and MW-EA-01). The groundwater sampling program was executed in accordance with the Work Plan.

Groundwater samples were collected in general accordance with EPA's September 19, 2017 *Low Stress (low flow) Purging and Sampling Procedure* (low flow SOP). As part of that sampling methodology, well stabilization was evaluated through the measurement of specific water quality parameters recorded during the purging process. A variable speed peristaltic pump was utilized to control the rate of purging and limit the drawdown caused by this operation. To avoid cross contamination, dedicated 3/8-inch-outer-diameter (OD) polyethylene tubing, installed in each of the existing wells, was utilized as the intake and discharge tubing for the pumps. Pharmaceutical grade tubing was employed as the pump head tubing and connected to the intake and discharge tubing by clamps sufficient to prevent the introduction of air into the sample.

Prior to sampling, each well was gauged for light and dense non-aqueous phase liquids (LNAPL and DNAPL); no LNAPL or DNAPL was observed in any of the new wells. An approximately 0.81-foot thick layer of LNAPL was present in MW-3 and an approximately 0.70-feet thick layer of LNAPL was present in MW-EA-01, where it has historically been observed.

During the sampling, field readings were recorded for pH, temperature, specific conductance, dissolved oxygen, oxygen reduction potential (ORP) and turbidity using a YSI Pro Series multi-meter with a flow-through cell. Field equipment used to

perform the testing was calibrated according to the manufacturer's instructions before sampling. Field readings are presented in the field sampling logs, attached as **Appendix E** and are summarized on **Table 1**. Specific conductance was generally elevated and ORP was generally electronegative, which is consistent with a landfill environment. Turbidity was also elevated (<5 ntu) in nine wells. Purge water in four of these wells was observed to have a color, which likely contributed to the elevated turbidity.

As indicated on the logs, the readings generally stabilized prior to collecting the samples. The samples were collected in hydrochloric acid-preserved 40-ml glass vials with septa caps, nitric-acid preserved 250-mL poly bottles, and non-preserved 1-L amber glass jars, packed in an ice filled cooler, and transported under chain-of-custody protocol to ESS Laboratories for analysis.

Recovered NAPL and purge water was containerized (from wells where NAPL was present) for subsequent off-Site disposal.

5.6.1 Groundwater Sample Analysis

A total of 19 groundwater samples and three trip blanks were collected, packed in an ice chest and transported under chain-of-custody protocol to ESS Laboratory for some or all of the following parameters:

- VOCs via EPA Method 8260B;
- SVOCs via EPA Method 8270C;
- TPH via EPA Method 8100M;
- Pesticides via EPA Method 8081;
- PCBs via EPA Method 8082;
- 15 Solid Waste Metals via EPA Method 6010; and
- Mercury via EPA Method 7470/7471.

5.7 SOIL GAS PROBE INSTALLATION AND SURVEY

Between December 4 and 18, 2019, 13 landfill gas probes were installed along the perimeter of the landfill, outside of the waste footprint, to evaluate potential landfill gas migration beyond the filling limits. One soil gas probe (SG-3) consisted of a 1-inch inner diameter PVC well, installed using direct-push methods utilizing a Geoprobe® rig. The probe was installed at a depth of approximately 10 ft bgs and was screened along the bottom five feet. The probe was equipped with a steel standpipe extending approximately two feet above the existing ground surface and was equipped with a lock and cover system.

The remaining 12 soil gas probes (SG-1, SG-2 and SG-4 to SG-13) consisted of five-foot-long, 0.5-inch inner diameter steel pipes with holes drilled into the bottom 1 foot of pipe. Before installing the soil gas probes, a hand auger was used to evaluate for the presence of waste to a depth of 1.5 ft bgs. If waste was present, the probe was relocated to a location outside of the waste footprint. The soil gas probes were installed at depths of between 1.5 to 4.5 ft bgs, due to refusal. See the soil gas logs provided in **Appendix D** for installation specifications.

Two rounds of soil gas monitoring were conducted for methane (as a percentage of the lower explosive limit-LEL), oxygen, carbon dioxide and hydrogen sulfide. The results of this monitoring are summarized in **Table 2**. The screen section for six of the probes were completely submerged in water. No readings were collected from these probes and groundwater level indicates that gas migration in those areas will be limited, as landfill gas cannot migrate through water. Methane was detected in two probes, SG-3 and SG-4. In SG-3, methane was detected at a level above 100% of the LEL. These two probes are located along the western edge of waste boundary. Additional soil gas probes are needed in this area to evaluate if landfill gas is migrating offsite.

Location	% Methane	% LEL	% Methane	% LEL
	01/14/2020		02/04/2020	
SG-3	16.3	326	0	0
SG-4	2.6	52	4.6	92

5.8 SEDIMENT SAMPLING

Between October 16 and 18, 2019, 11 sediment samples were collected from the wetlands adjacent to the landfill. The sediment sampling locations are shown on **Figure 2**. The sediment samples were collected by hand using a Vibecore-Mini3, a handheld vibracore device. The sediment core tool was driven to three feet below the top of sediment at each of the locations. Three samples from each sediment core were collected from the following depths: 0 to 6 inches, 6 to 18 inches and 18 to 36 inches. These depths were selected to evaluate both potential impacts to benthic invertebrates, which will generally reside in the shallowest sediment and to evaluate historic impacts from landfill operation, which may be present in deeper sediments.

A total of 33 sediment samples and three trip blanks were collected, packed in an ice chest and transported under chain-of-custody protocol to ESS Laboratory. The top two samples (0 to 6 inches and 6 to 18 inches) were submitted for the following laboratory analyses:

- VOCs via EPA Method 8260B;
- SVOCs via EPA Method 8270C;
- TPH via EPA Method 8100M;
- Pesticides via EPA Method 8081;
- PCBs via EPA Method 8082;
- 15 Solid Waste Metals via EPA Method 6010; and
- Mercury via EPA Method 7470/7471.

The 18 to 36-inch sample was placed on hold, to be tested only if significant impacts were observed in the upper two samples. Five of these samples (SSW-4, SSW-5, SSW-7, SSW-9 and SSW-11) were tested due to impacts in shallower samples and to evaluate if deeper impacts were present.

5.9 SURFACE WATER SAMPLING

On December 10, 2019 eleven surface water samples were collected from the wetlands adjacent to the landfill. The surface water sampling locations are shown on **Figure 2**. A total of 11 surface water samples and one trip blank were collected, packed in an ice chest and transported under chain-of-custody protocol to ESS Laboratory for the following parameters:

- VOCs via EPA Method 8260B;
- SVOCs via EPA Method 8270C;
- TPH via EPA Method 8100M;
- Pesticides via EPA Method 8081;
- PCBs via EPA Method 8082;
- 15 Solid Waste Metals via EPA Method 6010;
- Mercury via EPA Method 7470/7471;
- Iron via EPA Method 6010; and
- TOC via EPA Method 9060.

The metals samples were field filtered with a 0.45-micron filter, as metals surface water criteria are generally based on dissolved contaminant levels.

5.10 EXPLORATION LOCATION SURVEY

Exploration location surveys were performed in December 2019 and March 2020. On December 10, 2019 the locations of the sediment and surface water samples were collected by GZA using a Trimble® RI GNSS receiver with 50 cm accuracy. On December 12, 2019 the locations of the wetland flags were collected using a Leica Zeno 20 (L1/L2) Collector with an AS-10

antenna using real-time kinematic (RTK) correction with an accuracy of 1.0 cm horizontal and 2.0 cm vertical. On February 25, 2020 the locations of the GPR anomalies, test pits, monitoring wells and soil gas probes were located using the Leica Zeno 20.

Depth to static groundwater on a Site-wide basis ranged from approximately 3 to 23 feet bgs, based on readings collected in January 2020. Using wellhead elevation survey data collected by GZA on February 25, 2020, groundwater elevations were found to range from 15 to 29 feet in reference to the North American Vertical Datum of 1988 (NAVD 88). Groundwater elevation measurements are summarized in **Table 3** and shown on **Figure 2**. Based on the groundwater elevations, groundwater flow is inferred to flow radially out from the landfill mound to the adjacent wetlands.

We note that localized groundwater flow patterns may vary significantly from those shown due to heterogeneous subsurface conditions, the presence of underground utilities, river elevation changes, and variations in rainfall recharge.

6.0 LABORATORY RESULTS

To evaluate the significance of the analytical data in terms of regulatory criteria, GZA compared the laboratory data to the Method 1 criteria established by current RIDEM Remediation Regulations. Throughout subsequent discussions of the analytical results, the following have been considered and/or assumed:

- The Site is located in a GB-designated resource area; GB Groundwater Criteria and GB Leachability Criteria are applicable; and
- The Site's current and intended future use is commercial, and as such, the I/C-DEC are applicable. Note that cover soils were compared to the RDEC, to evaluate if they may be used as part of a landfill cap.

6.1 DATA VALIDATION AND USEABILITY

GZA performed a modified Tier I Plus data validation/data usability assessment for the groundwater, sediment and surface water data collected as part of this study. This assessment was completed in accordance with the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (12/96)*. As indicated in the Analytical Data Reports attached in **Appendix F**, all samples were received intact and under appropriately executed chains-of-custody. Based on review of the QA-QC documentation, the following data was qualified:

- In one groundwater data package, the laboratory control sample bromomethane was below the acceptable QA/QC range. As this compound was non-detect in the associated sample (MW-107R) the result was rejected. All other sample results were accepted without qualifications.
- Methylene chloride (a common laboratory contaminant) was detected in the Trip Blank for certain sediment samples. Methylene chloride was detected at low concentrations below the level detected in the Trip Blank in seven of the associated sediment samples. The results for this compound have therefore been reported as undetected (U).
- In the laboratory control sample for sediment sample SSW-4 6-18in, dichlorodifluoromethane was below the acceptable QA/QC range. As this compound was non-detect in the associated sample (SSW-4 6-18in) the result was rejected.
- All other sample results were accepted without qualification.

6.2 COVER SOIL ANALYTICAL RESULTS

A total of three cover soil samples and two trip blanks were collected and submitted for analytical testing. Analytical results are shown in **Table 4**. No VOCs or SVOCs were detected above the method reporting limit (MRL) in any of the samples or trip blanks. Various metals were detected above the MRL in all three samples, but were well below RIDEM's I/C-DEC and RDEC.

6.3 GROUNDWATER ANALYTICAL RESULTS

A total of 19 groundwater samples and three trip blanks were collected and submitted for analytical testing. A detailed description of the contaminants encountered is presented below. Analytical results are shown in **Table 5**. Note that while groundwater at the Site and the surrounding area are classified as a GB resource, exceedences of the GA Groundwater Objective are also discussed below for comparison purposes only.

6.3.1 VOCs

Two VOCs were detected above RIDEM's GB Groundwater Objectives, each in one well; ethylbenzene in MW-EA-01 (inside the waste footprint) and vinyl chloride in MW-101 (outside of the waste footprint). Benzene and chlorobenzene were also detected above RIDEM's GA Groundwater Objective in 12 wells and 2 wells, respectively. Various other VOCs were detected above the MRL, but below the applicable GA and GB Groundwater Objectives.

6.3.2 SVOCs

One SVOC, bis(2-Ethylhexyl)phthalate, was detected in eight samples at concentrations above the GA Groundwater Objective (no GB Groundwater Objectives have been established for SVOCs). All other SVOCs were below the MRL and/or the GA Groundwater Objective.

6.3.3 TPH

TPH was detected in 17 samples at concentrations ranging from 0.5 to 20.3 mg/L; there are no applicable GA or GB Groundwater Objectives for TPH.

6.3.4 Metals

Arsenic was detected in one sample, cadmium in two samples, lead in four samples and nickel in two samples at concentrations above the applicable GA Groundwater Objectives. All other sample results were below the GA Groundwater Objectives or non-detect. We note that no GB Groundwater Objectives have been established for metals.

6.3.5 Pesticides

Five pesticides (4,4'-DDD, alpha-Chlordane, gamma-Chlordane, Total Chlordane, and methoxychlor) were detected at concentrations greater than the MRL, but below the GA Groundwater Objectives.

6.3.6 PCBs

Aroclor 1242 was detected in seven samples above the MRL, with three of the samples detected at concentrations above the GA Groundwater Objective. Aroclor 1254 was detected in three samples above the MRL, with one of the samples detected at a concentration above the GA Groundwater Objective. Aroclor 1260 was detected in one sample above the GA Groundwater Objective. All other PCBs results were below the MRL. Again, no GB Groundwater Objectives have been established for PCBs.

6.3.7 MW-3 Area LNAPL/PCB Evaluation

An approximately 0.81-foot thick layer of LNAPL was present in MW-3 at 20.5 ft bgs; and an approximately 0.70-foot thick layer of LNAPL was present in MW-EA-01 at 17.7 ft bgs. LNAPL has historically been observed been observed in both of these wells. LNAPL was not encountered in the four new wells (MW-109 to MW-112) installed around MW-3 to assess the aerial extent of LNAPL in the area.

Benzene was detected in all six samples, at concentrations above RIDEM's GA Groundwater Objective. Ethylbenzene was also detected above RIDEM's GA and GB Groundwater Objectives in MW-EA-01. The SVOC bis(2-Ethylhexyl)phthalate was detected in five samples (MW-3, MW-EA-01, MW-110, MW-111 and MW-112) at concentrations above RIDEM's GA Groundwater Objective. All other VOC and SVOC results were below GA and GB Groundwater Objectives in samples from these landfill interior wells.

TPH was detected at levels ranging from 1.65 mg/L in MW-112 to 20.3 mg/L in MW-EA-01; there are no GA or GB Groundwater Objectives for TPH. The PCB Aroclor 1242 was detected in samples from wells MW-3, MW-EA-01, MW-110 and MW-111 at concentrations above the MRL, with the concentration detected in MW-EA-01 exceeding the GA Groundwater Objective. Aroclor 1260 was also detected in MW-EA-01 at a concentration above the GA Groundwater Objective. Aroclor 1254 was also detected in MW-3 above the MRL, but below the GA Groundwater Objective. All other PCB and Pesticide results were below the MRL.

6.4 SEDIMENT ANALYTICAL RESULTS

A total of 33 sediment samples (11 locations with samples taken from 0 to 6 inches, 6 to 18 inches and 18 to 36 inches) and three trip blanks were collected. The top two samples from each location were submitted for laboratory analysis and the bottom sample was placed on hold, to be tested only if significant impacts were observed in the upper two samples. Five of the bottom samples were analyzed due to impacts in shallower samples and to evaluate if deeper impacts were present. A detailed description of the contaminants encountered is presented below. Analytical results are shown in **Table 6**.

Sediment data in **Table 6** is compared to Threshold Effects Concentration (TEC) Freshwater Screening Criteria representing concentrations at or below which adverse effects are not expected. Sediment concentrations were also compared to Probable Effect Concentration (PEC) Freshwater Screening Criteria, which are concentrations that have been detected in sediments that have often been associated with adverse effects to benthic organisms[1]. Note that these screening levels are not regulatory criteria and are provided as a point of comparison for ecological risk screening purposes only.

It has become widely recognized that many TECs are very conservative values that are often comparable to background, and such concentrations often do not pose a significant risk of harm. For this reason, for example, Massachusetts Department of Environmental Protection (MassDEP) has adopted the PECs as their screening values for most metals, rather than the TECs. MassDEP's decision was based on experience with many risk assessments for which toxicity testing showed that concentrations comparable to TECs were not toxic to benthic organisms. Comparing sediment concentrations to PECs is often more helpful in focusing the evaluation on sediment conditions that have a higher potential to cause toxic effects. As such, exceedences of TEC Freshwater Screening Criteria are included in **Table 6** for comparison purposes and only PEC Freshwater Screening Criteria exceedences are discussed in this report.

6.4.1 VOCs

Only three VOCs (1,4-dichlorobenzene, chlorobenzene and methylene chloride) were detected in the samples, all were observed at concentrations significantly below RIDEM's R-DEC, I/C-DEC and Freshwater Sediment Screening Criteria (PECs). All other VOCs results were below the MRL.

[1] The Freshwater Sediment Screening Criteria are a compilation of ecological screening benchmarks from USEPA Region 5, Threshold Effect Concentrations (TEC) presented in MacDonald et al. 2000, Freshwater Sediment Quality Guidelines from MacDonald et al. 1999 and Freshwater Sediment Guidelines from NOAA Sediment Quick Reference Tables (SQUIRTs).

6.4.2 SVOCs

Various SVOCs were detected in several samples in the 0 to 6-inch and the 6 to 18-inch samples at concentrations below RIDEM's R-DEC, I/C-DEC and PEC Freshwater Sediment Screening Criteria (including the PEC for total PAHs). All SVOCs in the 18 to 36-inch samples were below their MRLs.

6.4.3 TPH

TPH was detected in five locations in the 0 to 6-inch range and one location in the 6 to 18-inch range at concentrations below RIDEM's R-DEC, I/C-DEC and Freshwater Sediment Screening Criteria. All other TPH results were below the MRL.

6.4.4 Metals

Arsenic was detected above RIDEM's I/C-DEC in SSW-5 (6 to 18 inches), SSW-6 (0 to 6 inches), SSW-8 (0 to 6 inches) and SSW-11 (6 to 18 inches). Note that RIDEM's arsenic I/C DEC is below the PEC Freshwater Screening Criteria of 33 mg/kg and no exceedences of the PEC were observed.
All other sample results were below RIDEM's R-DEC, I/C-DEC and Freshwater Sediment Screening Criteria or non-detect.

6.4.5 Pesticides

One pesticide (4,4'-DDE) was detected in the 6 to 18 inch sample at concentrations greater than the PEC Freshwater Sediment Screening Criteria in sediment sample SSW-11, the most downgradient location which includes contributions from non-landfill sources, i.e., this location accepts stormwater flows from the adjacent TF Green Airport. Chlordane, alpha-chlordane and gamma-chlordane were also detected in sediment sample SSW-2 in the 0 to 6-inch sample at a concentration above RIDEM's RDEC and/or the PEC Freshwater Sediment Screening Criteria. All other sample results were below RIDEM's R-DEC, I/C-DEC and Freshwater Sediment Screening Criteria or non-detect.

6.4.6 PCBs

All PCBS results were below the MRL for all locations and depths.

6.5 SURFACE WATER ANALYTICAL RESULTS

A total of 11 surface water samples and three trip blanks were collected and submitted for analytical testing. A detailed description of the contaminants encountered is presented below. Analytical results are shown in **Table 7**.

6.5.1 VOCs

Chlorobenzene was detected in SSW-9 at a concentration exceeding RIDEM's Freshwater Aquatic Chronic Criteria (FWCC). Various other VOCs were also detected in SSW-5, SSW-6, SSW-7, SSW-8 and SSW-9 at concentrations below RIDEM's FWCC. All other VOCs results were below the MRL.

6.5.2 SVOCs

Two exceedances of RIDEM's FWCC (naphthalene and 1,4-dichlorobenzene) were noted in SSW-9. All other sample results were below RIDEM's Water Quality Criteria or non-detect.

6.5.3 TPH

TPH was detected in nine samples at concentrations ranging from 0.2 to 1.52 mg/L; there is no applicable State Water Quality Criteria for TPH.

6.5.4 Dissolved Metals

Iron was detected in six samples, cadmium in one sample, nickel in one sample and zinc in three samples at concentrations exceeding RIDEM's FWCC. Cadmium was also detected in one sample (SSW-6) above RIDEM's Acute Ambient Water Quality Criteria. All other sample results were below the State Water Quality Criteria or non-detect.

6.5.5 Pesticides

All pesticide results were below the MRL for all locations.

6.5.6 PCBs

Aroclor 1242 was detected in surface water sample SSW-9 at a concentration exceeding the RIDEM's FWCC. All other PCBs results were non-detect.

6.6 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT (SCLERA)

As described in the sections above, GZA compared sediment and surface water data to relevant and/or applicable ecological screening criteria (PEC ecological sediment screening benchmarks and AWQC, respectively). One pesticide (4,4'-DDE) was detected in the 6 to 18-inch at a concentration greater than the PEC Freshwater Sediment Screening Criteria in SSW-11. This is the most downgradient sediment and surface water sampling location and conditions here likely include contributions from non-landfill sources. Chlordane, alpha-chlordane and gamma-chlordane were also detected above the PEC Freshwater Screening Criteria in the SSW-3 0 to 6-inch sample All other SVOCs, metals and pesticides, and all VOCs and PCBs were below the Freshwater Sediment Screening Criteria or non-detect.

Chlorobenzene was detected in surface water sample SSW-9 at a concentration exceeding RIDEM's FWCC. Two SVOCs (1,4-Dichlorobenzene and naphthalene) were detected in SSW-9 at concentrations exceeding RIDEM's FWCC. Iron was detected in six samples, cadmium in one sample, nickel in one sample and zinc in three samples at concentrations exceeding RIDEM's FWCC. One cadmium exceedance of RIDEM's Freshwater Aquatic Acute Criteria was also observed. Aroclor 1242 was detected in SSW-9 at a concentration exceeding the RIDEM's FWCC. All other VOCs, SVOCs, dissolved metals, pesticides and PCBs were below RIDEM's Water Quality Criteria or non-detect.

It is GZA's opinion that there is a low potential for significant risk of harm to ecological receptors in the adjacent wetlands. This opinion is based on comparing contaminant concentrations in surface water and sediment samples to ecological screening benchmarks. These comparisons indicate that:

- For surface water, exceedances are largely limited to dissolved iron in samples from six locations, dissolved cadmium in one location and dissolved zinc at three locations. Because iron in surface water occurs in complexes with low bioavailability, the water quality benchmark for iron is a relatively poor predictor of toxicity. The magnitude of exceedances by zinc was relatively low for two sample, however, 1.31 mg/l of zinc detected in SSW-6 is 22 times higher than the chronic water quality benchmark. If this higher concentration is typical, dissolved zine may be causing significant risk to aquatic receptors in the vicinity of SSW-6 sampling location. As discussed in Section 8.00, a long-term surface water sampling program is planned for the adjacent wetland area. Those data will allow a better assessment of the potential risk posed by iron, zinc, and other contaminants of concern; and

- For sediment, there were relatively few exceedances of the PECs, and the locations of exceedances were scattered throughout the area sampled. Sediment benchmark exceedances did not show a pattern that might indicate particular areas, or larger areas that may present a greater concern. It is GZA's opinion that additional evaluation of potential ecological risks from sediment contaminants is not warranted given the relatively few sediment benchmark exceedances, the small magnitude of the exceedances, and no pattern of exceedances that would suggest potentially significant exposures of benthic organisms over areas large enough to be represented by more than one sample location. Summary and Conclusions

7.0 SUMMARY AND CONCLUSIONS

This *Site Investigation*, conducted for property identified as the Former Truk-Away Landfill on Warwick Industrial Drive in Warwick, RI (the Site), was performed for the Truk-Away Landfill Joint Defense Group to address the requirements of two RIDEM regulatory programs: the Solid Waste Program (due to the former use of the property as a solid waste disposal facility) and the Site Remediation Program (due to the Site's CERCLIS designation). The investigation involved the collection, screening and/or laboratory testing of soil gas, soil, groundwater, sediment and surface water samples by GZA. Based on our evaluation of the project data, the following observations and conclusions have been developed.

- The Site contains a former unlined landfill that operated from 1970 to 1978. While in operation, the landfill accepted, household, industrial, institutional, commercial and hazardous waste.

- The Site is located at the end of Warwick Industrial Drive in Warwick, RI and is owned by the RIAC. Approximately 36 acres of the 54-acre property is occupied by the unlined municipal landfill.

- In general, cover soils encountered in test pits were observed to consist of sand with varying degrees of gravel and silt. Generally, the cover soil thickness was observed to be between 1 and 2 feet. Only three locations had an existing cover soil thickness of > 2 feet. Laboratory analyses of these three locations showed no exceedances of the RIDEM's R-DEC.

- Solid waste was observed in test pits located around the perimeter of the southern and northern suspected waste footprint, at depths ranging from 0-3 ft bgs. Generally, the observed edge of waste is consistent with the previous delineations. On the landfill perimeter, especially the northeastern side of the landfill, waste appears to have been deposited into the wetland area.

- Landfill gas containing levels of methane above RIDEM's criteria of 25% of the LEL were observed in samples from two perimeter monitoring probes along the western edge of waste boundary. Additional soil gas probes will be required in this area to evaluate if landfill gas is migrating offsite.

- Groundwater at the Site is present at depths of between approximately 3 to 23 feet bgs. The surveyed elevations of the monitoring well network indicate that groundwater flows radially out from the landfill mound to the adjacent wetlands. Note that groundwater appears to be mounded within the landfill.

- A total of 19 wells, seven existing and 12 newly installed, were sampled and submitted for analytical testing of VOCs, SVOCs, TPH, Pesticides, PCBs, 15 solid waste metals and mercury. The resultant data, when compared to the RIDEM's GA Groundwater Objectives, indicated exceedances for certain VOCs (benzene, chlorobenzene, ethylbenzene or vinyl chloride), the SVOC bis(2-Ethylhexyl)phthalate, PCBs and/or certain metals (arsenic, cadmium, lead and nickel) in each of the sampled wells. The only detected GB Groundwater Objective exceedences were for ethylbenzene and vinyl chloride, each in one well.

- An approximately 0.81-foot thick layer of LNAPL was present in MW-3 and an approximately 0.70-foot thick layer of LNAPL was present in MW-EA-01. LNAPL has historically been observed in both of these wells. LNAPL was not encountered in the four new wells (MW-109 to MW-112) installed around MW-3 to assess the aerial extent of LNAPL in the area.

- A total of 33 sediment samples (11 locations with samples taken from 0 to 6 inches, 6 to 18 inches and 18 to 36 inches bgs) were collected. The top two samples from each location as well the bottom sample from five locations were submitted for laboratory analysis of VOCs, SVOCs, TPH, Pesticides, PCBs, 15 solid waste metals and mercury. Laboratory results showed limited exceedences of the RIDEM's R-DEC for arsenic in the top six inches and limited exceedences of ecological screening criteria for pesticides, in the top 18-inches of sediment.

- A total of 11 surface water samples were collected and submitted for analytical testing of VOCs, SVOCs, TPH, Pesticides, PCBs, 15 solid waste metals, mercury, iron and TOC. Laboratory results showed exceedences for State Water Quality Criteria for chlorobenzene in one sample, SVOCs in one sample, iron in each of the eleven samples (including the background sample) cadmium in one sample, nickel in one sample and zinc in three samples.

- It is GZA's opinion that there is a low potential for significant risk of harm to ecological receptors in the adjacent wetlands. This opinion is based on comparing contaminant concentrations in surface water and sediment samples to ecological risk screening benchmarks.

8.0 EVALUATION OF REMEDIAL ALTERNATIVES

To address the requirements of Section 1.8.4 of the Remediation Regulations, GZA has evaluated three conceptual remedial alternatives for the Site. In developing these remedial alternatives, we have taken into consideration the following:

- Groundwater at the Site and the surrounding area is classified as GB;
- PCB containing LNAPL is present within waste;
- The landfill has not yet been properly closed in accordance with applicable regulatory requirements;
- Landfill cover material thicknesses and minimum slope requirements (e.g., ponded water exists within the landfill footprint) need to be addressed;
- The groundwater data shows on-Site and downgradient exceedances of GA, and in limited cases GB, Groundwater Objectives. Note that groundwater at the Site and the surrounding area are classified as a GB resource; the nearest GA resource is 0.9 miles east of the Site;
- Landfill gas exceeded 100% of the LEL along the western landfill perimeter; and
- Limited ecological risk is present in abutting wetlands (surface water and sediment)

The following three remedial alternatives were developed to address the above issues:

Alternative #1 - No Action Alternative: This alternative results in no institutional controls or active remedial measures. This does not address the presence of the former landfill, as municipal solid waste is present over much of the Site or any of the observed impact to environmental media. As such, the "no further action" alternative is not considered protective of human health and the environment; and does not address applicable regulatory requirements.

Alternative #2 – Institutional Controls: Under this alternative, an Environmental Land Use Restriction (ELUR) as outlined in Section 1.9.9 of the Remediation Regulations could be placed on the property, prohibiting future groundwater use and limiting land use to industrial/commercial activities. However, this does not address the current landfill conditions (i.e., both steep and flat slopes, poor drainage, etc.) or impacts to various environmental media. Simply limiting the property use to industrial/commercial

development and precluding groundwater use will not address all potential contaminant exposure pathways and does not provide full regulatory compliance. As such, institutional controls alone are not considered a viable remedial alternative.

Alternative #3 – *Site Capping and Institutional Controls*: This third, and recommended, alternative includes the remedial actions described above in Alternative 2 (Institutional Controls consisting of an ELUR) landfill capping and long term environmental monitoring. This alternative involves a combination of remedial measures and incorporates requirements of the applicable Site Remediation and Solid Waste regulatory programs. This alternative consists of:

Landfill Capping

1. Low Permeability Soil Cap - Install a cap over the landfill so that all areas of the Site that received solid waste are provided with a cap thickness of not less than 2 feet. In order to limit infiltration through the soil cap, we propose the following cap cross-section from bottom to top:

    - Existing soil, waste and borrow soils will be graded to meet subgrade slope requirements;
    - Install a permeable geotextile warning barrier to prevent direct exposure to waste and contaminated soils;
    - Place 18 inches of low permeability soil ($1x10^{-4}$ cm/sec maximum hydraulic conductivity); and
    - Cover with 6 inches of plantable soil/topsoil, seeded to establish vegetative cover.

    Waste deposited within wetland areas will remain in place and will not be capped. The cap design will incorporate passive or active LFG vents, 1 per acre, to limit the lateral migration of methane and other volatile contaminants.

    The source of the cover material for use above the permeable geotextile will be evaluated to demonstrate that it does not contain contaminants at concentrations above the Method 1 R-DEC. Existing cover soils may be utilized in the final cap if they meet the R-DEC and existing cover soils and waste may be used for shaping and grading of the cap subgrade. This activity may require an approved beneficial use determination (BUD) from RIDEM.

    This will address the regulatory requirement to properly close the landfill and mitigate any direct exposure risk associated with contact with waste or contaminated soils, if present.

2. Re-grade the Site, or portions thereof, to meet minimum drainage slope (i.e., 3% to 5%) and maximum stable slope (i.e., 3:1) requirements of Section 2.2.12 of the Solid Waste Regulations No. 2.

    This action will help to control soil erosion, reduce infiltration of precipitation, eliminate ponded/perched water and associated leachate generation, and manage stormwater drainage.

ELUR

To protect the long-term effectiveness of the remedy RIDOA will establish an ELUR for the property. The ELUR will serve to:

- Restrict the property's use from any residential development;
- Require that the Site's landfill cap and other engineered controls remain in good condition;
- Prohibit the use of groundwater at the Site for drinking water;
- Contain a Soil Management Plan (SMP) for any post-closure soil disturbance;
- Provide for annual inspection by an Environmental Professional; and
- Existing soil, waste and borrow soils will be graded to meet subgrade slope requirements.

LFG Migration Evaluation

We will further evaluate gas migration on the western side of the landfill through the installation and monitoring of additional probes. This investigation will focus on areas west of SG-3 and SG-4, where methane levels above 100% of the LEL was observed. This will be conducted as part of a Limited Design Investigation (LDI).

Cesspool/Dry Well

A cesspool/dry well was located by the GPR survey/test pit program on the western portion of the landfill, in the vicinity of the former onsite building. This requires further investigation (borings and monitoring wells) and soil/groundwater testing. This will be conducted as part of an LDI. As part of this work, we will resample the LNAPL in MW-3 MW-EA-01 for PCBs for comparison to TSCA's 50 ppm limit.

Environmental Monitoring

An environmental monitoring program (EMP), which incorporates, to the extent practical, the monitoring wells and soil gas probes installed as part of the SIR will be developed. The groundwater sampling program will incorporate the use of EPA's Low-Flow well purging and sampling protocols. The analytical program will include the organic and inorganic target analytes identified in Appendix A of RIDEM's Solid Waste Regulations No. 2. According to these regulations (Section 2.1.9), groundwater monitoring needs to be performed at the Site for 30 years. We propose that monitoring be conducted quarterly during closure and for 2 years following closure. Thereafter, the frequency should be reduced to semi-annual and then annual (assuming the data supports such a reduction in monitoring frequency). The groundwater monitoring program will include certain scheduled milestones at which the frequency of the sampling can be re-evaluated.

As part of groundwater monitoring, LNAPL (where observed) will be manually bailed and containerized on a quarterly basis.

A surface water monitoring program will be conducted in conjunction with the groundwater monitoring program, to evaluate changes in surface water concentrations over time.

Perimeter soil gas monitoring will be performed in conjunction with the groundwater monitoring program. Soil gas monitoring will include field screening for total volatile organics via PID screening, H_2S, and Methane as LEL.

The EMP will be used to assess the effectiveness of landfill capping and source control on reducing groundwater contaminant concentrations both on- and off-Site. Additionally, the perimeter soil gas monitoring will be used to evaluate the effectiveness of the passive landfill gas venting at limiting lateral methane and VOC migration, and to assess the need for active migration control.

9.0 RECOMMENDED REMEDIAL ALTERNATIVE

Alternative #3, is the recommended remedial alterative for the Site. In proposing this alternative, it is GZA's opinion that this Alternative is consistent with the current and foreseeable reuse of the Site and mitigates current and future risks from identified onsite contamination and off-Site mitigation.

10.0 CERTIFICATIONS

To address Rule 1.8.5 of the Remediation Regulations, the following statements of certification are provided.

GZA GeoEnvironmental, Inc. certifies to the best of its knowledge, that this Site Investigation Report is complete and accurate.

Edward A. Summerly, P.G.
Principal / District Office Manager
GZA GeoEnvironmental, Inc

As a designee of the Truk-Away Landfill Joint Defense Group, I certify, to the best of my knowledge, that this Site Investigation Report is a complete and accurate representation of the Site and the release, and contains all known facts surrounding the release.

Michael P. Donegan, ESB/RAC
Michael Donegan
Truk-Away Landfill Joint Defense Group

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TABLES

TABLE 1
SUMMARY OF GROUNDWATER SAMPLING PARAMETERS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	MW-1	MW-3	MW-5	MW-6	MW-7	MW-8	MW-EA-01	MW-101	MW-102	MW-103	MW-104
		01/09/2020	01/07/2020	01/08/2020	01/08/2020	01/09/2020	01/08/2020	01/07/2020	01/09/2020	01/08/2020	01/08/2020	01/08/2020
		Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
pH	SU	6.3	6.3	6.3	6.9	6.6	6.3	6.2	6.4	6.3	6.2	6.4
Temperature	(oC)	9.9	11.3	12.4	11.9	8.3	10.9	11.4	7.7	10.7	6.7	8.7
Specific Conductivity	mS/cm	1102	1393	898	3709	993	1101	1084	574	1138	209.5	266.3
Dissolved Oxygen	mg/L	0.32	0.02	0.40	0.03	0.23	0.36	0.04	0.38	0.29	1.96	0.14
Oxidation Reduction Potential	mV	-18.2	-18.0	-28.6	-45.9	-39.7	-51.8	-19.2	-37.7	-39.9	24.5	54.1
Turbidity	NTU	1.36	4.69	2.19	69.0	4.37	3.98	22.14	20.42	16.74	4.07	541.74
Depth to water	feet	15.85	21.29	12.67	20.35	3.85	18.36	18.35	5.20	6.80	4.72	6.54

Notes

1. The above readings, with the exception of depth to water, were collected using a YSI Pro Series multi-meter with a flow-through cell and represent readings collected immediately prior to well sampling, i.e. we before well purging began.

TABLE 1
SUMMARY OF GROUNDWATER SAMPLING PARAMETERS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

MW-105	MW-106S	MW-106D	MW-107R	MW-109	MW-110	MW-111	MW-112
01/08/2020	01/07/2020	01/07/2020	02/14/2020	01/07/2020	01/07/2020	01/07/2020	01/07/2020
Result	Result	Result	Result	Result	Result	Result	Result
5.9	6.0	7.1	6.3	6.3	6.6	6.3	6.2
6.0	9.1	9.4	6.7	10.8	10.7	11.1	10.5
243.9	562	757	152.3	1106	1996	1238	766
0.35	0.27	0.39	7.60	1.10	0.41	0.15	0.86
65.8	-27.3	-454.3	-	-13.2	-50.0	-27.7	-13.0
5.11	4.23	237.37	218.73	32.07	10.15	2.35	2.42
4.64	4.15	7.70	17.15	20.35	23.30	15.95	16.45

re collected when well purging was complete. Depth to water readings shown are initial readings, i.e. were collected

TABLE 2
SUMMARY OF LANDFILL GAS QUALITY FIELD MEASUREMENTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

Location	% Methane (CH4)	% LEL	% Oxygen (O2)	%Carbon Dioxide (CO2)	% Hydrogen Sulfide (H2S)	% Methane (CH4)	% LEL	% Oxygen (O2)	%Carbon Dioxide (CO2)	% Hydrogen Sulfide (H2S)	% Carbon Monoxide (CO)
	01/14/2020					02/14/2020					
SG-1	0.0	0.0	21.70	0.1	0	0.0	0.0	20.9	0.1	0	0
SG-2	--	--	--	--	--	--	--	--	--	--	--
SG-3	16.3	326	1.30	7.3	0	0.0	0.0	20.9	0.1	0	0
SG-4	2.6	52	15.90	5.3	0	4.6	92	8.2	11.4	0	0
SG-5	0.0	0.0	17.80	4.1	0	0.0	0.0	17.3	4.4	0	0
SG-6	--	--	--	--	--	--	--	--	--	--	--
SG-7	--	--	--	--	--	--	--	--	--	--	--
SG-8	--	--	--	--	--	--	--	--	--	--	--
SG-9	0.0	0.0	22.20	0.1	0	0.10	2.0	20.9	0.1	0	0
SG-10	--	--	--	--	--	--	--	--	--	--	--
SG-11	0.0	0.0	19.50	2.8	0		0.0	19.9	2.4	0	0
SG-12	0.0	0.0	13.10	7.1	0	0.0	0.0	16.4	4.9	0	0
SG-13	--	--	--	--	--	--	--	--	--	--	--

Notes

1. The readings were collected using a LANDTEC GEM5000.
2. Landfill gas measurements could not be taken from SG-2, SG-6, SG-7, SG-8 or SG-13 due to standing water present in the probe.
3. CO readings were not taken during the 1/14/2020 round because the rental meter did not have a CO probe.

TABLE 3
SUMMARY OF GROUNDWATER LEVELS AND ELEVATIONS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

MONITORING WELLS	DATE INSTALLED	SAMPLE ZONE LENGTH	PVC ELEVATION	January/February 2020			
				DTP (FEET)	ELEV. (FEET)	DTW (FEET)	ELEV. (FEET)
MW-1	11/17/2000	NR	32.278	--	--	15.85	16.43
MW-3	11/22/2000	NR	43.824	20.48	23.34	21.29	22.53
MW-5	11/13/2000	NR	30.949	--	--	12.67	18.28
MW-6	11/15/2000	NR	38.071	--	--	20.35	17.72
MW-7	11/9/2000	NR	19.77	--	--	3.85	15.92
MW-8	11/16/2000	NR	35.475	--	--	18.36	17.12
MW-EA-01	3/4/2008	10	44.438	17.65	26.788	18.35	26.09
MW-101	12/31/2019	10	--	--	--	5.20	--
MW-102	12/31/2019	10	23.151	--	--	6.80	16.35
MW-103	12/29/2019	10	20.08	--	--	4.72	15.36
MW-104	12/29/2019	10	22.792	--	--	6.54	16.25
MW-105	12/29/2019	10	22.429	--	--	4.64	17.79
MW-106S	12/29/2019	10	23.925	--	--	4.15	19.78
MW-106D	1/1/2020	5	24.436	--	--	7.70	16.74
MW-107R	2/14/2020	10	35.401	--	--	17.15	18.25
MW-109	12/2/2019	15	45.424	--	--	20.35	25.07
MW-110	1/1/2020	15	44.413	--	--	23.30	21.11
MW-111	1/1/2020	15	44.403	--	--	15.95	28.45
MW-112	12/4/2019	15	45.476	--	--	16.45	29.03

Notes:
NR indicates not recorded.
MW-101 destroyed before wellhead survey conducted.

TABLE 4
SUMMARY OF COVER SOIL SAMPLING RESULTS
Former Truk-Away Landfill
Warwick,, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM GB	19L0120-01		19L0038-01		19L0038-02		19L0120-02	19L0120-02
					TP-4		TP-7		TP-9		Trip Blank	Trip Blank
		Residential	Industrial/ Commercial	Leachibility Criteria	12/4/2019		12/02/2019		12/02/2019		12/02/2019	12/4/2019
					0-2 feet		0-2 feet		0-2 feet			
Volatile Organic Compounds												
All VOCs					ND		ND		ND		ND	ND
Semi-Volatile Organic Compounds												
All SVOCs					ND		ND		ND		ND	ND
Total Metals												
Antimony	mg/kg	10	820	NE	4.87	U	3.32	U	3.54	U	NT	NT
Arsenic	mg/kg	7	7	NE	**2.63**		**1.91**		**2.22**		NT	NT
Barium	mg/kg	5500	10000	NE	**15.7**		**10.9**		**6.38**		NT	NT
Beryllium	mg/kg	1.5	1.5	NE	**0.18**		**0.28**		**0.19**		NT	NT
Cadmium	mg/kg	39	1000	NE	0.49	U	0.33	U	0.35	U	NT	NT
Chromium	mg/kg	1400	10000	NE	**7.82**		**4.37**		**3.22**		NT	NT
Cobalt	mg/kg	NE	NE	NE	**1.42**		**2.25**		**2.11**		NT	NT
Copper	mg/kg	3100	10000	NE	**5.82**		**9.12**		**5.26**		NT	NT
Lead	mg/kg	150	500	NE	**18.4**		**5.29**		3.54	U	NT	NT
Nickel	mg/kg	1000	10000	NE	**3.06**		**5.03**		**3.79**		NT	NT
Selenium	mg/kg	390	10000	NE	4.87	U	3.32	U	3.54	U	NT	NT
Silver	mg/kg	200	10000	NE	0.49	U	0.33	U	0.35	U	NT	NT
Thallium	mg/kg	5.5	140	NE	4.87	U	3.32	U	3.54	U	NT	NT
Vanadium	mg/kg	550	10000	NE	**11.1**		**6.33**		**4.21**		NT	NT
Zinc	mg/kg	6000	10000	NE	**14.2**		**18.7**		**13.1**		NT	NT

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected above the laboratory reporting limit. Orange highlight indicates an exceedence of RIDEM's GB Leachability Criteria. Yellow highlight indicates an exceedance of RIDEM's I/C DEC Criteria. Green highlight indicates an exceedance of RIDEM's R-DEC Criteria.
3. "U" indicates that the parameter is not detected.
4. "NE" indicates that a standard for the parameter is not established.
5. ND indicates that the paramater is not detected.
6. NT indicates that the paramater was not tested for.

TABLE 5
SUMMARY OF GROUNDWATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island

PARAMETERS	UNITS	RIDEM GA GROUNDWATER QUALITY STANDARD	RIDEM GB GROUNDWATER QUALITY STANDARD	20A0196-01		20A0135-07		20A0172-01		20A0172-02		20A0196-02		20A0172-03		20A0135-08		20A0196-03		20A0172-04		20A0172-05		20A0172-06		20A0172-07		20A0135-05	
				MW-1		MW-3		MW-5		MW-6		MW-7		MW-8		MW-EA-01		MW-101		MW-102		MW-103		MW-104		MW-105		MW-106S	
				1/9/2020		01/07/2020		01/08/2020		01/08/2020		1/9/2020		01/08/2020		01/07/2020		1/9/2020		01/08/2020		01/08/2020		01/08/2020		01/08/2020		01/07/2020	
Volatile Organic Compounds																													
1,1,1-Trichloroethane	mg/L	0.2	3.1	0.001	U	**0.0015**		0.001	U	0.001	U	0.001	U	0.001	U	**0.0225**		0.001	U	0.001	U	0.001	U	**0.0014**		0.001	U	0.001	U
1,1-Dichloroethane	mg/L	NE	NE	0.001	U	**0.018**		0.001	U	0.001	U	0.001	U	0.001	U	0.289	D	**0.0104**		0.001	U	0.001	U	**0.0178**		0.001	U	0.001	U
1,1-Dichloroethene	mg/L	0.007	0.007	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.0013**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,2,4-Trimethylbenzene	mg/L	NE	NE	**0.0376**		**0.173**	D	**0.0354**		**0.0146**		0.001	U	**0.0376**		0.295	D	0.001	U	**0.0013**		0.001	U	0.001	U	0.001	U	**0.009**	
1,2-Dichlorobenzene	mg/L	0.6	NE	**0.0195**		**0.0013**		**0.0015**		**0.0012**		0.001	U	**0.0012**		**0.0011**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichloroethane	mg/L	0.005	0.11	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.003**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,3,5-Trimethylbenzene	mg/L	NE	NE	**0.0071**		**0.0434**		0.001	U	0.001	U	0.001	U	**0.0074**		**0.0861**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,4-Dichlorobenzene	mg/L	0.075	NE	**0.0185**		**0.0127**		**0.0172**		**0.0113**		0.001	U	**0.0063**		**0.011**		0.001	U	**0.0016**		0.001	U	0.001	U	0.001	U	**0.0073**	
1,4-Dioxane - Screen	mg/L	NE	NE	0.5	U	0.5	U	0.5	U	**2.67**	D	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Chlorotoluene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
4-Isopropyltoluene	mg/L	NE	NE	0.001	U	**0.0057**		0.001	U	0.001	U	0.001	U	0.001	U	**0.0087**		0.001	U	0.001		0.001	U	0.001	U	0.001	U	0.001	U
Acetone	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzene	mg/L	0.005	0.14	**0.0161**		**0.0192**		**0.0095**		**0.0095**		0.001	U	**0.0191**		**0.0213**		**0.0015**		**0.0147**		0.001	U	0.001	U	0.001	U	**0.0169**	
Chlorobenzene	mg/L	0.1	3.2	**0.322**		**0.0197**		**0.0361**		**0.0371**		0.001	U	**0.0191**		**0.015**		**0.0064**		**0.0134**		**0.0013**		0.001	U	0.001	U	**0.125**	D
Chloroethane	mg/L	NE	NE	**0.617**		**2.04**	D	**0.16**	D	**0.0162**		**0.0147**		**0.204**	D	**4.77**	D	**0.0187**		**0.174**	D	0.002	U	**0.004**		0.002	U	0.002	U
cis-1,2-Dichloroethene	mg/L	0.07	2.4	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.0022**		**0.0293**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Diethyl Ether	mg/L	NE	NE	**0.002**		**0.0034**		**0.0211**		**0.024**		**0.0075**		**0.0018**		**0.0027**		0.001	U	**0.0076**		0.001	U	0.001	U	0.001	U	**0.0014**	
Ethylbenzene	mg/L	0.7	1.6	0.001	U	**0.372**	D	0.001	U	0.001	U	0.001	U	**0.0106**		**1.62**	D	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Isopropylbenzene	mg/L	NE	NE	**0.0063**		**0.015**		**0.007**		**0.0041**		0.001	U	**0.0108**		**0.0265**		0.001	U	**0.0048**		0.001	U	0.001	U	0.001	U	**0.0158**	
Naphthalene	mg/L	0.1	NE	**0.0308**		**0.0438**		**0.0439**		**0.0313**		0.001	U	**0.0558**		**0.0764**		0.001	U	**0.0386**		**0.0022**		0.001	U	0.001	U	**0.0212**	
n-Butylbenzene	mg/L	NE	NE	0.001	U	**0.018**		0.001	U	0.001	U	0.001	U	0.001	U	**0.0252**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
n-Propylbenzene	mg/L	NE	NE	**0.0050**		**0.0213**		**0.0051**		**0.0045**		0.001	U	**0.0085**		**0.0404**		0.001	U	**0.0016**		0.001	U	0.001	U	0.001	U	**0.002**	
sec-Butylbenzene	mg/L	NE	NE	0.001	U	**0.0081**		0.001	U	0.001	U	0.001	U	0.001	U	**0.01**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
tert-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.0012**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Tetrahydrofuran	mg/L	NE	NE	0.005	U	**0.011**		**0.0054**		**0.411**	D	**0.0104**		**0.0061**		**0.0111**		0.005	U	**0.0129**		0.005	U	0.005	U	0.005	U	0.005	U
Toluene	mg/L	1	1.7	**0.0023**		**0.0445**		0.001	U	0.001	U	0.001	U	0.001	U	**0.351**	D	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
trans-1,2-Dichloroethene	mg/L	0.1	2.8	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.0021**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Vinyl Chloride	mg/L	0.002	0.002	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		**0.0206**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Xylene O	mg/L	10	NE	**0.0015**		**0.28**	D	0.001	U	**0.0012**		0.001	U	**0.0143**		**1.22**	D	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	**0.0013**	
Xylene P,M	mg/L	10	NE	**0.15**		**1.51**	D	0.002	U	**0.0026**		0.002	U	**0.578**	D	**5.18**	D	0.002	U	**0.0033**		0.002	U	0.002	U	0.002	U	**0.0056**	
Xylenes (Total)	mg/L	10	NE	**0.151**		**1.79**	D	0.002	U	**0.00378**		0.002	U	**0.592**	D	**6.4**	D	0.002	U	**0.00434**		0.002	U	0.002	U	0.002	U	**0.0069**	
Remaining VOCs	mg/L			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds																													
1,2-Dichlorobenzene	mg/L	0.6	NE	**0.012**		0.0093	U	0.009	U	0.009	U	0.009	U	0.009	U	0.0093	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.0093	U
1,4-Dichlorobenzene	mg/L	0.075	NE	**0.012**		0.0093	U	**0.012**		0.009	U	0.009	U	0.009	U	0.0093	U	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.0093	U
2-Methylnaphthalene	mg/L	NE	NE	**0.00236**		**0.0038**		**0.00171**		**0.00306**		0.00019	U	**0.00184**		**0.0036**		0.00019	U	**0.00262**		0.00019	U	0.00019	U	0.00019	U	**0.0013**	
Acenaphthene	mg/L	NE	NE	**0.0029**		**0.0007**		**0.00025**		**0.00025**		0.00019	U	**0.0006**		**0.0003**		0.00019	U	**0.00144**		0.00019	U	0.00019	U	0.00019	U	**0.0005**	
Acenaphthylene	mg/L	NE	NE	0.00019	U	0.0002	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.0002	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.0002	U
Anthracene	mg/L	NE	NE	0.00019	U	**0.0002**		0.00019	U	**0.00055**		0.00019	U	0.00019	U	**0.0009**		0.00019	U	**0.00026**		0.00019	U	0.00019	U	0.00019	U	0.0002	U
Benzo(a)anthracene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	**0.0007**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Benzo(a)pyrene	mg/L	0.0002	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Benzo(b)fluoranthene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	**0.00005**	
Benzo(g,h,i)perylene	mg/L	NE	NE	0.00019	U	0.0002	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.0002	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.0002	U
Benzo(k)fluoranthene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
bis(2-Ethylhexyl)phthalate	mg/L	0.006	NE	0.006	U	**0.0481**		0.006	U	**0.075**		0.006	U	0.006	U	**0.171**		0.006	U	**0.098**		0.006	U	0.006	U	0.006	U	0.0056	U
Chrysene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	**0.0004**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U

TABLE 5
SUMMARY OF GROUNDWATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island

PARAMETERS	UNITS	RIDEM GA GROUNDWATER QUALITY	RIDEM GB GROUNDWATER QUALITY	20A0196-01		20A0135-07		20A0172-01		20A0172-02		20A0196-02		20A0172-03		20A0135-08		20A0196-03		20A0172-04		20A0172-05		20A0172-06		20A0172-07		20A0135-05	
				MW-1		MW-3		MW-5		MW-6		MW-7		MW-8		MW-EA-01		MW-101		MW-102		MW-103		MW-104		MW-105		MW-106S	
Semi-Volatile Organic Compounds																													
Dibenzo(a,h)Anthracene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Di-n-octylphthalate	mg/L	NE	NE	0.009	U	0.0093	U	0.009	U	0.009	U	0.009	U	0.009	U	**0.0158**		0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	0.0093	U
Fluoranthene	mg/L	NE	NE	0.00019	U	**0.0003**		0.00019	U	0.00019	U	0.00019	U	0.00019	U	**0.0003**		0.00019	U	**0.00019**		0.00019	U	0.00019	U	0.00019	U	0.0002	U
Fluorene	mg/L	NE	NE	**0.00027**		**0.0007**		**0.00021**		**0.00031**		0.00019	U	**0.00043**		0.0002	U	0.00019	U	**0.00129**		0.00019	U	0.00019	U	0.00019	U	**0.0003**	
Indeno(1,2,3-cd)Pyrene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U
Naphthalene	mg/L	0.1	NE	**0.0145**		**0.024**		**0.0233**	D	**0.0147**	D	0.00019	U	**0.0218**	D	**0.0463**		0.00019	U	**0.0218**	D	**0.00146**		0.00019	U	0.00019	U	**0.0141**	
Phenanthrene	mg/L	NE	NE	**0.0004**		**0.0009**		**0.00023**		**0.00035**		0.00019	U	**0.00039**		0.0002	U	0.00019	U	**0.00145**		0.00019	U	0.00019	U	0.00019	U	**0.0003**	
Pyrene	mg/L	NE	NE	0.00019	U	**0.0005**		0.00019	U	**0.00033**		0.00019	U	0.00019	U	**0.0005**		0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.0002	U
Remaining SVOCs	mg/L			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Total Petroleum Hydrocarbons																													
Total Petroleum Hydrocarbons	mg/L	NE	NE	**2.03**		**5.34**		**1.85**		**16.4**		**0.40**		**2.12**		**20.3**		0.19	U	**1.52**		**0.53**		**0.5**		**0.66**		**1.11**	
Total Metals																													
Antimony	mg/L	0.006	NE	0.001	U	0.001	U	0.001	U	**0.001**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	**0.001**		**0.001**		0.001	U
Arsenic	mg/L	0.01	NE	0.002	U	0.002	U	0.002	U	0.002	U	**0.057**		0.002	U	0.002	U	**0.008**		0.002	U	0.002	U	**0.008**		0.002	U	0.002	U
Barium	mg/L	2	NE	**0.252**		**0.487**		**0.37**		**0.461**		**0.132**		**0.267**		**0.385**		**0.085**		**0.787**		**0.121**		**0.258**		**0.073**	-	**0.317**	
Beryllium	mg/L	0.004	NE	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	**0.0025**		0.0005	U	0.0005	U
Cadmium	mg/L	0.005	NE	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	0.0025	U	**0.0026**		0.0025	U	**0.0166**		0.0025	U
Chromium	mg/L	0.1	NE	0.01	U	0.01	U	0.01	U	**0.023**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.032**		0.01	U	0.01	U
Cobalt	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.013**		0.01	U	0.01	U
Copper	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.013**		0.01	U	0.01	U	**0.029**		**0.051**		**0.181**		0.01	U
Lead	mg/L	0.015	NE	0.01	U	0.01	U	0.01	U	**0.014**		0.01	U	0.01	U	0.01	U	0.01	U	**0.02**		0.01	U	**0.044**		0.01	U	0.01	U
Mercury	mg/L	0.002	NE	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
Nickel	mg/L	0.1	NE	0.025	U	0.025	U	0.025	U	**0.088**		0.025	U	**0.044**		**0.026**		0.025	U	0.025	U	**0.11**		**0.043**		**0.4**		**0.025**	
Selenium	mg/L	0.05	NE	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U
Silver	mg/L	NE	NE	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Thallium	mg/L	0.002	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Vanadium	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	**0.027**		0.01	U	0.01	U
Zinc	mg/L	NE	NE	0.025	U	**0.07**		**0.063**		**0.051**		0.025	U	0.025	U	**0.026**		0.025	U	**0.042**		**0.943**		**0.308**		**3.47**		0.025	U
Pesticides																													
4,4´-DDD	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U
alpha-Chlordane	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	**0.000097**		0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U
Chlordane (Total)	mg/L	0.002	NE	0.000467	U	**0.000649**		0.000467	U	**0.00071**		0.000467	U	0.000467	U	**0.00139**		0.000467	U	0.000467	U	0.000467	U	0.000467	U	0.000467	U	0.000467	U
gamma-Chlordane	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	**0.000054**	P, LC	0.000047	U	0.000047	U	**0.000107**		0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U
Methoxychlor	mg/L	NE	NE	**0.000068**		0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U
Remaining Pesticides	mg/L			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Polychlorinated Biphenyls																													
Aroclor 1016	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1221	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1232	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1242	ug/L	0.5	NE	**0.61**		**0.3**		0.09	U	**0.49**		0.09	U	0.09	U	**2.52**	D	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1248	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1254	ug/L	0.5	NE	0.09	U	**0.16**		0.09	U	**0.36**	P	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1260	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	**1.31**		0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1262	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U
Aroclor 1268	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected above the laboratory reporting limit.
Yellow highlight indicates an exceedance of RIDEM's GA Groundwater Quality Criteria. Orange highlight indicates an exceedance of RIDEM's GB Groundwater Quality Criteria.
3. "U" indicates that the parameter is not detected.
4. "P" indicates that the percent difference between primary and confirmation laboratory results exceeds 40%.
5. "LC" indicates that the lower value is used due to matrix interferences.
6. "NE" indicates that a standard for the parameter is not established.
7. "ND" indicates that the parameter is not detected.
8. "NT" indicates that the parameters was not tested.

TABLE 5
SUMMARY OF GROUNDWATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island

PARAMETERS	UNITS	RIDEM GA GROUNDWATER QUALITY STANDARD	RIDEM GB GROUNDWATER QUALITY STANDARD	20A0135-06		20B0446-01		20A0135-01		20A0135-02		20A0135-03		20A0135-04		20A0135-09		20A0172-08		20A0196-04	
				MW-106D		MW-107R		MW-109		MW-110		MW-111		MW-112		Trip Blank		Trip Blank		Trip Blank	
				01/07/2020		2/14/2020		01/07/2020		01/07/2020		01/07/2020		01/07/2020		01/07/2020		01/08/2020		1/9/2020	
Volatile Organic Compounds																					
1,1,1-Trichloroethane	mg/L	0.2	3.1	0.001	U	0.001	U	**0.0059**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloroethane	mg/L	NE	NE	0.001	U	0.001	U	**0.0166**		0.001	U	0.001	U	**0.0025**		0.001	U	0.001	U	0.001	U
1,1-Dichloroethene	mg/L	0.007	0.007	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,2,4-Trimethylbenzene	mg/L	NE	NE	**0.0096**		**0.0038**		**0.0396**		**0.029**		**0.0246**		**0.0184**		0.001	U	0.001	U	0.001	U
1,2-Dichlorobenzene	mg/L	0.6	NE	0.001	U	0.001	U	0.001	U	**0.0016**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichloroethane	mg/L	0.005	0.11	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
1,3,5-Trimethylbenzene	mg/L	NE	NE	0.001	U	**0.0013**		**0.0053**		**0.0031**		0.001	U	**0.0011**		0.001	U	0.001	U	0.001	U
1,4-Dichlorobenzene	mg/L	0.075	NE	**0.0011**		0.001	U	**0.0029**		**0.0082**		**0.0046**		**0.0036**		0.001	U	0.001	U	0.001	U
1,4-Dioxane - Screen	mg/L	NE	NE	0.5	U	0.5	U	0.5	U	**1.28**		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Chlorotoluene	mg/L	NE	NE	0.001	U	0.001	U	**0.0017**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
4-Isopropyltoluene	mg/L	NE	NE	0.001	U	0.001	U	**0.0013**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Acetone	mg/L	NE	NE	0.01	U	**0.0296**		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Benzene	mg/L	0.005	0.14	**0.0034**		0.001	U	**0.016**		**0.008**		**0.0148**		**0.0069**		0.001	U	0.001	U	0.001	U
Chlorobenzene	mg/L	0.1	3.2	**0.008**		**0.0015**		0.0114		**0.0155**		**0.0202**		**0.0079**		0.001	U	0.001	U	0.001	U
Chloroethane	mg/L	NE	NE	0.002	U	0.002	U	**0.577**	D	**0.0886**		**0.0598**		**0.0508**		0.002	U	0.002	U	0.002	U
cis-1,2-Dichloroethene	mg/L	0.07	2.4	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Diethyl Ether	mg/L	NE	NE	**0.0016**		0.001	U	**0.0014**		**0.004**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Ethylbenzene	mg/L	0.7	1.6	**0.004**		0.001	U	**0.0102**		**0.0035**		**0.0016**		0.001	U	0.001	U	0.001	U	0.001	U
Isopropylbenzene	mg/L	NE	NE	**0.0026**		0.001	U	**0.0112**		**0.0121**		**0.0048**		**0.0101**		0.001	U	0.001	U	0.001	U
Naphthalene	mg/L	0.1	NE	**0.0081**		0.001	U	**0.0463**		**0.0188**		**0.008**		**0.0374**		0.001	U	0.001	U	0.001	U
n-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	**0.0015**		0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
n-Propylbenzene	mg/L	NE	NE	**0.0014**		0.001	U	**0.0071**		**0.0034**		**0.0056**		**0.0036**		0.001	U	0.001	U	0.001	U
sec-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
tert-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Tetrahydrofuran	mg/L	NE	NE	**0.0501**		0.005	U	**0.0102**		**0.0409**		0.005	U	**0.0054**		0.005	U	0.005	U	0.005	U
Toluene	mg/L	1	1.7	**0.0046**		**0.0033**		**0.026**		0.001	U	**0.0011**		**0.0012**		0.001	U	0.001	U	0.001	U
trans-1,2-Dichloroethene	mg/L	0.1	2.8	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Vinyl Chloride	mg/L	0.002	0.002	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Xylene O	mg/L	10	NE	**0.0011**		**0.0028**		**0.0082**		**0.0025**		**0.0014**		**0.002**		0.001	U	0.001	U	0.001	U
Xylene P,M	mg/L	10	NE	**0.0259**		**0.0202**		**0.0291**		**0.0148**		**0.0093**		**0.0046**		0.002	U	0.002	U	0.002	U
Xylenes (Total)	mg/L	10	NE	**0.027**		**0.023**		**0.0373**		**0.0173**		**0.0108**		**0.0066**		0.002	U	0.002	U	0.002	U
Remaining VOCs	mg/L			ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatile Organic Compounds																					
1,2-Dichlorobenzene	mg/L	0.6	NE	0.0093	U	0.009	U	0.0093	U	0.0093	U	0.0093	U	0.0093	U	NT		NT		NT	
1,4-Dichlorobenzene	mg/L	0.075	NE	0.0093	U	0.009	U	0.0093	U	0.0093	U	0.0093	U	0.0093	U	NT		NT		NT	
2-Methylnaphthalene	mg/L	NE	NE	**0.0012**		**0.0004**		**0.0044**		**0.0018**		**0.0013**		**0.0053**		NT		NT		NT	
Acenaphthene	mg/L	NE	NE	0.0002	U	0.00019	U	**0.0006**		0.0002	U	**0.0003**		**0.0027**		NT		NT		NT	
Acenaphthylene	mg/L	NE	NE	0.0002	U	0.00019	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	NT		NT		NT	
Anthracene	mg/L	NE	NE	0.0002	U	0.00019	U	0.0002	U	**0.0006**		0.0002	U	**0.0003**		NT		NT		NT	
Benzo(a)anthracene	mg/L	NE	NE	**0.0002**		0.00005	U	0.00005	U	**0.00007**		0.00005	U	0.00005	U	NT		NT		NT	
Benzo(a)pyrene	mg/L	0.0002	NE	**0.0002**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT		NT		NT	
Benzo(b)fluoranthene	mg/L	NE	NE	**0.0002**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT		NT		NT	
Benzo(g,h,i)perylene	mg/L	NE	NE	0.0002	U	0.00019	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	NT		NT		NT	
Benzo(k)fluoranthene	mg/L	NE	NE	**0.00008**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT		NT		NT	
bis(2-Ethylhexyl)phthalate	mg/L	0.006	NE	**0.0081**		0.006	U	0.0056	U	**0.01**		**0.0082**		**0.021**		NT		NT		NT	
Chrysene	mg/L	NE	NE	**0.0002**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT		NT		NT	

TABLE 5
SUMMARY OF GROUNDWATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island

PARAMETERS	UNITS	RIDEM GA GROUNDWATER QUALITY	RIDEM GB GROUNDWATER QUALITY	20A0135-06		20B0446-01		20A0135-01		20A0135-02		20A0135-03		20A0135-04		20A0135-09	20A0172-08	20A0196-04
				MW-106D		MW-107R		MW-109		MW-110		MW-111		MW-112		Trip Blank	Trip Blank	Trip Blank
Semi-Volatile Organic Compounds																		
Dibenzo(a,h)Anthracene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT	NT	NT
Di-n-octylphthalate	mg/L	NE	NE	0.0093	U	0.009	U	0.0093	U	0.0093	U	0.0093	U	0.0093	U	NT	NT	NT
Fluoranthene	mg/L	NE	NE	**0.0003**		0.009	U	0.0002	U	0.0002	U	0.0002	U	**0.0003**		NT	NT	NT
Fluorene	mg/L	NE	NE	**0.0002**		0.00019	U	**0.0007**		**0.0004**		**0.0002**		**0.0026**		NT	NT	NT
Indeno(1,2,3-cd)Pyrene	mg/L	NE	NE	**0.0001**		0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT	NT	NT
Naphthalene	mg/L	0.1	NE	**0.0055**		**0.00034**		**0.0238**		**0.0109**		**0.0045**		**0.0175**		NT	NT	NT
Phenanthrene	mg/L	NE	NE	**0.0006**		0.00019	U	**0.0006**		**0.0002**		0.0002	U	**0.0024**		NT	NT	NT
Pyrene	mg/L	NE	NE	**0.0005**		0.00019	U	0.0002	U	0.0002	U	0.0002	U	**0.0002**		NT	NT	NT
Remaining SVOCs	mg/L			ND		ND		ND		ND		ND		ND		NT	NT	NT
Total Petroleum Hydrocarbons																		
Total Petroleum Hydrocarbons	mg/L	NE	NE	**5.31**		**1.18**		**2.38**		**4.82**		**2.11**		**1.65**		NT	NT	NT
Total Metals																		
Antimony	mg/L	0.006	NE	**0.003**		**0.003**		NT		NT		NT		NT		NT	NT	NT
Arsenic	mg/L	0.01	NE	**0.006**		**0.008**		NT		NT		NT		NT		NT	NT	NT
Barium	mg/L	2	NE	**0.19**		**0.126**		NT		NT		NT		NT		NT	NT	NT
Beryllium	mg/L	0.004	NE	**0.0005**		**0.0014**		NT		NT		NT		NT		NT	NT	NT
Cadmium	mg/L	0.005	NE	**0.0062**		0.0025	U	NT		NT		NT		NT		NT	NT	NT
Chromium	mg/L	0.1	NE	**0.073**		**0.042**		NT		NT		NT		NT		NT	NT	NT
Cobalt	mg/L	NE	NE	**0.011**		**0.012**		NT		NT		NT		NT		NT	NT	NT
Copper	mg/L	NE	NE	**0.114**		**0.033**		NT		NT		NT		NT		NT	NT	NT
Lead	mg/L	0.015	NE	**0.454**		**0.084**		NT		NT		NT		NT		NT	NT	NT
Mercury	mg/L	0.002	NE	**0.00138**		NT		NT		NT		NT		NT		NT	NT	NT
Nickel	mg/L	0.1	NE	**0.067**		0.025	U	NT		NT		NT		NT		NT	NT	NT
Selenium	mg/L	0.05	NE	0.025	U	0.025	U	NT		NT		NT		NT		NT	NT	NT
Silver	mg/L	NE	NE	0.005	U	0.005	U	NT		NT		NT		NT		NT	NT	NT
Thallium	mg/L	0.002	NE	0.001	U	0.001	U	NT		NT		NT		NT		NT	NT	NT
Vanadium	mg/L	NE	NE	**0.037**		**0.046**		NT		NT		NT		NT		NT	NT	NT
Zinc	mg/L	NE	NE	**0.66**		**0.353**		NT		NT		NT		NT		NT	NT	NT
Pesticides																		
4,4´-DDD	mg/L	NE	NE	**0.000078**		0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT	NT	NT
alpha-Chlordane	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT	NT	NT
Chlordane (Total)	mg/L	0.002	NE	**0.000706**	P, LC	0.000467	U	0.000467	U	0.000467	U	0.000467	U	0.000467	U	NT	NT	NT
gamma-Chlordane	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT	NT	NT
Methoxychlor	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT	NT	NT
Remaining Pesticides	mg/L			ND		ND		ND		ND		ND		ND		NT	NT	NT
Polychlorinated Biphenyls																		
Aroclor 1016	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1221	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1232	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1242	ug/L	0.5	NE	**0.7**		0.09	U	0.09	U	**0.18**		**0.15**		0.09	U	NT	NT	NT
Aroclor 1248	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1254	ug/L	0.5	NE	**0.45**		0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1260	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1262	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT
Aroclor 1268	ug/L	0.5	NE	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	0.09	U	NT	NT	NT

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected above the laboratory reporting limit.
Yellow highlight indicates an exceedance of RIDEM's GA Groundwater Quality Criteria. Orange highlight indicates an exceedance of RIDEM's GB Groundwater Quality Criteria.
3. "U" indicates that the parameter is not detected.
4. "P" indicates that the percent difference between primary and confirmation laboratory results exceeds 40%.
5. "LC" indicates that the lower value is used due to matrix interferences.
6. "NE" indicates that a standard for the parameter is not established.
7. "ND" indicates that the parameter is not detected.
8. "NT" indicates that the parameters was not tested.

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-01		19J0560-02		19J0646-01		19J0646-02		19J0646-03		19J0646-04		19J0646-05		19J0646-06		19J1047-05
						SSW-1				SSW-2				SSW-3				SSW-4				
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019				10/18/2019				10/18/2019				10/18/2019				
						0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in
Volatile Organic Compounds																						
1,1,1,2-Tetrachloroethane	mg/kg	2.2	220	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,1,1-Trichloroethane	mg/kg	540	10000	0.213	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,1,2,2-Tetrachloroethane	mg/kg	1.3	29	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,1,2-Trichloroethane	mg/kg	3.6	100	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,1-Dichloroethane	mg/kg	920	10000	0.000575	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,1-Dichloroethene	mg/kg	0.2	9.5	0.0194	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,1-Dichloropropene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2,3-Trichlorobenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2,3-Trichloropropane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2,4-Trichlorobenzene	mg/kg	96	10000	5.062	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2,4-Trimethylbenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2-Dibromo-3-Chloropropane	mg/kg	0.5	4.1	NE	NE	2.35	U	1.31	U	2.52	U	1.9	U	1.88	U	1.49	U	1.8	U	1.57	U	NT
1,2-Dibromoethane	mg/kg	0.01	0.07	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2-Dichlorobenzene	mg/kg	510	10000	0.294	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2-Dichloroethane	mg/kg	0.9	63	0.26	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,2-Dichloropropane	mg/kg	1.9	84	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,3,5-Trimethylbenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,3-Dichlorobenzene	mg/kg	430	10000	1.315	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,3-Dichloropropane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,4-Dichlorobenzene	mg/kg	27	240	0.318	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
1,4-Dioxane - Screen	mg/kg	NE	NE	NE	NE	94.1	U	52.3	U	101	U	76	U	75	U	59.7	U	71.9	U	63	U	NT
1-Chlorohexane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
2,2-Dichloropropane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
2-Butanone	mg/kg	10000	10000	NE	NE	2.35	U	1.31	U	2.52	U	1.9	U	1.88	U	1.49	U	1.8	U	1.57	U	NT
2-Chlorotoluene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
2-Hexanone	mg/kg	NE	NE	NE	NE	2.35	U	1.31	U	2.52	U	1.9	U	1.88	U	1.49	U	1.8	U	1.57	U	NT
4-Chlorotoluene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
4-Isopropyltoluene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
4-Methyl-2-Pentanone	mg/kg	1200	10000	NE	NE	2.35	U	1.31	U	2.52	U	1.9	U	1.88	U	1.49	U	1.8	U	1.57	U	NT
Acetone	mg/kg	7800	10000	NE	NE	2.35	U	1.31	U	2.52	U	1.9	U	1.88	U	1.49	U	1.8	U	1.57	U	NT
Benzene	mg/kg	2.5	200	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Bromobenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Bromochloromethane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Bromodichloromethane	mg/kg	10	92	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Bromoform	mg/kg	81	720	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Bromomethane	mg/kg	0.8	2900	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Carbon Disulfide	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Carbon Tetrachloride	mg/kg	1.5	44	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Chlorobenzene	mg/kg	210	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Chloroethane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Chloroform	mg/kg	1.2	940	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Chloromethane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
cis-1,2-Dichloroethene	mg/kg	630	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
cis-1,3-Dichloropropene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Dibromochloromethane	mg/kg	7.6	68	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Dibromomethane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Dichlorodifluoromethane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	R	NT
Diethyl Ether	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Di-isopropyl ether	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Ethyl tertiary-butyl ether	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-01		19J0560-02		19J0646-01		19J0646-02		19J0646-03		19J0646-04		19J0646-05		19J0646-06		19J1047-05
						SSW-1				SSW-2				SSW-3				SSW-4				
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019				10/18/2019				10/18/2019				10/18/2019				
						0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in
Volatile Organic Compounds (cont.)																						
Ethylbenzene	mg/kg	71	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Hexachlorobutadiene	mg/kg	8.2	73	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Isopropylbenzene	mg/kg	27	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Methyl tert-Butyl Ether	mg/kg	390	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Methylene Chloride	mg/kg	45	760	NE	NE	**0.0941**	J	**0.0576**	J	**0.176**	J	**0.122**	J	**0.128**	J	**0.182**	J	**0.187**	J	0.63	U	NT
Naphthalene	mg/kg	54	10000	0.176	0.561	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
n-Butylbenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
n-Propylbenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
sec-Butylbenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Styrene	mg/kg	13	190	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
tert-Butylbenzene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Tertiary-amyl methyl ether	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Tetrachloroethene	mg/kg	12	110	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Tetrahydrofuran	mg/kg	NE	NE	NE	NE	2.35	U	1.31	U	0.252	U	1.9	U	1.88	U	1.49	U	1.8	U	1.57	U	NT
Toluene	mg/kg	190	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
trans-1,2-Dichloroethene	mg/kg	1100	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
trans-1,3-Dichloropropene	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Trichloroethene	mg/kg	13	520	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Trichlorofluoromethane	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Vinyl Acetate	mg/kg	NE	NE	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Vinyl Chloride	mg/kg	0.02	3	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Xylene O	mg/kg	110	10000	NE	NE	0.471	U	0.262	U	0.504	U	0.38	U	0.375	U	0.299	U	0.359	U	0.315	U	NT
Xylene P,M	mg/kg	110	10000	NE	NE	0.941	U	0.523	U	1.01	U	0.76	U	0.75	U	0.597	U	0.719	U	0.63	U	NT
Xylenes (Total)	mg/kg	110	10000	NE	NE	0.941	U, D	0.523	U, D	1.01	U	0.76	U, D	0.75	U, D	0.597	U, D	0.719	U, D	0.63	U, D	NT
Semi-Volatile Organic Compounds																						
1,1-Biphenyl	mg/kg	0.8	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
1,2,4-Trichlorobenzene	mg/kg	96	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
1,2-Dichlorobenzene	mg/kg	510	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
1,3-Dichlorobenzene	mg/kg	430	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
1,4-Dichlorobenzene	mg/kg	27	240	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2,3,4,6-Tetrachlorophenol	mg/kg	NE	NE	NE	NE	2.66	U	2.06	U	2.47	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT
2,4,5-Trichlorophenol	mg/kg	330	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2,4,6-Trichlorophenol	mg/kg	58	520	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2,4-Dichlorophenol	mg/kg	30	6100	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2,4-Dimethylphenol	mg/kg	1400	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2,4-Dinitrophenol	mg/kg	160	4100	NE	NE	2.66	U	2.06	U	2.47	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT
2,4-Dinitrotoluene	mg/kg	0.9	8.4	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2,6-Dinitrotoluene	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2-Chloronaphthalene	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2-Chlorophenol	mg/kg	50	10000	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2-Methylnaphthalene	mg/kg	123	10000	NE	NE	0.027	U	0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	0.023	U	0.022	U	0.021 U
2-Methylphenol	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2-Nitroaniline	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
2-Nitrophenol	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
3,3´-Dichlorobenzidine	mg/kg	1.4	13	NE	NE	1.06	U	0.824	U	0.986	U	1.07	U	1.04	U	0.884	U	0.903	U	0.863	U	NT
3+4-Methylphenol	mg/kg	NE	NE	NE	NE	1.06	U	0.824	U	0.986	U	1.07	U	1.04	U	0.884	U	0.903	U	0.863	U	NT
3-Nitroaniline	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
4,6-Dinitro-2-Methylphenol	mg/kg	NE	NE	NE	NE	2.66	U	2.06	U	2.47	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT
4-Bromophenyl-phenylether	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT
4-Chloro-3-Methylphenol	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-01		19J0560-02		19J0646-01		19J0646-02		19J0646-03		19J0646-04		19J0646-05		19J0646-06		19J1047-05	
						SSW-1				SSW-2				SSW-3				SSW-4					
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019				10/18/2019				10/18/2019				10/18/2019					
						0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in	
Semi-Volatile Organic Compounds (cont.)																							
4-Chloro-phenyl-phenyl ether	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
4-Nitroaniline	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	0.492	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
4-Nitrophenol	mg/kg	NE	NE	NE	NE	2.66	U	2.06	U	2.47	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT	
Acenaphthene	mg/kg	43	10000	0.000671	NE	0.027	U	0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	0.023	U	0.022	U	0.021	U
Acenaphthylene	mg/kg	23	10000	0.00587	NE	0.027	U	0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	0.023	U	0.022	U	0.021	U
Acetophenone	mg/kg	NE	NE	NE	NE	1.06	U	0.824	U	0.986	U	1.07	U	1.04	U	0.884	U	0.903	U	0.863	U	NT	
Aniline	mg/kg	NE	NE	NE	NE	1.06	U	0.824	U	0.986	U	1.07	U	1.04	U	0.884	U	0.903	U	0.863	U	NT	
Anthracene	mg/kg	35	10000	0.0572	0.845	**0.035**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.026**		0.022	U	0.021	U
Azobenzene	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Benzo(a)anthracene	mg/kg	0.9	7.8	0.108	1.05	**0.097**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.118**		**0.028**		0.021	U
Benzo(a)pyrene	mg/kg	0.4	0.8	0.15	1.45	**0.11**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.123**		**0.026**		0.021	U
Benzo(b)fluoranthene	mg/kg	0.9	7.8	10.4	NE	**0.184**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.173**		**0.034**		0.021	U
Benzo(g,h,i)perylene	mg/kg	0.8	10000	0.17	NE	**0.085**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.082**		0.022	U	0.021	U
Benzo(k)fluoranthene	mg/kg	0.9	78	0.24	NE	**0.046**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.047**		0.022	U	0.021	U
Benzoic Acid	mg/kg	NE	NE	NE	NE	2.66	U	2.06	U	4.92	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT	
Benzyl Alcohol	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
bis(2-Chloroethoxy)methane	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
bis(2-Chloroethyl)ether	mg/kg	0.6	5.2	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
bis(2-chloroisopropyl)Ether	mg/kg	9.1	82	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
bis(2-Ethylhexyl)phthalate	mg/kg	46	410	0.182	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Butylbenzylphthalate	mg/kg	NE	NE	1.97	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Carbazole	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Chrysene	mg/kg	0.4	780	0.166	1.29	**0.154**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.135**		**0.031**		0.021	U
Dibenzo(a,h)Anthracene	mg/kg	0.4	0.8	0.033	NE	0.027	U	0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	0.023	U	0.022	U	0.021	U
Dibenzofuran	mg/kg	NE	NE	0.449	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Diethylphthalate	mg/kg	340	10000	0.295	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Dimethylphthalate	mg/kg	1900	10000	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Di-n-butylphthalate	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Di-n-octylphthalate	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Fluoranthene	mg/kg	20	10000	0.423	2.23	**0.299**		0.021	U	0.025	U	0.027	U	**0.041**		0.023	U	**0.238**		**0.058**		0.021	U
Fluorene	mg/kg	28	10000	0.0774	0.536	0.027	U	0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	0.023	U	0.022	U	0.021	U
Hexachlorobenzene	mg/kg	0.4	3.6	0.02	NE	0.266	U	0.206	U	2.47	U	0.267	U	0.261	U	0.221	U	0.226	U	0.216	U	NT	
Hexachlorobutadiene	mg/kg	8.2	73	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Hexachlorocyclopentadiene	mg/kg	NE	NE	0.0265	NE	2.66	U	2.06	U	2.47	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT	
Hexachloroethane	mg/kg	46	410	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Indeno(1,2,3-cd)Pyrene	mg/kg	0.9	7.8	0.2	NE	**0.088**		0.021	U	0.025	U	0.027	U	0.027	U	0.023	U	**0.086**		0.022	U	0.021	U
Isophorone	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Naphthalene	mg/kg	54	10000	NE	0.561	0.027	U	0.021	U	0.025	U	0.027	U	**0.047**		0.023	U	0.023	U	0.022	U	0.021	U
Nitrobenzene	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
N-Nitrosodimethylamine	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
N-Nitroso-Di-n-Propylamine	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
N-nitrosodiphenylamine	mg/kg	NE	NE	NE	NE	0.531	U	0.411	U	4.92	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Pentachlorophenol	mg/kg	5.3	48	NE	NE	2.66	U	2.06	U	4.92	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT	
Phenanthrene	mg/kg	40	10000	0.204	1.17	**0.158**		0.021	U	0.025	U	0.027	U	**0.027**		0.023	U	**0.103**		**0.03**		0.021	U
Phenol	mg/kg	6000	10000	0.0491	NE	0.531	U	0.411	U	2.47	U	0.532	U	0.52	U	0.441	U	0.451	U	0.431	U	NT	
Pyrene	mg/kg	13	10000	0.195	1.52	**0.251**		0.021	U	0.025	U	0.027	U	**0.036**		0.023	U	**0.222**		**0.054**		0.021	U
Pyridine	mg/kg	NE	NE	NE	NE	2.66	U	2.06	U	2.47	U	2.67	U	2.61	U	2.21	U	2.26	U	2.16	U	NT	
Total PAHs	mg/kg	NE	NE	1.61	22.8	1.507		0		0		0		0.151		0		1.353		0.261		0	
Total Petroleum Hydrocarbons																							
Total Petroleum Hydrocarbons	mg/kg	500	2500	NE	NE	**180**		45.9	U	**62.8**		58.3	U	57.1	U	47.1	U	**61.2**		44.8	U	NT	

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-01		19J0560-02		19J0646-01		19J0646-02		19J0646-03		19J0646-04		19J0646-05		19J0646-06		19J1047-05	
						SSW-1				SSW-2				SSW-3				SSW-4					
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019				10/18/2019				10/18/2019				10/18/2019					
						0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in	
Total Metals																							
Antimony	mg/kg	10	820	NE	NE	6.99	U	4.73	U	7.07	U	4.31	U	6.22	U	4.81	U	5.34	U	4.13	U	3.97	U
Arsenic	mg/kg	7	7	9.79	33	3.5	U	2.36	U	**6.25**		**4.93**		**3.98**		**3.77**		2.67	U	**3.22**		**6.21**	
Barium	mg/kg	5500	10000	NE	NE	**33.7**		**24.8**		**23.7**		**17.1**		**11.3**		**12.6**		**14**		**11.3**		**12.4**	
Beryllium	mg/kg	1.5	1.5	NE	NE	**0.46**		**0.26**		**0.32**		**0.66**		**0.28**		**0.22**		**0.22**		**0.23**		**0.21**	
Cadmium	mg/kg	39	1000	0.99	4.98	0.7	U	0.47	U	0.71	U	0.43	U	0.62	U	0.48	U	0.53	U	0.41	U	0.4	U
Chromium	mg/kg	1400	10000	43.4	111	**5.01**		**6.13**		**7.82**		**6.81**		**8.4**		**7.35**		**6.33**		**4.67**		**6.56**	
Cobalt	mg/kg	NE	NE	50	NE	**2.64**		**2.59**		**5.88**		**4.76**		**3.82**		**4.73**		**2.97**		**2.63**		**4.63**	
Copper	mg/kg	3100	10000	31.6	149	**7.43**		**4.77**		**15.2**		**14.9**		**9.48**		**10.6**		**11.7**		**10.3**		**10.2**	
Lead	mg/kg	150	500	35.8	128	**22.7**		**8.45**		**59**		**27.4**		**6.84**		**6.01**		**14.4**		**12.6**		**6.19**	
Mercury	mg/kg	23	610	0.18	1.06	**0.029**		**0.042**		**0.057**		**0.033**		0.028	U	0.022	U	0.033	U	**0.021**		0.018	U
Nickel	mg/kg	1000	10000	22.7	48.6	**5.84**		**4.11**		**10.2**		**10.7**		**8.65**		**10.4**		**5.44**		**5.76**		**8.96**	
Selenium	mg/kg	390	10000	NE	NE	6.99	U	4.73	U	7.07	U	4.31	U	6.22	U	4.81	U	5.34	U	4.13	U	3.97	U
Silver	mg/kg	200	10000	0.5	NE	0.7	U	0.47	U	0.71	U	**0.81**		0.62	U	0.48	U	0.53	U	0.41	U	0.79	U
Thallium	mg/kg	5.5	140	NE	NE	0.7	U	4.73	U	0.71	U	4.31	U	0.62	U	4.81	U	5.34	U	4.13	U	3.97	U
Vanadium	mg/kg	550	10000	NE	NE	**8.95**		**5.13**		**13.1**		**10.7**		**11.2**		**9.74**		**6.39**		**6.19**		**7.79**	
Zinc	mg/kg	6000	10000	121	459	**47.3**		**6.96**		**28.1**		**27.2**		**28**		**18.4**		**30.1**		**24.8**		**18.9**	
Pesticides																							
4,4´-DDD	mg/kg	NE	NE	0.00488	0.028	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
4,4´-DDE	mg/kg	NE	NE	0.00316	0.0313	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
4,4´-DDT	mg/kg	NE	NE	0.00416	0.0629	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Aldrin	mg/kg	NE	NE	0.002	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
alpha-BHC	mg/kg	NE	NE	0.006	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
alpha-Chlordane	mg/kg	NE	NE	0.00324	0.0176	0.0042	U	0.003	U	0.0039	U	0.0037	U	**0.384**	D	**0.0055**	P, LC	0.0034	U	**0.0078**		NT	
beta-BHC	mg/kg	NE	NE	0.005	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Chlordane (Total)	mg/kg	0.5	4.4	0.00324	0.0176	0.0506	U	0.0357	U	0.0472	U	0.0448	U	**0.664**	D	0.0386	U	0.0405	U	0.0386	U	NT	
delta-BHC	mg/kg	NE	NE	71.5	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Dieldrin	mg/kg	0.04	0.4	0.0019	0.0618	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Endosulfan I	mg/kg	NE	NE	0.00326	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Endosulfan II	mg/kg	NE	NE	0.00194	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Endosulfan Sulfate	mg/kg	NE	NE	0.0346	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Endrin	mg/kg	NE	NE	0.00222	0.207	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Endrin Aldehyde	mg/kg	NE	NE	0.48	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Endrin Ketone	mg/kg	NE	NE	NE	0.207	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
gamma-BHC (Lindane)	mg/kg	NE	NE	0.00237	0.0049	0.0025	U	0.0018	U	0.0024	U	0.0022	U	0.0024	U	0.0019	U	0.002	U	0.0019	U	NT	
gamma-Chlordane	mg/kg	NE	NE	0.00324	0.0176	0.0042	U	0.003	U	0.0039	U	0.0037	U	**0.0988**	D	**0.0037**		0.0034	U	**0.0047**		NT	
Heptachlor	mg/kg	NE	NE	0.0006	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Heptachlor Epoxide	mg/kg	NE	NE	0.00247	0.016	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Hexachlorobenzene	mg/kg	0.4	3.6	NE	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Methoxychlor	mg/kg	NE	NE	0.0136	NE	0.0042	U	0.003	U	0.0039	U	0.0037	U	0.004	U	0.0032	U	0.0034	U	0.0032	U	NT	
Toxaphene	mg/kg	NE	NE	NE	NE	0.211	U	0.149	U	0.197	U	0.187	U	0.201	U	0.161	U	0.169	U	0.161	U	NT	

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-01		19J0560-02		19J0646-01		19J0646-02		19J0646-03		19J0646-04		19J0646-05		19J0646-06		19J1047-05
						SSW-1				SSW-2				SSW-3				SSW-4				
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019				10/18/2019				10/18/2019				10/18/2019				
						0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in
PCBs																						
Aroclor 1016	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1221	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1232	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1242	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1248	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1254	mg/kg	10	10	0.0598	0.676	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1260	mg/kg	10	10	0.0598	0.676	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1262	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT
Aroclor 1268	mg/kg	10	10	NE	NE	0.09	U	0.06	U	0.08	U	0.07	U	0.08	U	0.07	U	0.06	U	0.07	U	NT

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0620-09		19J0620-10		19J1047-04		19J0620-07		19J0620-08		19J0620-05		19J0620-06		19J1047-03		19J0620-01		19J0620-02	
						SSW-5						SSW-6				SSW-7						SSW-8			
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/17/2019						10/17/2019				10/17/2019						10/17/2019			
						0-6 in		6-18 in		18- 36 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in		0-6 in		6-18 in	
Volatile Organic Compounds																									
1,1,1,2-Tetrachloroethane	mg/kg	2.2	220	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,1,1-Trichloroethane	mg/kg	540	10000	0.213	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,1,2,2-Tetrachloroethane	mg/kg	1.3	29	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,1,2-Trichloroethane	mg/kg	3.6	100	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,1-Dichloroethane	mg/kg	920	10000	0.000575	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,1-Dichloroethene	mg/kg	0.2	9.5	0.0194	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,1-Dichloropropene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2,3-Trichlorobenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2,3-Trichloropropane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2,4-Trichlorobenzene	mg/kg	96	10000	5.062	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2,4-Trimethylbenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.5	4.1	NE	NE	1.41	U	1.2	U	NT		1.73	U	2.42	U	1.84	U	1.32	U	1.27	U	2.52	U	1.34	U
1,2-Dibromoethane	mg/kg	0.01	0.07	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2-Dichlorobenzene	mg/kg	510	10000	0.294	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2-Dichloroethane	mg/kg	0.9	63	0.26	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,2-Dichloropropane	mg/kg	1.9	84	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,3,5-Trimethylbenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,3-Dichlorobenzene	mg/kg	430	10000	1.315	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,3-Dichloropropane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
1,4-Dichlorobenzene	mg/kg	27	240	0.318	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	**0.103**	J	**0.0527**	J	0.255	U	0.504	U	0.267	U
1,4-Dioxane - Screen	mg/kg	NE	NE	NE	NE	56.2	U	48.1	U	NT		69.3	U	96.7	U	73.7	U	52.7	U	51	U	101	U	53.4	U
1-Chlorohexane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
2,2-Dichloropropane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
2-Butanone	mg/kg	10000	10000	NE	NE	1.41	U	1.2	U	NT		1.73	U	2.42	U	1.84	U	1.32	U	1.27	U	2.52	U	1.34	U
2-Chlorotoluene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
2-Hexanone	mg/kg	NE	NE	NE	NE	1.41	U	1.2	U	NT		1.73	U	2.42	U	1.84	U	1.32	U	1.27	U	2.52	U	1.34	U
4-Chlorotoluene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
4-Isopropyltoluene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
4-Methyl-2-Pentanone	mg/kg	1200	10000	NE	NE	1.41	U	1.2	U	NT		1.73	U	2.42	U	1.84	U	1.32	U	1.27	U	2.52	U	1.34	U
Acetone	mg/kg	7800	10000	NE	NE	1.41	U	1.2	U	NT		1.73	U	2.42	U	1.84	U	1.32	U	1.27	U	2.52	U	1.34	U
Benzene	mg/kg	2.5	200	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Bromobenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Bromochloromethane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Bromodichloromethane	mg/kg	10	92	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Bromoform	mg/kg	81	720	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Bromomethane	mg/kg	0.8	2900	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Carbon Disulfide	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Carbon Tetrachloride	mg/kg	1.5	44	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Chlorobenzene	mg/kg	210	10000	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	**0.151**	J	**0.0791**	J	0.255	U	0.504	U	0.267	U
Chloroethane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Chloroform	mg/kg	1.2	940	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Chloromethane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
cis-1,2-Dichloroethene	mg/kg	630	10000	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
cis-1,3-Dichloropropene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Dibromochloromethane	mg/kg	7.6	68	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Dibromomethane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Dichlorodifluoromethane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Diethyl Ether	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Di-isopropyl ether	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Ethyl tertiary-butyl ether	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT		0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0620-09		19J0620-10		19J1047-04	19J0620-07		19J0620-08		19J0620-05		19J0620-06		19J1047-03		19J0620-01		19J0620-02	
						SSW-5					SSW-6				SSW-7						SSW-8			
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/17/2019					10/17/2019				10/17/2019						10/17/2019			
						0-6 in		6-18 in		18- 36 in	0-6 in		6-18 in		0-6 in		6-18 in		18-36 in		0-6 in		6-18 in	
Volatile Organic Compounds (cont.)																								
Ethylbenzene	mg/kg	71	10000	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Hexachlorobutadiene	mg/kg	8.2	73	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Isopropylbenzene	mg/kg	27	10000	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Methyl tert-Butyl Ether	mg/kg	390	10000	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Methylene Chloride	mg/kg	45	760	NE	NE	0.0955	**U**	**0.0769**	U	NT	0.0935	U	**0.198**	J	0.103	U	0.0738	U	**0.127**	J	**0.308**	J	0.134	U
Naphthalene	mg/kg	54	10000	0.176	0.561	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
n-Butylbenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
n-Propylbenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
sec-Butylbenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Styrene	mg/kg	13	190	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
tert-Butylbenzene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Tertiary-amyl methyl ether	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Tetrachloroethene	mg/kg	12	110	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Tetrahydrofuran	mg/kg	NE	NE	NE	NE	1.41	U	1.2	U	NT	1.73	U	2.42	U	1.84	U	1.32	U	1.27	U	2.52	U	1.34	U
Toluene	mg/kg	190	10000	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
trans-1,2-Dichloroethene	mg/kg	1100	10000	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
trans-1,3-Dichloropropene	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Trichloroethene	mg/kg	13	520	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Trichlorofluoromethane	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Vinyl Acetate	mg/kg	NE	NE	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Vinyl Chloride	mg/kg	0.02	3	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Xylene O	mg/kg	110	10000	NE	NE	0.281	U	0.24	U	NT	0.346	U	0.484	U	0.368	U	0.264	U	0.255	U	0.504	U	0.267	U
Xylene P,M	mg/kg	110	10000	NE	NE	0.562	U	0.481	U	NT	0.693	U	0.967	U	0.737	U	0.527	U	0.51	U	1.01	U	0.534	U
Xylenes (Total)	mg/kg	110	10000	NE	NE	0.562	U, D	0.481	U, D	NT	0.693	U, D	0.967	U, D	0.737	U, D	0.527	U, D	0.51	U, D	1.01	U, D	0.534	U, D
Semi-Volatile Organic Compounds																								
1,1-Biphenyl	mg/kg	0.8	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
1,2,4-Trichlorobenzene	mg/kg	96	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
1,2-Dichlorobenzene	mg/kg	510	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
1,3-Dichlorobenzene	mg/kg	430	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
1,4-Dichlorobenzene	mg/kg	27	240	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2,3,4,6-Tetrachlorophenol	mg/kg	NE	NE	NE	NE	2.11	U	1.87	U	NT	2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
2,4,5-Trichlorophenol	mg/kg	330	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2,4,6-Trichlorophenol	mg/kg	58	520	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2,4-Dichlorophenol	mg/kg	30	6100	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2,4-Dimethylphenol	mg/kg	1400	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2,4-Dinitrophenol	mg/kg	160	4100	NE	NE	2.11	U	1.87	U	NT	2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
2,4-Dinitrotoluene	mg/kg	0.9	8.4	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2,6-Dinitrotoluene	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2-Chloronaphthalene	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2-Chlorophenol	mg/kg	50	10000	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2-Methylnaphthalene	mg/kg	123	10000	NE	NE	0.021	U	0.019	U	NT	0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
2-Methylphenol	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2-Nitroaniline	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
2-Nitrophenol	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
3,3´-Dichlorobenzidine	mg/kg	1.4	13	NE	NE	0.842	U	0.746	U	NT	0.805	U	0.929	U	0.974	U	0.864	U	NT		1.19	U	0.837	U
3+4-Methylphenol	mg/kg	NE	NE	NE	NE	0.842	U	0.746	U	NT	0.805	U	0.929	U	0.974	U	0.864	U	NT		1.19	U	0.837	U
3-Nitroaniline	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
4,6-Dinitro-2-Methylphenol	mg/kg	NE	NE	NE	NE	2.11	U	1.87	U	NT	2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
4-Bromophenyl-phenylether	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
4-Chloro-3-Methylphenol	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT	0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
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February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0620-09		19J0620-10		19J1047-04		19J0620-07		19J0620-08		19J0620-05		19J0620-06		19J1047-03		19J0620-01		19J0620-02	
						SSW-5						SSW-6				SSW-7						SSW-8			
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/17/2019						10/17/2019				10/17/2019						10/17/2019			
						0-6 in		6-18 in		18- 36 in		0-6 in		6-18 in						18-36 in		0-6 in		6-18 in	
Semi-Volatile Organic Compounds (cont.)																									
4-Chloro-phenyl-phenyl ether	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
4-Nitroaniline	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
4-Nitrophenol	mg/kg	NE	NE	NE	NE	2.11	U	1.87	U	NT		2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
Acenaphthene	mg/kg	43	10000	0.000671	NE	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Acenaphthylene	mg/kg	23	10000	0.00587	NE	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Acetophenone	mg/kg	NE	NE	NE	NE	0.842	U	0.746	U	NT		0.805	U	0.929	U	0.974	U	0.864	U	NT		1.19	U	0.837	U
Aniline	mg/kg	NE	NE	NE	NE	0.842	U	0.746	U	NT		0.805	U	0.929	U	0.974	U	0.864	U	NT		1.19	U	0.837	U
Anthracene	mg/kg	35	10000	0.0572	0.845	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Azobenzene	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Benzo(a)anthracene	mg/kg	0.9	7.8	0.108	1.05	0.021	U	**0.02**		NT		**0.032**		**0.033**		0.025	U	0.022	U	NT		0.03	U	0.021	U
Benzo(a)pyrene	mg/kg	0.4	0.8	0.15	1.45	0.021	U	0.019	U	NT		**0.027**		**0.03**		0.025	U	0.022	U	NT		**0.035**		0.021	U
Benzo(b)fluoranthene	mg/kg	0.9	7.8	10.4	NE	0.021	U	**0.025**		NT		**0.035**		**0.036**		0.025	U	0.022	U	NT		**0.054**		0.021	U
Benzo(g,h,i)perylene	mg/kg	0.8	10000	0.17	NE	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Benzo(k)fluoranthene	mg/kg	0.9	78	0.24	NE	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Benzoic Acid	mg/kg	NE	NE	NE	NE	2.11	U	1.87	U	NT		2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
Benzyl Alcohol	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
bis(2-Chloroethoxy)methane	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
bis(2-Chloroethyl)ether	mg/kg	0.6	5.2	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
bis(2-chloroisopropyl)Ether	mg/kg	9.1	82	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
bis(2-Ethylhexyl)phthalate	mg/kg	46	410	0.182	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Butylbenzylphthalate	mg/kg	NE	NE	1.97	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	**19.5**	D	0.432	U	NT		0.596	U	0.418	U
Carbazole	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Chrysene	mg/kg	0.4	780	0.166	1.29	0.021	U	0.019	U	NT		**0.03**		**0.03**		0.025	U	0.022	U	NT		**0.042**		0.021	U
Dibenzo(a,h)Anthracene	mg/kg	0.4	0.8	0.033	NE	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Dibenzofuran	mg/kg	NE	NE	0.449	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Diethylphthalate	mg/kg	340	10000	0.295	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Dimethylphthalate	mg/kg	1900	10000	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Di-n-butylphthalate	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Di-n-octylphthalate	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Fluoranthene	mg/kg	20	10000	0.423	2.23	0.021	U	**0.039**		NT		**0.058**		**0.048**		0.025	U	0.022	U	NT		**0.071**		0.021	U
Fluorene	mg/kg	28	10000	0.0774	0.536	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Hexachlorobenzene	mg/kg	0.4	3.6	0.02	NE	0.211	U	0.187	U	NT		0.201	U	0.233	U	0.244	U	0.216	U	NT		0.299	U	0.209	U
Hexachlorobutadiene	mg/kg	8.2	73	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Hexachlorocyclopentadiene	mg/kg	NE	NE	0.0265	NE	2.11	U	1.87	U	NT		2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
Hexachloroethane	mg/kg	46	410	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Indeno(1,2,3-cd)Pyrene	mg/kg	0.9	7.8	0.2	NE	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Isophorone	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Naphthalene	mg/kg	54	10000	NE	0.561	0.021	U	0.019	U	NT		0.021	U	0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Nitrobenzene	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
N-Nitrosodimethylamine	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
N-Nitroso-Di-n-Propylamine	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
N-nitrosodiphenylamine	mg/kg	NE	NE	NE	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Pentachlorophenol	mg/kg	5.3	48	NE	NE	2.11	U	1.87	U	NT		2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
Phenanthrene	mg/kg	40	10000	0.204	1.17	0.021	U	**0.023**		NT		**0.03**		0.024	U	0.025	U	0.022	U	NT		0.03	U	0.021	U
Phenol	mg/kg	6000	10000	0.0491	NE	0.421	U	0.373	U	NT		0.402	U	0.464	U	0.486	U	0.432	U	NT		0.596	U	0.418	U
Pyrene	mg/kg	13	10000	0.195	1.52	0.021	U	**0.035**		NT		**0.052**		**0.05**		0.025	U	0.022	U	NT		**0.064**		0.021	U
Pyridine	mg/kg	NE	NE	NE	NE	2.11	U	1.87	U	NT		2.01	U	2.33	U	2.44	U	2.16	U	NT		2.99	U	2.09	U
Total PAHs	mg/kg	NE	NE	1.61	22.8	0		0.142		NT		0.264		0.227		0		0		NT		0.266		0	
Total Petroleum Hydrocarbons																									
Total Petroleum Hydrocarbons	mg/kg	500	2500	NE	NE	47.4	U	43.7	U	NT		47.9	U	56.2	U	51.5	U	46.6	U	NT		66.6	U	46.8	U

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0620-09		19J0620-10		19J1047-04		19J0620-07		19J0620-08		19J0620-05		19J0620-06		19J1047-03	19J0620-01		19J0620-02	
						SSW-5						SSW-6				SSW-7					SSW-8			
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/17/2019						10/17/2019				10/17/2019					10/17/2019			
						0-6 in		6-18 in		18- 36 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in	0-6 in		6-18 in	
Total Metals																								
Antimony	mg/kg	10	820	NE	NE	3.5	U	4.89	U	4.37	U	3.71	U	4.47	U	4.76	U	4.06	U	NT	7.2	U	5.86	U
Arsenic	mg/kg	7	7	9.79	33	**4.11**		**9.3**		**3.7**		**9.07**		2.23	U	**5.75**		**4.31**		NT	**8.98**		**3.94**	
Barium	mg/kg	5500	10000	NE	NE	**60.9**		**79.2**		**7.88**		**46.2**		**28.7**		**16.9**		**11.4**		NT	**23.6**		**22.4**	
Beryllium	mg/kg	1.5	1.5	NE	NE	**0.25**		**0.68**		**0.15**		**0.12**		**0.19**		**0.28**		**0.2**		NT	**0.3**		**0.27**	
Cadmium	mg/kg	39	1000	0.99	4.98	0.35	U	0.49	U	0.44	U	**0.45**		0.45	U	0.48	U	0.41	U	NT	0.72	U	0.59	U
Chromium	mg/kg	1400	10000	43.4	111	**7.4**		**18.6**		**4.99**		**4.67**		**7.98**		**7.01**		**6.73**		NT	**8.77**		**9.8**	
Cobalt	mg/kg	NE	NE	50	NE	**9.52**		**14.6**		**3.38**		**3.68**		**3.78**		**4.67**		**4.38**		NT	**7.48**		**5.47**	
Copper	mg/kg	3100	10000	31.6	149	**15.1**		**28.3**		**6.21**		**22.7**		**12.2**		**11.4**		**8.42**		NT	**25.5**		**17**	
Lead	mg/kg	150	500	35.8	128	**9.21**		**16.4**		4.37	U	**16.3**		**9.91**		**8.9**		**5.03**		NT	**17.7**		**7.47**	
Mercury	mg/kg	23	610	0.18	1.06	**0.061**		0.019	U	0.019	U	**0.035**		0.025	U	0.036	U	0.026	U	NT	0.036	U	0.018	U
Nickel	mg/kg	1000	10000	22.7	48.6	**19.4**		**31.2**		**6.9**		**29.9**		**14**		**10.6**		**10**		NT	**18.5**		**16.8**	
Selenium	mg/kg	390	10000	NE	NE	3.5	U	4.89	U	4.37	U	3.71	U	4.47	U	4.76	U	4.06	U	NT	7.2	U	5.86	U
Silver	mg/kg	200	10000	0.5	NE	0.35	U	0.49	U	0.44	U	0.37	U	0.45	U	0.48	U	0.41	U	NT	0.72	U	0.59	U
Thallium	mg/kg	5.5	140	NE	NE	0.35	U	0.49	U	4.37	U	0.37	U	4.47	U	4.76	U	4.06	U	NT	0.72	U	0.59	U
Vanadium	mg/kg	550	10000	NE	NE	**8.99**		**20.8**		**6.13**		**9.22**		**10.1**		**8.86**		**8.52**		NT	**12.7**		**11.4**	
Zinc	mg/kg	6000	10000	121	459	**114**		**152**		**14**		**131**		**67.1**		**23.1**		**19.1**		NT	**115**		**90.2**	
Pesticides																								
4,4´-DDD	mg/kg	NE	NE	0.00488	0.028	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
4,4´-DDE	mg/kg	NE	NE	0.00316	0.0313	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
4,4´-DDT	mg/kg	NE	NE	0.00416	0.0629	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Aldrin	mg/kg	NE	NE	0.002	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
alpha-BHC	mg/kg	NE	NE	0.006	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
alpha-Chlordane	mg/kg	NE	NE	0.00324	0.0176	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
beta-BHC	mg/kg	NE	NE	0.005	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Chlordane (Total)	mg/kg	0.5	4.4	0.00324	0.0176	0.0391	U	0.0344	U	NT		0.0367	U	0.0443	U	0.0394	U	0.0388	U	NT	0.0536	U	0.0364	U
delta-BHC	mg/kg	NE	NE	71.5	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Dieldrin	mg/kg	0.04	0.4	0.0019	0.0618	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Endosulfan I	mg/kg	NE	NE	0.00326	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Endosulfan II	mg/kg	NE	NE	0.00194	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Endosulfan Sulfate	mg/kg	NE	NE	0.0346	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Endrin	mg/kg	NE	NE	0.00222	0.207	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Endrin Aldehyde	mg/kg	NE	NE	0.48	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Endrin Ketone	mg/kg	NE	NE	NE	0.207	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
gamma-BHC (Lindane)	mg/kg	NE	NE	0.00237	0.0049	0.002	U	0.0017	U	NT		0.0018	U	0.0022	U	0.002	U	0.0019	U	NT	0.0027	U	0.0018	U
gamma-Chlordane	mg/kg	NE	NE	0.00324	0.0176	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Heptachlor	mg/kg	NE	NE	0.0006	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Heptachlor Epoxide	mg/kg	NE	NE	0.00247	0.016	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Hexachlorobenzene	mg/kg	0.4	3.6	NE	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Methoxychlor	mg/kg	NE	NE	0.0136	NE	0.0033	U	0.0029	U	NT		0.0031	U	0.0037	U	0.0033	U	0.0032	U	NT	0.0045	U	0.003	U
Toxaphene	mg/kg	NE	NE	NE	NE	0.163	U	0.143	U	NT		0.153	U	0.184	U	0.164	U	0.162	U	NT	0.223	U	0.151	U

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Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0620-09		19J0620-10		19J1047-04	19J0620-07		19J0620-08		19J0620-05		19J0620-06		19J1047-03	19J0620-01		19J0620-02	
						SSW-5					SSW-6				SSW-7					SSW-8			
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/17/2019					10/17/2019				10/17/2019					10/17/2019			
						0-6 in		6-18 in		18- 36 in	0-6 in		6-18 in		0-6 in		6-18 in		18-36 in	0-6 in		6-18 in	
PCBs																							
Aroclor 1016	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1221	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1232	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1242	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1248	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1254	mg/kg	10	10	0.0598	0.676	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1260	mg/kg	10	10	0.0598	0.676	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1262	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U
Aroclor 1268	mg/kg	10	10	NE	NE	0.06	U	0.06	U	NT	0.07	U	0.07	U	0.07	U	0.06	U	NT	0.09	U	0.06	U

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SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-05		19J0560-06		19J1047-01	19J0560-03		19J0560-04		19J0620-03		19J0620-04		19J1047-02	19J0560-07		19J0620-11		19J0646-07	
						SSW-9					SSW-10				SSW-11					Trip Blank		Trip Blank		Trip Blank	
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019					10/16/2019				10/17/2019					10/16/2019		10/17/2019		10/18/2019	
						0-6 in		6-18 in		18-36 in	0-6 in		6-18 in		0-6 in		6-18 in		18-36 in						
Volatile Organic Compounds																									
1,1,1,2-Tetrachloroethane	mg/kg	2.2	220	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,1,1-Trichloroethane	mg/kg	540	10000	0.213	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,1,2,2-Tetrachloroethane	mg/kg	1.3	29	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,1,2-Trichloroethane	mg/kg	3.6	100	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,1-Dichloroethane	mg/kg	920	10000	0.000575	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,1-Dichloroethene	mg/kg	0.2	9.5	0.0194	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,1-Dichloropropene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2,3-Trichlorobenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2,3-Trichloropropane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2,4-Trichlorobenzene	mg/kg	96	10000	5.062	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2,4-Trimethylbenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2-Dibromo-3-Chloropropane	mg/kg	0.5	4.1	NE	NE	1.7	U	1.71	U	NT	1.1	U	1.02	U	1.07	U	2.17	U	NT	1	U	1	U	1	U
1,2-Dibromoethane	mg/kg	0.01	0.07	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2-Dichlorobenzene	mg/kg	510	10000	0.294	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2-Dichloroethane	mg/kg	0.9	63	0.26	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,2-Dichloropropane	mg/kg	1.9	84	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,3,5-Trimethylbenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,3-Dichlorobenzene	mg/kg	430	10000	1.315	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,3-Dichloropropane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,4-Dichlorobenzene	mg/kg	27	240	0.318	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
1,4-Dioxane - Screen	mg/kg	NE	NE	NE	NE	67.9	U	68.3	U	NT	43.9	U	40.9	U	42.7	U	86.7	U	NT	40	U	40	U	40	U
1-Chlorohexane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
2,2-Dichloropropane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
2-Butanone	mg/kg	10000	10000	NE	NE	1.7	U	1.71	U	NT	1.1	U	1.02	U	1.07	U	2.17	U	NT	1	U	1	U	1	U
2-Chlorotoluene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
2-Hexanone	mg/kg	NE	NE	NE	NE	1.7	U	1.71	U	NT	1.1	U	1.02	U	1.07	U	2.17	U	NT	1	U	1	U	1	U
4-Chlorotoluene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
4-Isopropyltoluene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
4-Methyl-2-Pentanone	mg/kg	1200	10000	NE	NE	1.7	U	1.71	U	NT	1.1	U	1.02	U	1.07	U	2.17	U	NT	1	U	1	U	1	U
Acetone	mg/kg	7800	10000	NE	NE	1.7	U	1.71	U	NT	1.1	U	1.02	U	1.07	U	2.17	U	NT	1	U	1	U	1	U
Benzene	mg/kg	2.5	200	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Bromobenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Bromochloromethane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Bromodichloromethane	mg/kg	10	92	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Bromoform	mg/kg	81	720	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Bromomethane	mg/kg	0.8	2900	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Carbon Disulfide	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Carbon Tetrachloride	mg/kg	1.5	44	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Chlorobenzene	mg/kg	210	10000	NE	NE	0.339	U	**0.0478**	J	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Chloroethane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Chloroform	mg/kg	1.2	940	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Chloromethane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
cis-1,2-Dichloroethene	mg/kg	630	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
cis-1,3-Dichloropropene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Dibromochloromethane	mg/kg	7.6	68	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Dibromomethane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Dichlorodifluoromethane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Diethyl Ether	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Di-isopropyl ether	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Ethyl tertiary-butyl ether	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-05		19J0560-06		19J1047-01	19J0560-03		19J0560-04		19J0620-03		19J0620-04		19J1047-02	19J0560-07		19J0620-11		19J0646-07	
						SSW-9					SSW-10				SSW-11					Trip Blank		Trip Blank		Trip Blank	
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019					10/16/2019				10/17/2019					10/16/2019		10/17/2019		10/18/2019	
						0-6 in		6-18 in		18-36 in	0-6 in		6-18 in		0-6 in		6-18 in		18-36 in						
Volatile Organic Compounds (cont.)																									
Ethylbenzene	mg/kg	71	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Hexachlorobutadiene	mg/kg	8.2	73	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Isopropylbenzene	mg/kg	27	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Methyl tert-Butyl Ether	mg/kg	390	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Methylene Chloride	mg/kg	45	760	NE	NE	**0.0984**	J	**0.0956**	J	NT	0.439	U	**0.049**	J	0.0662	U	**0.139**	J	NT	0.4	U	**0.068**	J	**0.068**	J
Naphthalene	mg/kg	54	10000	0.176	0.561	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
n-Butylbenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
n-Propylbenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
sec-Butylbenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Styrene	mg/kg	13	190	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
tert-Butylbenzene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Tertiary-amyl methyl ether	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Tetrachloroethene	mg/kg	12	110	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Tetrahydrofuran	mg/kg	NE	NE	NE	NE	1.7	U	1.71	U	NT	1.1	U	1.02	U	1.07	U	2.17	U	NT	1	U	1	U	1	U
Toluene	mg/kg	190	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
trans-1,2-Dichloroethene	mg/kg	1100	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
trans-1,3-Dichloropropene	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Trichloroethene	mg/kg	13	520	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Trichlorofluoromethane	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Vinyl Acetate	mg/kg	NE	NE	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Vinyl Chloride	mg/kg	0.02	3	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Xylene O	mg/kg	110	10000	NE	NE	0.339	U	0.342	U	NT	0.219	U	0.204	U	0.213	U	0.433	U	NT	0.2	U	0.2	U	0.2	U
Xylene P,M	mg/kg	110	10000	NE	NE	0.679	U	0.683	U	NT	0.439	U	0.409	U	0.427	U	0.867	U	NT	0.4	U	0.4	U	0.4	U
Xylenes (Total)	mg/kg	110	10000	NE	NE	0.679	U, D	0.683	U, D	NT	0.439	U, D	0.409	U, D	0.427	U, D	0.867	U, D	NT	0.4	U, D	0.4	U, D	0.4	U, D
Semi-Volatile Organic Compounds																									
1,1-Biphenyl	mg/kg	0.8	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
1,2,4-Trichlorobenzene	mg/kg	96	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
1,2-Dichlorobenzene	mg/kg	510	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
1,3-Dichlorobenzene	mg/kg	430	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
1,4-Dichlorobenzene	mg/kg	27	240	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2,3,4,6-Tetrachlorophenol	mg/kg	NE	NE	NE	NE	2.15	U	2.36	U	NT	1.86	U	1.83	U	2	U	2.3	U	NT	NT		NT		NT	
2,4,5-Trichlorophenol	mg/kg	330	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2,4,6-Trichlorophenol	mg/kg	58	520	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2,4-Dichlorophenol	mg/kg	30	6100	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2,4-Dimethylphenol	mg/kg	1400	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2,4-Dinitrophenol	mg/kg	160	4100	NE	NE	2.15	U	2.36	U	NT	1.86	U	1.83	U	2	U	2.3	U	NT	NT		NT		NT	
2,4-Dinitrotoluene	mg/kg	0.9	8.4	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2,6-Dinitrotoluene	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2-Chloronaphthalene	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2-Chlorophenol	mg/kg	50	10000	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2-Methylnaphthalene	mg/kg	123	10000	NE	NE	0.022	U	0.024	U	0.024 U	0.019	U	0.019	U	0.02	U	0.023	U	0.021 U	NT		NT		NT	
2-Methylphenol	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2-Nitroaniline	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
2-Nitrophenol	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
3,3´-Dichlorobenzidine	mg/kg	1.4	13	NE	NE	0.86	U	0.944	U	NT	0.743	U	0.733	U	0.799	U	0.917	U	NT	NT		NT		NT	
3+4-Methylphenol	mg/kg	NE	NE	NE	NE	0.86	U	0.944	U	NT	0.743	U	0.733	U	0.799	U	0.917	U	NT	NT		NT		NT	
3-Nitroaniline	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
4,6-Dinitro-2-Methylphenol	mg/kg	NE	NE	NE	NE	2.15	U	2.36	U	NT	1.86	U	1.83	U	2	U	2.3	U	NT	NT		NT		NT	
4-Bromophenyl-phenylether	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	
4-Chloro-3-Methylphenol	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT	0.371	U	0.366	U	0.399	U	0.458	U	NT	NT		NT		NT	

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-05		19J0560-06		19J1047-01		19J0560-03		19J0560-04		19J0620-03		19J0620-04		19J1047-02		19J0560-07	19J0620-11	19J0646-07
						SSW-9						SSW-10				SSW-11						Trip Blank	Trip Blank	Trip Blank
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019						10/16/2019				10/17/2019						10/16/2019	10/17/2019	10/18/2019
						0-6 in		6-18 in		18-36 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in				
Semi-Volatile Organic Compounds (cont.)																								
4-Chloro-phenyl-phenyl ether	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
4-Nitroaniline	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
4-Nitrophenol	mg/kg	NE	NE	NE	NE	2.15	U	2.36	U	NT		1.86	U	1.83	U	2	U	2.3	U	NT		NT	NT	NT
Acenaphthene	mg/kg	43	10000	0.000671	NE	0.022	U	0.024	U	0.024	U	0.019	U	0.019	U	0.02	U	0.023	U	0.021	U	NT	NT	NT
Acenaphthylene	mg/kg	23	10000	0.00587	NE	0.022	U	0.024	U	0.024	U	0.019	U	0.019	U	**0.113**		0.023	U	0.021	U	NT	NT	NT
Acetophenone	mg/kg	NE	NE	NE	NE	0.86	U	0.944	U	NT		0.743	U	0.733	U	0.799	U	0.917	U	NT		NT	NT	NT
Aniline	mg/kg	NE	NE	NE	NE	0.86	U	0.944	U	NT		0.743	U	0.733	U	0.799	U	0.917	U	NT		NT	NT	NT
Anthracene	mg/kg	35	10000	0.0572	0.845	0.022	U	0.024	U	0.024	U	0.019	U	0.019	U	**0.093**		0.023	U	0.021	U	NT	NT	NT
Azobenzene	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Benzo(a)anthracene	mg/kg	0.9	7.8	0.108	1.05	**0.032**		0.024	U	0.024	U	0.019	U	**0.038**		**0.238**		**0.027**		0.021	U	NT	NT	NT
Benzo(a)pyrene	mg/kg	0.4	0.8	0.15	1.45	**0.032**		0.024	U	0.024	U	0.019	U	**0.035**		**0.182**		**0.026**		0.021	U	NT	NT	NT
Benzo(b)fluoranthene	mg/kg	0.9	7.8	10.4	NE	**0.045**		0.024	U	0.024	U	0.019	U	**0.044**		**0.308**		**0.038**		0.021	U	NT	NT	NT
Benzo(g,h,i)perylene	mg/kg	0.8	10000	0.17	NE	0.022	U	0.024	U	0.024	U	0.019	U	**0.023**		**0.146**		0.023	U	0.021	U	NT	NT	NT
Benzo(k)fluoranthene	mg/kg	0.9	78	0.24	NE	0.022	U	0.024	U	0.024	U	0.019	U	0.019	U	**0.095**		0.023	U	0.021	U	NT	NT	NT
Benzoic Acid	mg/kg	NE	NE	NE	NE	2.15	U	2.36	U	NT		1.86	U	1.83	U	2	U	2.3	U	NT		NT	NT	NT
Benzyl Alcohol	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
bis(2-Chloroethoxy)methane	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
bis(2-Chloroethyl)ether	mg/kg	0.6	5.2	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
bis(2-chloroisopropyl)Ether	mg/kg	9.1	82	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
bis(2-Ethylhexyl)phthalate	mg/kg	46	410	0.182	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Butylbenzylphthalate	mg/kg	NE	NE	1.97	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Carbazole	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Chrysene	mg/kg	0.4	780	0.166	1.29	**0.035**		0.024	U	0.024	U	0.019	U	**0.041**		**0.279**		**0.035**		0.021	U	NT	NT	NT
Dibenzo(a,h)Anthracene	mg/kg	0.4	0.8	0.033	NE	0.022	U	0.024	U	0.024	U	0.019	U	0.019	U	**0.04**		0.023	U	0.021	U	NT	NT	NT
Dibenzofuran	mg/kg	NE	NE	0.449	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Diethylphthalate	mg/kg	340	10000	0.295	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Dimethylphthalate	mg/kg	1900	10000	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Di-n-butylphthalate	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Di-n-octylphthalate	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Fluoranthene	mg/kg	20	10000	0.423	2.23	**0.062**		**0.041**		0.024	U	**0.022**		**0.076**		**0.516**		**0.057**		0.021	U	NT	NT	NT
Fluorene	mg/kg	28	10000	0.0774	0.536	0.022	U	0.024	U	0.024	U	0.019	U	0.019	U	**0.025**		0.023	U	0.021	U	NT	NT	NT
Hexachlorobenzene	mg/kg	0.4	3.6	0.02	NE	0.215	U	0.236	U	NT		0.186	U	0.183	U	0.2	U	0.23	U	NT		NT	NT	NT
Hexachlorobutadiene	mg/kg	8.2	73	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Hexachlorocyclopentadiene	mg/kg	NE	NE	0.0265	NE	2.15	U	2.36	U	NT		1.86	U	1.83	U	2	U	2.3	U	NT		NT	NT	NT
Hexachloroethane	mg/kg	46	410	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Indeno(1,2,3-cd)Pyrene	mg/kg	0.9	7.8	0.2	NE	**0.024**		0.024	U	0.024	U	0.019	U	**0.025**		**0.147**		0.023	U	0.021	U	NT	NT	NT
Isophorone	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Naphthalene	mg/kg	54	10000	NE	0.561	0.022	U	0.024	U	0.024	U	**0.021**		0.019	U	0.02	U	0.023	U	0.021	U	NT	NT	NT
Nitrobenzene	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
N-Nitrosodimethylamine	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
N-Nitroso-Di-n-Propylamine	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
N-nitrosodiphenylamine	mg/kg	NE	NE	NE	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Pentachlorophenol	mg/kg	5.3	48	NE	NE	2.15	U	2.36	U	NT		1.86	U	1.83	U	2	U	2.3	U	NT		NT	NT	NT
Phenanthrene	mg/kg	40	10000	0.204	1.17	**0.03**		0.024	U	0.024	U	0.019	U	**0.047**		**0.38**		**0.024**		0.021	U	NT	NT	NT
Phenol	mg/kg	6000	10000	0.0491	NE	0.429	U	0.471	U	NT		0.371	U	0.366	U	0.399	U	0.458	U	NT		NT	NT	NT
Pyrene	mg/kg	13	10000	0.195	1.52	**0.06**		**0.038**		0.024	U	**0.022**		**0.08**		**0.543**		**0.067**		0.021	U	NT	NT	NT
Pyridine	mg/kg	NE	NE	NE	NE	2.15	U	2.36	U	NT		1.86	U	1.83	U	2	U	2.3	U	NT		NT	NT	NT
Total PAHs	mg/kg	NE	NE	1.61	22.8	0.32		0.079		0		0.065		0.409		**3.105**		0.274		0				
Total Petroleum Hydrocarbons																								
Total Petroleum Hydrocarbons	mg/kg	500	2500	NE	NE	**110**		**145**		NT		42.3	U	42.4	U	**70.3**		56.2	U	NT		NT	NT	NT

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-05		19J0560-06		19J1047-01		19J0560-03		19J0560-04		19J0620-03		19J0620-04		19J1047-02		19J0560-07	19J0620-11	19J0646-07
						SSW-9						SSW-10				SSW-11						Trip Blank	Trip Blank	Trip Blank
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019						10/16/2019				10/17/2019						10/16/2019	10/17/2019	10/18/2019
						0-6 in		6-18 in		18-36 in		0-6 in		6-18 in		0-6 in		6-18 in		18-36 in				
Total Metals																								
Antimony	mg/kg	10	820	NE	NE	5.33	U	4.67	U	5.3	U	4.68	U	4.46	U	3.59	U	5.39	U	5.39	U	NT	NT	NT
Arsenic	mg/kg	7	7	9.79	33	**4.92**		**4.15**		**2.99**		**4.43**		**3.04**		**3.67**		**7.98**		**4.58**		NT	NT	NT
Barium	mg/kg	5500	10000	NE	NE	**16.3**		**18.4**		**17.8**		**10.5**		**8.9**		**11.2**		**23.3**		**18.4**		NT	NT	NT
Beryllium	mg/kg	1.5	1.5	NE	NE	**0.43**		**0.38**		**0.28**		**0.17**		**0.22**		**0.23**		**0.38**		**0.4**		NT	NT	NT
Cadmium	mg/kg	39	1000	0.99	4.98	0.53	U	0.47	U	0.53	U	0.47	U	0.45	U	0.36	U	0.54	U	0.54	U	NT	NT	NT
Chromium	mg/kg	1400	10000	43.4	111	**6.08**		**6.38**		**6.63**		**7.74**		**4.02**		**3.12**		**11**		**7.45**		NT	NT	NT
Cobalt	mg/kg	NE	NE	50	NE	**4.08**		**3.76**		**3.41**		**6.38**		**2.89**		**2.98**		**8.47**		**5.86**		NT	NT	NT
Copper	mg/kg	3100	10000	31.6	149	**8.25**		**8.25**		**9.84**		**12.1**		**7.36**		**5.31**		**19.5**		**14.3**		NT	NT	NT
Lead	mg/kg	150	500	35.8	128	**11.6**		**10.4**		**9.74**		**6.43**		**6.29**		**6.36**		**17.2**		**10.9**		NT	NT	NT
Mercury	mg/kg	23	610	0.18	1.06	0.034	U	0.039	U	0.035	U	0.021	U	0.019	U	0.017	U	**0.027**		**0.023**	U	NT	NT	NT
Nickel	mg/kg	1000	10000	22.7	48.6	**6.97**		**8.66**		**9.24**		**11.1**		**5.32**		**4.36**		**13.4**		**11.7**		NT	NT	NT
Selenium	mg/kg	390	10000	NE	NE	5.33	U	4.67	U	5.3	U	4.68	U	4.46	U	3.59	U	5.39	U	5.39	U	NT	NT	NT
Silver	mg/kg	200	10000	0.5	NE	0.53	U	0.47	U	0.53	U	0.47	U	0.45	U	0.36	U	0.54	U	0.54	U	NT	NT	NT
Thallium	mg/kg	5.5	140	NE	NE	5.33	U	4.67	U	5.3	U	4.68	U	4.46	U	3.59	U	5.39	U	5.39	U	NT	NT	NT
Vanadium	mg/kg	550	10000	NE	NE	**8.79**		**9.3**		**8.32**		**8.05**		**6.24**		**4.94**		**21.3**		**11.1**		NT	NT	NT
Zinc	mg/kg	6000	10000	121	459	**38**		**37**		**33.9**		**21**		**12**		**37.5**		**47.1**		**27.8**		NT	NT	NT
Pesticides																								
4,4´-DDD	mg/kg	NE	NE	0.00488	0.028	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	**0.0229**		**0.0075**		NT	NT	NT
4,4´-DDE	mg/kg	NE	NE	0.00316	0.0313	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	**0.0046**		0.003	U	NT	NT	NT
4,4´-DDT	mg/kg	NE	NE	0.00416	0.0629	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Aldrin	mg/kg	NE	NE	0.002	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
alpha-BHC	mg/kg	NE	NE	0.006	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
alpha-Chlordane	mg/kg	NE	NE	0.00324	0.0176	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
beta-BHC	mg/kg	NE	NE	0.005	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Chlordane (Total)	mg/kg	0.5	4.4	0.00324	0.0176	0.0386	U	0.0421	U	NT		0.0344	U	0.0361	U	0.0359	U	0.0441	U	0.036	U	NT	NT	NT
delta-BHC	mg/kg	NE	NE	71.5	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Dieldrin	mg/kg	0.04	0.4	0.0019	0.0618	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Endosulfan I	mg/kg	NE	NE	0.00326	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Endosulfan II	mg/kg	NE	NE	0.00194	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Endosulfan Sulfate	mg/kg	NE	NE	0.0346	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Endrin	mg/kg	NE	NE	0.00222	0.207	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Endrin Aldehyde	mg/kg	NE	NE	0.48	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Endrin Ketone	mg/kg	NE	NE	NE	0.207	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
gamma-BHC (Lindane)	mg/kg	NE	NE	0.00237	0.0049	0.0019	U	0.0021	U	NT		0.0017	U	0.0018	U	0.0018	U	0.0022	U	0.0018	U	NT	NT	NT
gamma-Chlordane	mg/kg	NE	NE	0.00324	0.0176	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Heptachlor	mg/kg	NE	NE	0.0006	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Heptachlor Epoxide	mg/kg	NE	NE	0.00247	0.016	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Hexachlorobenzene	mg/kg	0.4	3.6	NE	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Methoxychlor	mg/kg	NE	NE	0.0136	NE	0.0032	U	0.0035	U	NT		0.0029	U	0.003	U	0.003	U	0.0037	U	0.003	U	NT	NT	NT
Toxaphene	mg/kg	NE	NE	NE	NE	0.161	U	0.175	U	NT		0.143	U	0.15	U	0.15	U	0.184	U	0.15	U	NT	NT	NT

TABLE 6
SUMMARY OF SEDIMENT SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	RIDEM DIRECT EXPOSURE CRITERIA	RIDEM DIRECT EXPOSURE CRITERIA	CONSENSUS BASED TEC SEDIMENT SCREENING	CONSENSUS BASED PEC SEDIMENT SCREENING	19J0560-05		19J0560-06		19J1047-01	19J0560-03		19J0560-04		19J0620-03		19J0620-04		19J1047-02	19J0560-07	19J0620-11	19J0646-07
						SSW-9					SSW-10				SSW-11					Trip Blank	Trip Blank	Trip Blank
		Residential	Industrial/ Commercial	Freshwater Sediment	Freshwater Sediment	10/16/2019					10/16/2019				10/17/2019					10/16/2019	10/17/2019	10/18/2019
						0-6 in		6-18 in		18-36 in	0-6 in		6-18 in		0-6 in		6-18 in		18-36 in			
PCBs																						
Aroclor 1016	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1221	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1232	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1242	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1248	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1254	mg/kg	10	10	0.0598	0.676	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1260	mg/kg	10	10	0.0598	0.676	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1262	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT
Aroclor 1268	mg/kg	10	10	NE	NE	0.07	U	0.07	U	NT	0.06	U	0.06	U	0.06	U	0.07	U	NT	NT	NT	NT

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected
3. Green highlight indicates an exceedence of
4. Yellow highlight indicates an exceedance of
5. Orange highlight indicates an exceedance of the
6. "NE" indicates that a standard for the parameter is not established.
7. "U" indicates that the parameter is not detected.
8. "J" indicates that the parameter is Reported between MDL and MRL
9. "D" indicates that the parameter was diluted
10. "NT" indicates that the parameter was not tested.
11. "P" indicates that the percent differece between primary and confirmation results exceeds 40%.
12. "LC" indicates that the lower value is used due to matrix interferences.
13. The Freshwater Sediment Screening Criteria (TECs and PECs) are a compilation of ecological screening benchmarks from USEPA Region 5, Threshold Effect Concentrations (TEC) presented in MacDonald et al. 2000, Freshwater Sediment Quality Guidelines from MacDonald et al. 1999 and Freshwater Sediment Guidelines from NOAA Sediment Quick Reference Tables (SQUIRTs). Benchmarks shown for gamma-chlordane and alpha-chlordane are the benchmarks presented for chlordane.

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0562-01	19L0295-01		19L0295-07		19L0295-08		19L0295-09	
		Acute	Chronic	SSW-1			SSW-2		SSW-3		SSW-4	
				10/16/2019	12/10/2019		12/10/2019		12/10/2019		12/10/2019	
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	mg/L	0.980*	0.022*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1,1-Trichloroethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1,2,2-Tetrachloroethane	mg/L	0.466*	0.010*	NT	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,1,2-Trichloroethane	mg/L	0.900*	0.020*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloroethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloroethene	mg/L	0.580*	0.013*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloropropene	mg/L	0.1150*	0.026*	NT	0.002	U	0.002	U	0.002	U	0.002	U
1,2,3-Trichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2,3-Trichloropropane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2,4-Trichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2,4-Trimethylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dibromo-3-Chloropropane	mg/L	NE	NE	NT	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dibromoethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichloroethane	mg/L	5.900*	0.131*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichloropropane	mg/L	2.625*	0.058*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,3,5-Trimethylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,3-Dichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,3-Dichloropropane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,4-Dichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,4-Dioxane - Screen	mg/L	NE	NE	NT	0.5	U	0.5	U	0.5	U	0.5	U
1-Chlorohexane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
2,2-Dichloropropane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
2-Butanone	mg/L	NE	NE	NT	0.01	U	0.01	U	0.01	U	0.01	U
2-Chlorotoluene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
2-Hexanone	mg/L	NE	NE	NT	0.01	U	0.01	U	0.01	U	0.01	U
4-Chlorotoluene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
4-Isopropyltoluene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
4-Methyl-2-Pentanone	mg/L	NE	NE	NT	0.025	U	0.025	U	0.025	U	0.025	U
Acetone	mg/L	NE	NE	NT	0.01	U	0.01	U	0.01	U	0.01	U
Benzene	mg/L	0.265*	0.0059*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Bromobenzene	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Bromochloromethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Bromodichloromethane	mg/L	NE	NE	NT	0.0006	U	0.0006	U	0.0006	U	0.0006	U
Bromoform	mg/L	1.465*	0.033*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Bromomethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Carbon Disulfide	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Carbon Tetrachloride	mg/L	1.365*	0.030*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Chlorobenzene	mg/L	.795*	0.018*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Chloroethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Chloroform	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Chloromethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
cis-1,2-Dichloroethene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Volatile Organic Compounds												

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0562-01	19L0295-01		19L0295-07		19L0295-08		19L0295-09	
		Acute	Chronic	SSW-1			SSW-2		SSW-3		SSW-4	
				10/16/2019	12/10/2019		12/10/2019		12/10/2019		12/10/2019	
cis-1,3-Dichloropropene	mg/L	NE	NE	NT	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Dibromochloromethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Dibromomethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Dichlorodifluoromethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Diethyl Ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Di-isopropyl ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Ethyl tertiary-butyl ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Ethylbenzene	mg/L	1.600*	0.036*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Hexachlorobutadiene	mg/L	NE	NE	NT	0.0006	U	0.0006	U	0.0006	U	0.0006	U
Hexachloroethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Isopropylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Methyl tert-Butyl Ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Methylene Chloride	mg/L	9.650*	0.214*	NT	0.002	U	0.002	U	0.002	U	0.002	U
Naphthalene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
n-Butylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
n-Propylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
sec-Butylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Styrene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
tert-Butylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Tertiary-amyl methyl ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Tetrachloroethene	mg/L	0.240*	5.3*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Tetrahydrofuran	mg/L	NE	NE	NT	0.005	U	0.005	U	0.005	U	0.005	U
Toluene	mg/L	0.635*	0.014*	NT	0.001	U	0.001	U	0.001	U	0.001	U
trans-1,2-Dichloroethene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
trans-1,3-Dichloropropene	mg/L	NE	NE	NT	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Trichloroethene	mg/L	1.950*	0.043*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Trichlorofluoromethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Vinyl Acetate	mg/L	NE	NE	NT	0.005	U	0.005	U	0.005	U	0.005	U
Vinyl Chloride	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Xylene O	mg/L	0.133*	0.0030*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Xylene P,M	mg/L	0.133*	0.0030*	NT	0.002	U	0.002	U	0.002	U	0.002	U
Xylenes (Total)	mg/L	0.133*	0.0030*	NT	0.002	U	0.002	U	0.002	U	0.002	U

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
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Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0562-01	19L0295-01		19L0295-07		19L0295-08		19L0295-09	
		Acute	Chronic	SSW-1			SSW-2		SSW-3		SSW-4	
				10/16/2019	12/10/2019		12/10/2019		12/10/2019		12/10/2019	
Semi-Volatile Organic Compounds												
1,1-Biphenyl	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
1,2,4-Trichlorobenzene	mg/L	0.075*	0.0017*	NT	0.009	U	0.009	U	0.01	U	0.01	U
1,2-Dichlorobenzene	mg/L	0.079*	0.0018*	NT	0.009	U	0.009	U	0.01	U	0.01	U
1,3-Dichlorobenzene	mg/L	0.390*	0.0087*	NT	0.009	U	0.009	U	0.01	U	0.01	U
1,4-Dichlorobenzene	mg/L	0.056*	0.0012*	NT	0.009	U	0.009	U	0.01	U	0.01	U
2,3,4,6-Tetrachlorophenol	mg/L	NE	NE	NT	0.047	U	0.047	U	0.05	U	0.052	U
2,4,5-Trichlorophenol	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
2,4,6-Trichlorophenol	mg/L	0.016*	0.00036*	NT	0.009	U	0.009	U	0.01	U	0.01	U
2,4-Dichlorophenol	mg/L	0.101*	0.0022*	NT	0.009	U	0.009	U	0.01	U	0.01	U
2,4-Dimethylphenol	mg/L	0.106*	0.0024*	NT	0.047	U	0.047	U	0.05	U	0.052	U
2,4-Dinitrophenol	mg/L	0.031*	0.00069*	NT	0.047	U	0.047	U	0.05	U	0.052	U
2,4-Dinitrotoluene	mg/L	1.550*	0.034*	NT	0.009	U	0.009	U	0.01	U	0.01	U
2,6-Dinitrotoluene	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
2-Chloronaphthalene	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
2-Chlorophenol	mg/L	0.129*	0.0029*	NT	0.009	U	0.009	U	0.01	U	0.01	U
2-Methylnaphthalene	mg/L	NE	NE	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
2-Methylphenol	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
2-Nitroaniline	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
2-Nitrophenol	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
3,3´-Dichlorobenzidine	mg/L	NE	NE	NT	0.019	U	0.019	U	0.02	U	0.021	U
3+4-Methylphenol	mg/L	NE	NE	NT	0.019	U	0.019	U	0.02	U	0.021	U
3-Nitroaniline	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
4,6-Dinitro-2-Methylphenol	mg/L	NE	NE	NT	0.047	U	0.047	U	0.05	U	0.052	U
4-Bromophenyl-phenylether	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
4-Chloro-3-Methylphenol	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
4-Chloroaniline	mg/L	NE	NE	NT	0.019	U	0.019	U	0.02	U	0.021	U
4-Chloro-phenyl-phenyl ether	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
4-Nitroaniline	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
4-Nitrophenol	mg/L	NE	NE	NT	0.047	U	0.047	U	0.05	U	0.052	U
Acenaphthene	mg/L	0.085*	0.0019*	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
Acenaphthylene	mg/L	NE	NE	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
Acetophenone	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Aniline	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Anthracene	mg/L	NE	NE	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
Azobenzene	mg/L	NE	NE	NT	0.019	U	0.019	U	0.02	U	0.021	U
Benzo(a)anthracene	mg/L	NE	NE	NT	0.00005	U	**0.00011**		**0.00012**		**0.00044**	
Benzo(a)pyrene	mg/L	NE	NE	NT	0.00005	U	**0.00017**		**0.00015**		**0.00071**	
Benzo(b)fluoranthene	mg/L	NE	NE	NT	0.00005	U	**0.00029**		**0.00022**		**0.00116**	
Benzo(g,h,i)perylene	mg/L	NE	NE	NT	0.00019	U	0.00019	U	0.0002	U	**0.00066**	
Benzo(k)fluoranthene	mg/L	NE	NE	NT	0.00005	U	**0.0001**		**0.00007**		**0.00039**	
Benzoic Acid	mg/L	NE	NE	NT	0.093	U	0.093	U	0.1	U	0.103	U
Benzyl Alcohol	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
bis(2-Chloroethoxy)methane	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Semi-Volatile Organic Compounds												

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PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0562-01	19L0295-01		19L0295-07		19L0295-08		19L0295-09	
		Acute	Chronic	SSW-1			SSW-2		SSW-3		SSW-4	
				10/16/2019	12/10/2019		12/10/2019		12/10/2019		12/10/2019	
bis(2-Chloroethyl)ether	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
bis(2-chloroisopropyl)Ether	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
bis(2-Ethylhexyl)phthalate	mg/L	0.555*	0.012*	NT	0.006	U	0.006	U	0.006	U	0.006	U
Butylbenzylphthalate	mg/L	0.085*	0.0019*	NT	0.009	U	0.009	U	0.01	U	0.01	U
Carbazole	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Chrysene	mg/L	NE	NE	NT	0.00005	U	**0.00021**		**0.00017**		**0.00081**	
Dibenzo(a,h)Anthracene	mg/L	NE	NE	NT	0.00005	U	0.00005	U	0.00005	U	**0.00014**	
Dibenzofuran	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Diethylphthalate	mg/L	2.605*	0.058*	NT	0.009	U	0.009	U	0.01	U	0.01	U
Dimethylphthalate	mg/L	1.650*	0.037*	NT	0.009	U	0.009	U	0.01	U	0.01	U
Di-n-butylphthalate	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Di-n-octylphthalate	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Fluoranthene	mg/L	0.199*	0.0044*	NT	0.00019	U	**0.00042**		**0.00032**		**0.0016**	
Fluorene	mg/L	NE	NE	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
Hexachlorobenzene	mg/L	NE	NE	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
Hexachlorobutadiene	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
Hexachlorocyclopentadiene	mg/L	0.00035*	0.000008*	NT	0.023	U	0.023	U	0.025	U	0.026	U
Hexachloroethane	mg/L	0.049*	0.0011*	NT	0.005	U	0.005	U	0.005	U	0.005	U
Indeno(1,2,3-cd)Pyrene	mg/L	NE	NE	NT	0.00005	U	**0.00017**		**0.00013**		**0.0007**	
Isophorone	mg/L	5.850*	0.130*	NT	0.009	U	0.009	U	0.01	U	0.01	U
Naphthalene	mg/L	0.115*	0.0026*	NT	0.00019	U	0.00019	U	0.0002	U	0.00021	U
Nitrobenzene	mg/L	1.350*	0.030*	NT	0.009	U	0.009	U	0.01	U	0.01	U
N-Nitrosodimethylamine	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
N-Nitroso-Di-n-Propylamine	mg/L	NE	NE	NT	0.009	U	0.009	U	0.01	U	0.01	U
N-nitrosodiphenylamine	mg/L	0.293*	0.0065*	NT	0.009	U	0.009	U	0.01	U	0.01	U
Pentachlorophenol[12]	mg/L	0.0000551	0.0000423	NT	0.00084	U	0.00084	U	0.0009	U	0.00093	U
Phenanthrene	mg/L	NE	NE	NT	0.00019	U	**0.00019**		0.0002	U	**0.00074**	
Phenol	mg/L	0.251*	0.0056*	NT	0.009	U	0.009	U	0.01	U	0.01	U
Pyrene	mg/L	NE	NE	NT	0.00019	U	**0.00033**		**0.00028**		**0.00132**	
Pyridine	mg/L	NE	NE	NT	0.093	U	0.093	U	0.1	U	0.103	U
Total Petroleum Hydrocarbons												
Total Petroleum Hydrocarbons	mg/L	NE	NE	NT	0.19	U	**0.26**		**0.36**		**0.25**	

TABLE 7
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PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0562-01		19L0295-01	19L0295-07		19L0295-08		19L0295-09	
		Acute	Chronic	SSW-1			SSW-2		SSW-3		SSW-4	
				10/16/2019		12/10/2019	12/10/2019		12/10/2019		12/10/2019	
Dissolved Metals												
Antimony	mg/L	0.450*	0.010*	0.0002	U, D	NT	0.001	U	0.001	U	0.001	U
Arsenic	mg/L	0.34	0.15	0.0005	U	NT	0.005	U	0.005	U	0.005	U
Barium	mg/L	NE	NE	**0.014**		NT	0.05	U	**0.074**		0.05	U
Beryllium	mg/L	0.0075*	0.00017*	0.0001	U	NT	0.001	U	0.001	U	0.001	U
Cadmium[12]	mg/L	0.00089	0.00038	0.0005	U	NT	0.001	U	0.001	U	0.001	U
Chromium[12]	mg/L	0.2854	0.0371	0.002	U	NT	0.02	U	0.02	U	0.02	U
Copper[12]	mg/L	0.0061	0.0044	0.002	U	NT	0.02	U	0.02	U	0.02	U
Iron	mg/L	NE	1.000	**0.094**		NT	**12.6**		**10.9**		**3.42**	
Lead[12]	mg/L	0.0255	0.0010	0.002	U	NT	0.001	U	0.001	U	0.001	U
Mercury	mg/L	0.0014	0.0008	0.0002	U	NT	0.0002	U	0.0002	U	0.0002	U
Nickel[13]	mg/L	0.2293	0.0255	0.005	U	NT	0.05	U	0.05	U	0.05	U
Selenium	mg/L	0.0200	0.0050	0.005	U	NT	0.005	U	0.005	U	0.005	U
Silver[13]	mg/L	0.0008	NE	0.001	U	NT	0.01	U	0.01	U	0.01	U
Thallium	mg/L	0.046*	0.0010*	0.0001	U, D	NT	0.0002	U	0.0002	U	0.0002	U
Vanadium	mg/L	NE	NE	0.002	U	NT	0.02	U	0.02	U	0.02	U
Zinc[13]	mg/L	0.0573	0.0578	**0.015**		NT	0.05	U	**0.06**		**0.056**	
Pesticides												
4,4´-DDD	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
4,4´-DDE	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
4,4´-DDT	mg/L	0.0011[$]	0.000001	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Aldrin	mg/L	0.003$	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
alpha-BHC	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
alpha-Chlordane	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
beta-BHC	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Chlordane (Total)	mg/L	0.0024	0.0000043	NT		0.000467	0.000467	U	0.000481	U	0.000467	U
delta-BHC	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Dieldrin	mg/L	0.00024	0.000056	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Endosulfan I	mg/L	0.00022[$]	0.000056	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Endosulfan II	mg/L	0.00022[$]	0.000056	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Endosulfan Sulfate	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Endrin	mg/L	0.000086[$]	0.000036	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Endrin Aldehyde	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Endrin Ketone	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
gamma-BHC (Lindane)	mg/L	0.95[$]	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
gamma-Chlordane	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Heptachlor	mg/L	0.00052[$]	0.0000038	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Heptachlor Epoxide	mg/L	0.00052[$]	0.0000038	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Hexachlorobenzene	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Methoxychlor	mg/L	NE	NE	NT		0.000047	0.000047	U	0.000048	U	0.000047	U
Toxaphene	mg/L	0.00073	0.0000002	NT		0.00121	0.00121	U	0.00125	U	0.00121	U
PCBs												

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PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0562-01	19L0295-01		19L0295-07		19L0295-08		19L0295-09	
		Acute	Chronic	SSW-1			SSW-2		SSW-3		SSW-4	
				10/16/2019	12/10/2019		12/10/2019		12/10/2019		12/10/2019	
Aroclor 1016	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1221	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1232	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1242	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1248	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1254	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1260	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1262	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Aroclor 1268	mg/L	NE	0.000014	NT	0.00009	U	0.00009	U	0.00009	U	0.00009	U
Classical Chemistry												
Total Organic Carbon	mg/L	NE	NE	NT	**6.13**		**18.1**	D	**29.7**	D	**18.6**	D

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Warwick, Rhode Island
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PARAMETERS	UNITS	State Freshwater Aquatic Life		19L0295-11		19L0295-10		19L0295-06		19L0295-05		19L0295-04		19J0562-02	19L0295-03	
		Acute	Chronic	SSW-5		SSW-6		SSW-7		SSW-8		SSW-9		SSW-10		
				12/10/2019		12/10/2019		12/10/2019		12/10/2019		12/10/2019		10/16/2019	12/10/2019	
Volatile Organic Compounds																
1,1,1,2-Tetrachloroethane	mg/L	0.980*	0.022*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,1,1-Trichloroethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,1,2,2-Tetrachloroethane	mg/L	0.466*	0.010*	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	NT	0.0005	U
1,1,2-Trichloroethane	mg/L	0.900*	0.020*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,1-Dichloroethane	mg/L	NE	NE	0.001	U	**0.0015**		0.001	U	0.001	U	0.001	U	NT	0.001	U
1,1-Dichloroethene	mg/L	0.580*	0.013*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,1-Dichloropropene	mg/L	0.1150*	0.026*	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
1,2,3-Trichlorobenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,2,3-Trichloropropane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,2,4-Trichlorobenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,2,4-Trimethylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	**0.0196**		NT	0.001	U
1,2-Dibromo-3-Chloropropane	mg/L	NE	NE	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NT	0.005	U
1,2-Dibromoethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,2-Dichlorobenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,2-Dichloroethane	mg/L	5.900*	0.131*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,2-Dichloropropane	mg/L	2.625*	0.058*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,3,5-Trimethylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,3-Dichlorobenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,3-Dichloropropane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
1,4-Dichlorobenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	**0.0046**		NT	0.001	U
1,4-Dioxane - Screen	mg/L	NE	NE	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	NT	0.5	U
1-Chlorohexane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
2,2-Dichloropropane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
2-Butanone	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NT	0.01	U
2-Chlorotoluene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
2-Hexanone	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	NT	0.01	U
4-Chlorotoluene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
4-Isopropyltoluene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
4-Methyl-2-Pentanone	mg/L	NE	NE	0.025	U	0.025	U	0.025	U	0.025	U	0.025	U	NT	0.025	U
Acetone	mg/L	NE	NE	0.01	U	0.01	U	0.01	U	0.01	U	**0.0114**		NT	0.01	U
Benzene	mg/L	0.265*	0.0059*	0.001	U	0.001	U	0.001	U	0.001	U	**0.0036**		NT	0.001	U
Bromobenzene	mg/L	NE	NE	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
Bromochloromethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Bromodichloromethane	mg/L	NE	NE	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	NT	0.0006	U
Bromoform	mg/L	1.465*	0.033*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Bromomethane	mg/L	NE	NE	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
Carbon Disulfide	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Carbon Tetrachloride	mg/L	1.365*	0.030*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Chlorobenzene	mg/L	.795*	0.018*	0.001	U	0.001	U	0.001	U	**0.0017**		**0.0257**		NT	0.001	U
Chloroethane	mg/L	NE	NE	0.002	U	0.002	U	0.002	U	**0.0104**		**0.0204**		NT	0.002	U
Chloroform	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Chloromethane	mg/L	NE	NE	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
cis-1,2-Dichloroethene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Volatile Organic Compounds																

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19L0295-11		19L0295-10		19L0295-06		19L0295-05		19L0295-04		19J0562-02	19L0295-03	
		Acute	Chronic	SSW-5		SSW-6		SSW-7		SSW-8		SSW-9		SSW-10		
				12/10/2019		12/10/2019		12/10/2019		12/10/2019		12/10/2019		10/16/2019	12/10/2019	
cis-1,3-Dichloropropene	mg/L	NE	NE	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	NT	0.0004	U
Dibromochloromethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Dibromomethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Dichlorodifluoromethane	mg/L	NE	NE	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
Diethyl Ether	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	**0.0019**		**0.002**		NT	0.001	U
Di-isopropyl ether	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Ethyl tertiary-butyl ether	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Ethylbenzene	mg/L	1.600*	0.036*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Hexachlorobutadiene	mg/L	NE	NE	0.0006	U	0.0006	U	0.0006	U	0.0006	U	0.0006	U	NT	0.0006	U
Hexachloroethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Isopropylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	**0.0019**		NT	0.001	U
Methyl tert-Butyl Ether	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Methylene Chloride	mg/L	9.650*	0.214*	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
Naphthalene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	**0.0012**		NT	0.001	U
n-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
n-Propylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	**0.0031**		NT	0.001	U
sec-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Styrene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
tert-Butylbenzene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Tertiary-amyl methyl ether	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Tetrachloroethene	mg/L	0.240*	5.3*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Tetrahydrofuran	mg/L	NE	NE	0.005	U	0.005	U	0.005	U	0.005	U	**0.0247**		NT	0.005	U
Toluene	mg/L	0.635*	0.014*	**0.0022**		0.001	U	**0.0011**		0.001	U	0.001	U	NT	0.001	U
trans-1,2-Dichloroethene	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
trans-1,3-Dichloropropene	mg/L	NE	NE	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U	NT	0.0004	U
Trichloroethene	mg/L	1.950*	0.043*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Trichlorofluoromethane	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Vinyl Acetate	mg/L	NE	NE	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NT	0.005	U
Vinyl Chloride	mg/L	NE	NE	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Xylene O	mg/L	0.133*	0.0030*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	NT	0.001	U
Xylene P,M	mg/L	0.133*	0.0030*	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U
Xylenes (Total)	mg/L	0.133*	0.0030*	0.002	U	0.002	U	0.002	U	0.002	U	0.002	U	NT	0.002	U

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PARAMETERS	UNITS	State Freshwater Aquatic Life		19L0295-11		19L0295-10		19L0295-06		19L0295-05		19L0295-04		19J0562-02	19L0295-03	
		Acute	Chronic	SSW-5		SSW-6		SSW-7		SSW-8		SSW-9		SSW-10		
				12/10/2019		12/10/2019		12/10/2019		12/10/2019		12/10/2019		10/16/2019	12/10/2019	
Semi-Volatile Organic Compounds																
1,1-Biphenyl	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
1,2,4-Trichlorobenzene	mg/L	0.075*	0.0017*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
1,2-Dichlorobenzene	mg/L	0.079*	0.0018*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
1,3-Dichlorobenzene	mg/L	0.390*	0.0087*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
1,4-Dichlorobenzene	mg/L	0.056*	0.0012*	0.009	U	0.009	U	0.009	U	0.009	U	**0.011**		NT	0.009	U
2,3,4,6-Tetrachlorophenol	mg/L	NE	NE	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	NT	0.047	U
2,4,5-Trichlorophenol	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2,4,6-Trichlorophenol	mg/L	0.016*	0.00036*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2,4-Dichlorophenol	mg/L	0.101*	0.0022*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2,4-Dimethylphenol	mg/L	0.106*	0.0024*	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	NT	0.047	U
2,4-Dinitrophenol	mg/L	0.031*	0.00069*	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	NT	0.047	U
2,4-Dinitrotoluene	mg/L	1.550*	0.034*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2,6-Dinitrotoluene	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2-Chloronaphthalene	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2-Chlorophenol	mg/L	0.129*	0.0029*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2-Methylnaphthalene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	**0.00219**		NT	0.00019	U
2-Methylphenol	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2-Nitroaniline	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
2-Nitrophenol	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
3,3´-Dichlorobenzidine	mg/L	NE	NE	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	NT	0.019	U
3+4-Methylphenol	mg/L	NE	NE	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	NT	0.019	U
3-Nitroaniline	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
4,6-Dinitro-2-Methylphenol	mg/L	NE	NE	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	NT	0.047	U
4-Bromophenyl-phenylether	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
4-Chloro-3-Methylphenol	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
4-Chloroaniline	mg/L	NE	NE	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	NT	0.019	U
4-Chloro-phenyl-phenyl ether	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
4-Nitroaniline	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
4-Nitrophenol	mg/L	NE	NE	0.047	U	0.047	U	0.047	U	0.047	U	0.047	U	NT	0.047	U
Acenaphthene	mg/L	0.085*	0.0019*	0.00019	U	0.00019	U	0.00019	U	0.00019	U	**0.00029**		NT	0.00019	U
Acenaphthylene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	NT	0.00019	U
Acetophenone	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Aniline	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Anthracene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	NT	0.00019	U
Azobenzene	mg/L	NE	NE	0.019	U	0.019	U	0.019	U	0.019	U	0.019	U	NT	0.019	U
Benzo(a)anthracene	mg/L	NE	NE	**0.00009**		0.00005	U	0.00005	U	0.00005	U	**0.00011**		NT	0.00005	U
Benzo(a)pyrene	mg/L	NE	NE	**0.00013**		0.00005	U	0.00005	U	0.00005	U	**0.00015**		NT	0.00005	U
Benzo(b)fluoranthene	mg/L	NE	NE	**0.0002**		0.00005	U	0.00005	U	0.00005	U	**0.0002**		NT	0.00005	U
Benzo(g,h,i)perylene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	NT	0.00019	U
Benzo(k)fluoranthene	mg/L	NE	NE	**0.00005**		0.00005	U	0.00005	U	0.00005	U	**0.00007**		NT	0.00005	U
Benzoic Acid	mg/L	NE	NE	0.093	U	0.093	U	0.093	U	0.093	U	0.093	U	NT	0.093	U
Benzyl Alcohol	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
bis(2-Chloroethoxy)methane	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Semi-Volatile Organic Compounds																

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PARAMETERS	UNITS	State Freshwater Aquatic Life		19L0295-11		19L0295-10		19L0295-06		19L0295-05		19L0295-04		19J0562-02	19L0295-03	
		Acute	Chronic	SSW-5		SSW-6		SSW-7		SSW-8		SSW-9		SSW-10		
				12/10/2019		12/10/2019		12/10/2019		12/10/2019		12/10/2019		10/16/2019	12/10/2019	
bis(2-Chloroethyl)ether	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
bis(2-chloroisopropyl)Ether	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
bis(2-Ethylhexyl)phthalate	mg/L	0.555*	0.012*	0.006	U	0.006	U	0.006	U	0.006	U	0.006	U	NT	0.006	U
Butylbenzylphthalate	mg/L	0.085*	0.0019*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Carbazole	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Chrysene	mg/L	NE	NE	**0.00014**		0.00005	U	0.00005	U	0.00005	U	**0.00015**		NT	0.00005	U
Dibenzo(a,h)Anthracene	mg/L	NE	NE	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NT	0.00005	U
Dibenzofuran	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Diethylphthalate	mg/L	2.605*	0.058*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Dimethylphthalate	mg/L	1.650*	0.037*	**0.009**		0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Di-n-butylphthalate	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Di-n-octylphthalate	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Fluoranthene	mg/L	0.199*	0.0044*	**0.00025**		0.00019	U	0.00019	U	0.00019	U	**0.00027**		NT	0.00019	U
Fluorene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	**0.00033**		NT	0.00019	U
Hexachlorobenzene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	0.00019	U	NT	0.00019	U
Hexachlorobutadiene	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Hexachlorocyclopentadiene	mg/L	0.00035*	0.000008*	0.023	U	0.023	U	0.023	U	0.023	U	0.023	U	NT	0.023	U
Hexachloroethane	mg/L	0.049*	0.0011*	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NT	0.005	U
Indeno(1,2,3-cd)Pyrene	mg/L	NE	NE	**0.00011**		0.00005	U	0.00005	U	0.00005	U	**0.00013**		NT	0.00005	U
Isophorone	mg/L	5.850*	0.130*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Naphthalene	mg/L	0.115*	0.0026*	0.00019	U	0.00019	U	0.00019	U	**0.00034**		**0.00277**		NT	0.00019	U
Nitrobenzene	mg/L	1.350*	0.030*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
N-Nitrosodimethylamine	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
N-Nitroso-Di-n-Propylamine	mg/L	NE	NE	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
N-nitrosodiphenylamine	mg/L	0.293*	0.0065*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Pentachlorophenol[12]	mg/L	0.0000551	0.0000423	0.00084	U	0.00084	U	0.00084	U	0.00084	U	0.00084	U	NT	0.00084	U
Phenanthrene	mg/L	NE	NE	0.00019	U	0.00019	U	0.00019	U	0.00019	U	**0.00053**		NT	0.00019	U
Phenol	mg/L	0.251*	0.0056*	0.009	U	0.009	U	0.009	U	0.009	U	0.009	U	NT	0.009	U
Pyrene	mg/L	NE	NE	**0.0002**		0.00019	U	0.00019	U	0.00019	U	**0.00031**		NT	0.00019	U
Pyridine	mg/L	NE	NE	0.093	U	0.093	U	0.093	U	0.093	U	0.093	U	NT	0.093	U
Total Petroleum Hydrocarbons																
Total Petroleum Hydrocarbons	mg/L	NE	NE	**0.31**		**0.32**		**0.49**		**0.82**		**1.52**		NT	**0.2**	

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19L0295-11		19L0295-10		19L0295-06		19L0295-05		19L0295-04		19J0562-02		19L0295-03
		Acute	Chronic	SSW-5		SSW-6		SSW-7		SSW-8		SSW-9		SSW-10		
				12/10/2019		12/10/2019		12/10/2019		12/10/2019		12/10/2019		10/16/2019		12/10/2019
Dissolved Metals																
Antimony	mg/L	0.450*	0.010*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.0002	U, D	NT
Arsenic	mg/L	0.34	0.15	0.005	U	0.005	U	**0.006**		0.005	U	0.005	U	**0.002**		NT
Barium	mg/L	NE	NE	**0.091**		**0.121**		**0.075**		**0.124**		**0.159**		**0.069**		NT
Beryllium	mg/L	0.0075*	0.00017*	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.0001	U	NT
Cadmium[12]	mg/L	0.00089	0.00038	0.001	U	**0.004**		0.001	U	0.001	U	0.001	U	0.0005	U	NT
Chromium[12]	mg/L	0.2854	0.0371	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.002	U	NT
Copper[12]	mg/L	0.0061	0.0044	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.002	U	NT
Iron	mg/L	NE	1.000	**0.142**		**0.167**		**11**		**0.138**		**22.6**		**21.2**		NT
Lead[12]	mg/L	0.0255	0.0010	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.002	U	NT
Mercury	mg/L	0.0014	0.0008	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	NT
Nickel[13]	mg/L	0.2293	0.0255	0.05	U	**0.065**		0.05	U	0.05	U	0.05	U	**0.009**		NT
Selenium	mg/L	0.0200	0.0050	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	NT
Silver[13]	mg/L	0.0008	NE	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.001	U	NT
Thallium	mg/L	0.046*	0.0010*	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0001	U, D	NT
Vanadium	mg/L	NE	NE	0.02	U	0.02	U	0.02	U	0.02	U	0.02	U	0.002	U	NT
Zinc[13]	mg/L	0.0573	0.0578	0.05	U	**1.31**		**0.068**		0.05	U	0.05	U	**0.023**		NT
Pesticides																
4,4´-DDD	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
4,4´-DDE	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
4,4´-DDT	mg/L	0.0011[$]	0.000001	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Aldrin	mg/L	0.003$	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
alpha-BHC	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
alpha-Chlordane	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	4.70E-05	U	0.000047	U	NT		0.000047 U
beta-BHC	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Chlordane (Total)	mg/L	0.0024	0.0000043	0.000467	U	0.000467	U	0.000467	U	0.000467	U	0.000467	U	NT		0.000467 U
delta-BHC	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Dieldrin	mg/L	0.00024	0.000056	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Endosulfan I	mg/L	0.00022[$]	0.000056	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Endosulfan II	mg/L	0.00022[$]	0.000056	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Endosulfan Sulfate	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Endrin	mg/L	0.000086[$]	0.000036	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Endrin Aldehyde	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Endrin Ketone	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
gamma-BHC (Lindane)	mg/L	0.95[$]	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
gamma-Chlordane	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Heptachlor	mg/L	0.00052[$]	0.0000038	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Heptachlor Epoxide	mg/L	0.00052[$]	0.0000038	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Hexachlorobenzene	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Methoxychlor	mg/L	NE	NE	0.000047	U	0.000047	U	0.000047	U	0.000047	U	0.000047	U	NT		0.000047 U
Toxaphene	mg/L	0.00073	0.0000002	0.00121	U	0.00121	U	0.00121	U	0.00121	U	0.00121	U	NT		0.00121 U
PCBs																

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February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19L0295-11		19L0295-10		19L0295-06		19L0295-05		19L0295-04		19J0562-02	19L0295-03	
		Acute	Chronic	SSW-5		SSW-6		SSW-7		SSW-8		SSW-9		SSW-10		
				12/10/2019		12/10/2019		12/10/2019		12/10/2019		12/10/2019		10/16/2019	12/10/2019	
Aroclor 1016	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1221	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1232	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1242	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	**0.0002**		NT	0.00009	U
Aroclor 1248	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1254	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1260	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1262	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Aroclor 1268	mg/L	NE	0.000014	0.00009	U	0.00009	U	0.00009	U	0.00009	U	0.00009	U	NT	0.00009	U
Classical Chemistry																
Total Organic Carbon	mg/L	NE	NE	**23.1**	D	**10.5**	D	**16.5**	D	**24.9**	D	**54.8**	D	NT	**13**	

TABLE 7
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Former Truk-Away Landfill
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February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0622-01	19L0295-02		19J0562-03		19J0622-02		19L0295-12	
		Acute	Chronic	SSW-11			Trip Blank		Trip Blank		Trip Blank	
				10/17/2019	12/10/2019		10/16/2019		10/17/2019		12/10/2019	
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	mg/L	0.980*	0.022*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1,1-Trichloroethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1,2,2-Tetrachloroethane	mg/L	0.466*	0.010*	NT	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,1,2-Trichloroethane	mg/L	0.900*	0.020*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloroethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloroethene	mg/L	0.580*	0.013*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,1-Dichloropropene	mg/L	0.1150*	0.026*	NT	0.002	U	0.002	U	0.002	U	0.002	U
1,2,3-Trichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2,3-Trichloropropane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2,4-Trichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2,4-Trimethylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dibromo-3-Chloropropane	mg/L	NE	NE	NT	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dibromoethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichloroethane	mg/L	5.900*	0.131*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,2-Dichloropropane	mg/L	2.625*	0.058*	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,3,5-Trimethylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,3-Dichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,3-Dichloropropane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,4-Dichlorobenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
1,4-Dioxane - Screen	mg/L	NE	NE	NT	0.5	U	0.5	U	0.5	U	0.5	U
1-Chlorohexane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
2,2-Dichloropropane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
2-Butanone	mg/L	NE	NE	NT	0.01	U	0.01	U	0.01	U	0.01	U
2-Chlorotoluene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
2-Hexanone	mg/L	NE	NE	NT	0.01	U	0.01	U	0.01	U	0.01	U
4-Chlorotoluene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
4-Isopropyltoluene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
4-Methyl-2-Pentanone	mg/L	NE	NE	NT	0.025	U	0.025	U	0.025	U	0.025	U
Acetone	mg/L	NE	NE	NT	0.01	U	0.01	U	0.01	U	0.01	U
Benzene	mg/L	0.265*	0.0059*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Bromobenzene	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Bromochloromethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Bromodichloromethane	mg/L	NE	NE	NT	0.0006	U	0.0006	U	0.0006	U	0.0006	U
Bromoform	mg/L	1.465*	0.033*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Bromomethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Carbon Disulfide	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Carbon Tetrachloride	mg/L	1.365*	0.030*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Chlorobenzene	mg/L	.795*	0.018*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Chloroethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Chloroform	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Chloromethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
cis-1,2-Dichloroethene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Volatile Organic Compounds												

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February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0622-01	19L0295-02		19J0562-03		19J0622-02		19L0295-12	
		Acute	Chronic	SSW-11			Trip Blank		Trip Blank		Trip Blank	
				10/17/2019	12/10/2019		10/16/2019		10/17/2019		12/10/2019	
cis-1,3-Dichloropropene	mg/L	NE	NE	NT	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Dibromochloromethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Dibromomethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Dichlorodifluoromethane	mg/L	NE	NE	NT	0.002	U	0.002	U	0.002	U	0.002	U
Diethyl Ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Di-isopropyl ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Ethyl tertiary-butyl ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Ethylbenzene	mg/L	1.600*	0.036*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Hexachlorobutadiene	mg/L	NE	NE	NT	0.0006	U	0.0006	U	0.0006	U	0.0006	U
Hexachloroethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Isopropylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Methyl tert-Butyl Ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Methylene Chloride	mg/L	9.650*	0.214*	NT	0.002	U	0.002	U	0.002	U	0.002	U
Naphthalene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
n-Butylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
n-Propylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
sec-Butylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Styrene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
tert-Butylbenzene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Tertiary-amyl methyl ether	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Tetrachloroethene	mg/L	0.240*	5.3*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Tetrahydrofuran	mg/L	NE	NE	NT	0.005	U	0.005	U	0.005	U	0.005	U
Toluene	mg/L	0.635*	0.014*	NT	0.001	U	0.001	U	0.001	U	0.001	U
trans-1,2-Dichloroethene	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
trans-1,3-Dichloropropene	mg/L	NE	NE	NT	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Trichloroethene	mg/L	1.950*	0.043*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Trichlorofluoromethane	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Vinyl Acetate	mg/L	NE	NE	NT	0.005	U	0.005	U	0.005	U	0.005	U
Vinyl Chloride	mg/L	NE	NE	NT	0.001	U	0.001	U	0.001	U	0.001	U
Xylene O	mg/L	0.133*	0.0030*	NT	0.001	U	0.001	U	0.001	U	0.001	U
Xylene P,M	mg/L	0.133*	0.0030*	NT	0.002	U	0.002	U	0.002	U	0.002	U
Xylenes (Total)	mg/L	0.133*	0.0030*	NT	0.002	U	0.002	U	0.002	U	0.002	U

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
Former Truk-Away Landfill
Warwick, Rhode Island
February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0622-01	19L0295-02		19J0562-03	19J0622-02	19L0295-12
		Acute	Chronic	SSW-11			Trip Blank	Trip Blank	Trip Blank
				10/17/2019	12/10/2019		10/16/2019	10/17/2019	12/10/2019
Semi-Volatile Organic Compounds									
1,1-Biphenyl	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
1,2,4-Trichlorobenzene	mg/L	0.075*	0.0017*	NT	0.009	U	NT	NT	NT
1,2-Dichlorobenzene	mg/L	0.079*	0.0018*	NT	0.009	U	NT	NT	NT
1,3-Dichlorobenzene	mg/L	0.390*	0.0087*	NT	0.009	U	NT	NT	NT
1,4-Dichlorobenzene	mg/L	0.056*	0.0012*	NT	0.009	U	NT	NT	NT
2,3,4,6-Tetrachlorophenol	mg/L	NE	NE	NT	0.047	U	NT	NT	NT
2,4,5-Trichlorophenol	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
2,4,6-Trichlorophenol	mg/L	0.016*	0.00036*	NT	0.009	U	NT	NT	NT
2,4-Dichlorophenol	mg/L	0.101*	0.0022*	NT	0.009	U	NT	NT	NT
2,4-Dimethylphenol	mg/L	0.106*	0.0024*	NT	0.047	U	NT	NT	NT
2,4-Dinitrophenol	mg/L	0.031*	0.00069*	NT	0.047	U	NT	NT	NT
2,4-Dinitrotoluene	mg/L	1.550*	0.034*	NT	0.009	U	NT	NT	NT
2,6-Dinitrotoluene	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
2-Chloronaphthalene	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
2-Chlorophenol	mg/L	0.129*	0.0029*	NT	0.009	U	NT	NT	NT
2-Methylnaphthalene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
2-Methylphenol	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
2-Nitroaniline	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
2-Nitrophenol	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
3,3´-Dichlorobenzidine	mg/L	NE	NE	NT	0.019	U	NT	NT	NT
3+4-Methylphenol	mg/L	NE	NE	NT	0.019	U	NT	NT	NT
3-Nitroaniline	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
4,6-Dinitro-2-Methylphenol	mg/L	NE	NE	NT	0.047	U	NT	NT	NT
4-Bromophenyl-phenylether	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
4-Chloro-3-Methylphenol	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
4-Chloroaniline	mg/L	NE	NE	NT	0.019	U	NT	NT	NT
4-Chloro-phenyl-phenyl ether	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
4-Nitroaniline	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
4-Nitrophenol	mg/L	NE	NE	NT	0.047	U	NT	NT	NT
Acenaphthene	mg/L	0.085*	0.0019*	NT	0.00019	U	NT	NT	NT
Acenaphthylene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Acetophenone	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Aniline	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Anthracene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Azobenzene	mg/L	NE	NE	NT	0.019	U	NT	NT	NT
Benzo(a)anthracene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Benzo(a)pyrene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Benzo(b)fluoranthene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Benzo(g,h,i)perylene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Benzo(k)fluoranthene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Benzoic Acid	mg/L	NE	NE	NT	0.093	U	NT	NT	NT
Benzyl Alcohol	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
bis(2-Chloroethoxy)methane	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Semi-Volatile Organic Compounds									

TABLE 7
SUMMARY OF SURFACE WATER SAMPLING RESULTS
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February 2020

PARAMETERS	UNITS	State Freshwater Aquatic Life		19J0622-01	19L0295-02		19J0562-03	19J0622-02	19L0295-12
		Acute	Chronic	SSW-11			Trip Blank	Trip Blank	Trip Blank
				10/17/2019	12/10/2019		10/16/2019	10/17/2019	12/10/2019
bis(2-Chloroethyl)ether	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
bis(2-chloroisopropyl)Ether	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
bis(2-Ethylhexyl)phthalate	mg/L	0.555*	0.012*	NT	0.006	U	NT	NT	NT
Butylbenzylphthalate	mg/L	0.085*	0.0019*	NT	0.009	U	NT	NT	NT
Carbazole	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Chrysene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Dibenzo(a,h)Anthracene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Dibenzofuran	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Diethylphthalate	mg/L	2.605*	0.058*	NT	0.009	U	NT	NT	NT
Dimethylphthalate	mg/L	1.650*	0.037*	NT	0.009	U	NT	NT	NT
Di-n-butylphthalate	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Di-n-octylphthalate	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Fluoranthene	mg/L	0.199*	0.0044*	NT	0.00019	U	NT	NT	NT
Fluorene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Hexachlorobenzene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Hexachlorobutadiene	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
Hexachlorocyclopentadiene	mg/L	0.00035*	0.000008*	NT	0.023	U	NT	NT	NT
Hexachloroethane	mg/L	0.049*	0.0011*	NT	0.005	U	NT	NT	NT
Indeno(1,2,3-cd)Pyrene	mg/L	NE	NE	NT	0.00005	U	NT	NT	NT
Isophorone	mg/L	5.850*	0.130*	NT	0.009	U	NT	NT	NT
Naphthalene	mg/L	0.115*	0.0026*	NT	0.00019	U	NT	NT	NT
Nitrobenzene	mg/L	1.350*	0.030*	NT	0.009	U	NT	NT	NT
N-Nitrosodimethylamine	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
N-Nitroso-Di-n-Propylamine	mg/L	NE	NE	NT	0.009	U	NT	NT	NT
N-nitrosodiphenylamine	mg/L	0.293*	0.0065*	NT	0.009	U	NT	NT	NT
Pentachlorophenol[12]	mg/L	0.0000551	0.0000423	NT	0.00084	U	NT	NT	NT
Phenanthrene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Phenol	mg/L	0.251*	0.0056*	NT	0.009	U	NT	NT	NT
Pyrene	mg/L	NE	NE	NT	0.00019	U	NT	NT	NT
Pyridine	mg/L	NE	NE	NT	0.093	U	NT	NT	NT
Total Petroleum Hydrocarbons									
Total Petroleum Hydrocarbons	mg/L	NE	NE	NT	0.19	U	NT	NT	NT

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		Acute	Chronic	SSW-11			Trip Blank	Trip Blank	Trip Blank
				10/17/2019		12/10/2019	10/16/2019	10/17/2019	12/10/2019
Dissolved Metals									
Antimony	mg/L	0.450*	0.010*	0.0004	U	NT	NT	NT	NT
Arsenic	mg/L	0.34	0.15	0.005	U	NT	NT	NT	NT
Barium	mg/L	NE	NE	0.05	U	NT	NT	NT	NT
Beryllium	mg/L	0.0075*	0.00017*	0.001	U	NT	NT	NT	NT
Cadmium[12]	mg/L	0.00089	0.00038	0.0002	U	NT	NT	NT	NT
Chromium[12]	mg/L	0.2854	0.0371	0.02	U	NT	NT	NT	NT
Copper[12]	mg/L	0.0061	0.0044	0.02	U	NT	NT	NT	NT
Iron	mg/L	NE	1.000	**0.221**		NT	NT	NT	NT
Lead[12]	mg/L	0.0255	0.0010	0.001	U	NT	NT	NT	NT
Mercury	mg/L	0.0014	0.0008	0.0002	U	NT	NT	NT	NT
Nickel[13]	mg/L	0.2293	0.0255	0.05	U	NT	NT	NT	NT
Selenium	mg/L	0.0200	0.0050	0.01	U	NT	NT	NT	NT
Silver[13]	mg/L	0.0008	NE	0.01	U	NT	NT	NT	NT
Thallium	mg/L	0.046*	0.0010*	0.0002	U	NT	NT	NT	NT
Vanadium	mg/L	NE	NE	0.02	U	NT	NT	NT	NT
Zinc[13]	mg/L	0.0573	0.0578	0.05	U	NT	NT	NT	NT
Pesticides									
4,4´-DDD	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
4,4´-DDE	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
4,4´-DDT	mg/L	0.0011[$]	0.000001	NT		0.000047 U	NT	NT	NT
Aldrin	mg/L	0.003$	NE	NT		0.000047 U	NT	NT	NT
alpha-BHC	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
alpha-Chlordane	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
beta-BHC	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Chlordane (Total)	mg/L	0.0024	0.0000043	NT		0.000467 U	NT	NT	NT
delta-BHC	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Dieldrin	mg/L	0.00024	0.000056	NT		0.000047 U	NT	NT	NT
Endosulfan I	mg/L	0.00022[$]	0.000056	NT		0.000047 U	NT	NT	NT
Endosulfan II	mg/L	0.00022[$]	0.000056	NT		0.000047 U	NT	NT	NT
Endosulfan Sulfate	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Endrin	mg/L	0.000086[$]	0.000036	NT		0.000047 U	NT	NT	NT
Endrin Aldehyde	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Endrin Ketone	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
gamma-BHC (Lindane)	mg/L	0.95[$]	NE	NT		0.000047 U	NT	NT	NT
gamma-Chlordane	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Heptachlor	mg/L	0.00052[$]	0.0000038	NT		0.000047 U	NT	NT	NT
Heptachlor Epoxide	mg/L	0.00052[$]	0.0000038	NT		0.000047 U	NT	NT	NT
Hexachlorobenzene	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Methoxychlor	mg/L	NE	NE	NT		0.000047 U	NT	NT	NT
Toxaphene	mg/L	0.00073	0.0000002	NT		0.00121 U	NT	NT	NT
PCBs									

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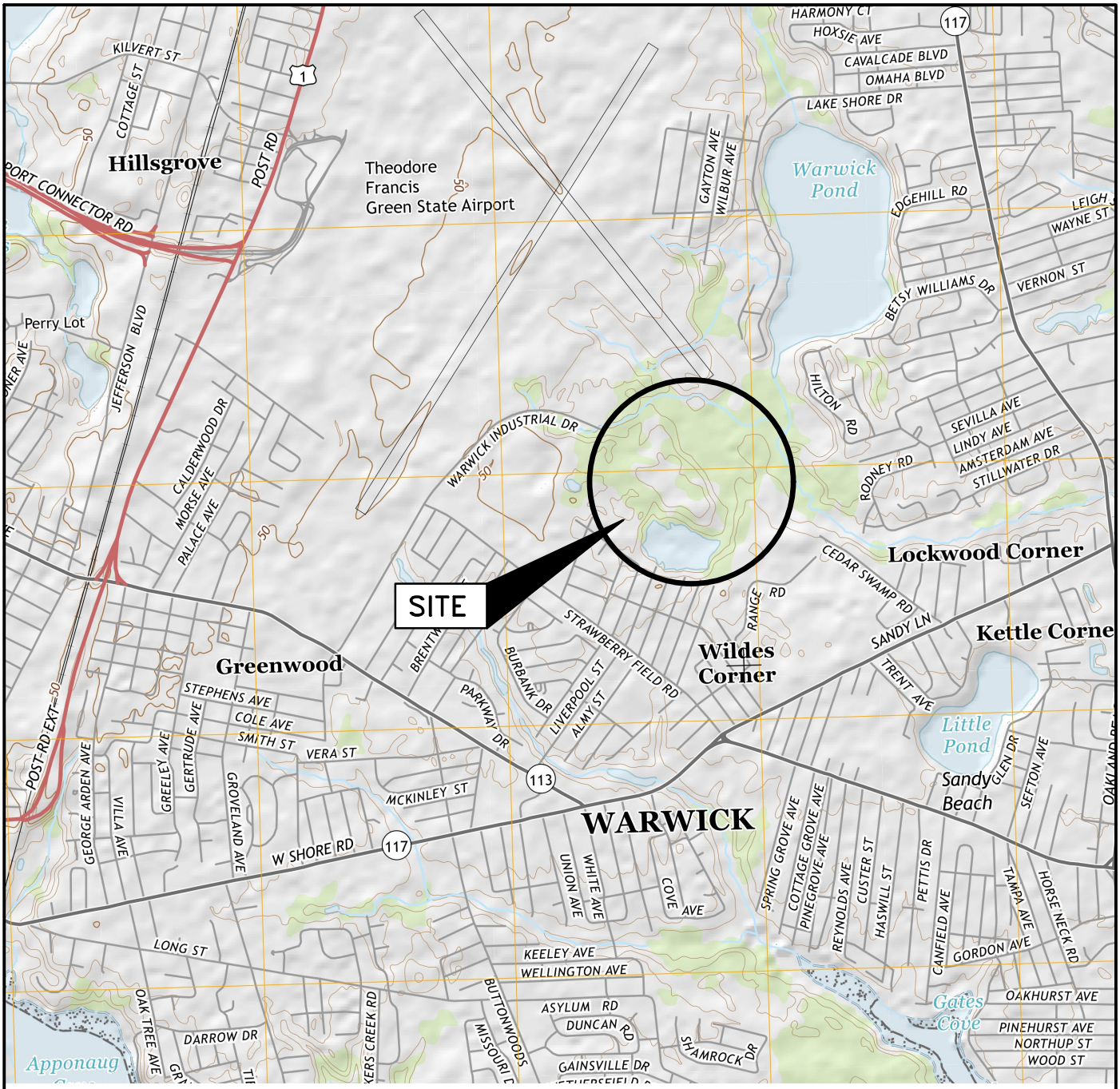
		Acute	Chronic	SSW-11			Trip Blank	Trip Blank	Trip Blank
				10/17/2019	12/10/2019		10/16/2019	10/17/2019	12/10/2019
Aroclor 1016	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1221	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1232	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1242	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1248	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1254	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1260	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1262	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Aroclor 1268	mg/L	NE	0.000014	NT	0.00009	U	NT	NT	NT
Classical Chemistry									
Total Organic Carbon	mg/L	NE	NE	NT	**7.77**		NT	NT	NT

Notes:
1: For the complete list of target analytes refer to the attached laboratory certificates of analysis.
2. Bold values indicate the constituent was detected above the laboratory reporting limit.
3. Blue highlight indicates an exceedance of RIDEM's Acute Freshwater Aquatic Life Criteria.
4. Green highlight indicates an exceedence of RIDEM's Freshwater Chronic Aquatic Life Criteria.
5. "NE" indicates that a standard for the parameter is not established.
6. "U" indicates that the parameter is not detected.
7. "D" indicates that the parameter was diluted
8. "NT" indicates that the parameter was not tested.
9. "*" indicates criteria applicable only for freshwaters in which the pH is between 6.5 and 9.
10. "$" indicates that the aquatic life criteria for these values were issued in 1980 utilizing the 1980 Guidelines for criteria development. The acute values shown are final acute values which, by the 1980 Guidelines, are instantaneous values as contrasted with a Criteria Maximum Concentration (CMC) which is a one-hour average.
11. Water Quality Criteria is hardness dependent and was calculated based on a hardness of 43 mg/L, which was the average dry weather hardness at station AP01 from water quality monitoring data provided by RIDEM, from water quality monitoring associated with Buckeye Brook. RIDEM Station AP01 is collocated with sampling location SSW-11. Cadmium values based on updated EPA formula.
12. Water Quality Criteria is pH dependent and was calculated based on a pH of7.1, which was the average dry weather hardness at station AP01 from water quality monitoring data provided by RIDEM, from water quality monitoring associated with Buckeye Brook. RIDEM Station AP01 is collocated with sampling location SSW-11.

FIGURES



SCALE IN FEET 1" = 2000'

RHODE ISLAND

QUADRANGLE LOCATION

SOURCE:

BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
EAST GREENWICH/WARWICK (2015)

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY USGSSTORE.GOV.

CONTOUR ELEVATIONS REFERENCE NAVD 88,
CONTOURS ARE SHOWN IN FEET AT 10' INTERVALS

N
W E
S

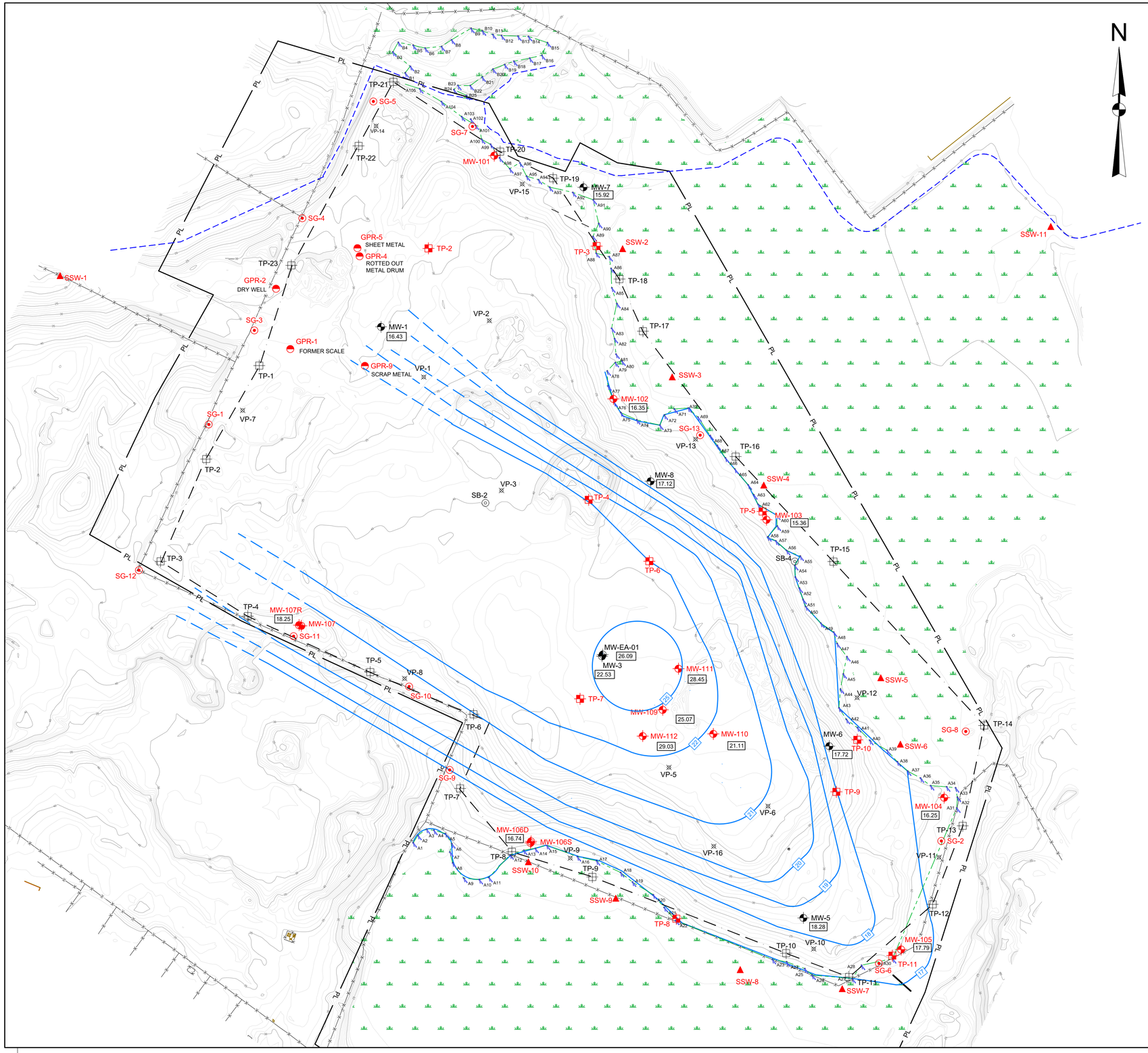
TRUK-AWAY LANDFILL
WARWICK INDUSTRIAL DR.
WARWICK, RI

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

PREPARED FOR:
ORSON AND BRUSINI LTD.
144 WAYLAND AVE
PROVIDENCE, RI

LOCUS

PROJ MGR: RAC	REVIEWED BY: EAS	CHECKED BY: MEA	FIGURE 1
DESIGNED BY: RAC	DRAWN BY: CC	SCALE: 1" = 2000'	
DATE: MARCH 2020	PROJECT NO. 34648.00	REVISION NO. 0	SHEET NO. 1



NOTES

1. BASE MAP AND GROUND CONTOURS DEVELOPED FROM A TOPOGRAPHIC SURVEY CONDUCTED BY WSP USA, INC ON NOVEMBER 22, 2019.
2. GROUND PENETRATING RADAR SURVEY WAS PERFOMED BY THIELSCH ENGINEERING ON OCTOBER 2, 2019 AND OBSERVED BY GZA PERSONNEL.
3. THE LOCATIONS OF THE SEDIMENT AND SURFACE WATER SAMPLES WERE APPROXIMATELY DETERMINED USING A TRIMBLE R1 GNSS RECEIVER WITH 50CM ACCURACY BY GZA ON DECEMBER 10, 2019. DATA CAN ONLY BE CONSIDERED ACCURATE TO THE DEGREE IMPLIED BY THE METHOD USED.
4. THE LOCATION OF THE TEST PITS, MONITORING WELLS AND SOIL GAS PROBES WERE APPROXIMATELY DETERMINED USING A LEICA ZENO 20 WITH 50CM ACCURACY BY GZA PERSONNEL ON FEBRUARY 25, 2020. THE DATA CAN ONLY BE CONSIDERED ACCURATE TO THE DEGREE IMPLIED BY THE METHOD USED.
5. GROUND WATER CONTOURS ARE APPROXIMATE AND WERE INTERPOLATED FROM EXISTING GROUND WATER ELEVATIONS OBSERVED BY GZA PERSONNEL. MW-101 WAS DESTROYED BEFORE ELEVATION SURVEY.

LEGEND

TP-3	TEST PITS PERFORMED BY HOFFMAN ENVIRONMENTAL SERVICES ON DECEMBER 2 AND DECEMBER 4, 2019, AND OBSERVED BY GZA PERSONNEL
MW-107	GROUNDWATER MONITORING WELLS INSTALLED BY HOFFMAN ENVIRONMENTAL SERVICES ON DECEMBER 2, DECEMBER 4, DECEMBER 29, AND DECEMBER 31, 2019 AND JANUARY 1, 2020, AND OBSERVED BY GZA PERSONNEL
15.36	GROUNDWATER ELEVATION OBSERVED BY GZA PERSONNEL ON FEBRUARY 25, 2020
SG-13	SOIL AND GAS PROBES INSTALLED BY HOFFMAN ENVIRONMENTAL ON DECEMBER 4 AND DECEMBER 14, 2019, AND OBSERVED BY GZA PERSONNEL
SSW-1	SEDIMENT & SURFACE WATER SAMPLE
GPR-5	LOCATION OF GROUND PENETRATING RADAR SURVEY
MW-1	EXISTING EXPLORATIONS (SYMBOLS VARY)
A51	WETLAND FLAG AND FLAG NUMBER
	EDGE OF WETLAND
PL	APPROXIMATE PROPERTY LINE
	STREAM
	LIMITS OF WASTE
	EXISTING FENCE
17	APPROXIMATE GROUNDWATER CONTOUR
	WETLAND AREA

0 50' 100' 200' 300'
SCALE IN FEET 1" = 100'

NO.	ISSUE/DESCRIPTION	BY	DATE

TRUK-AWAY LANDFILL
WARWICK INDUSTRIAL DRIVE
WARWICK, RHODE ISLAND

EXPLORATION LOCATION PLAN

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

PREPARED FOR:
TRUK-AWAY JOINT DEFENSE GROUP

PROJ MGR:	RAC	REVIEWED BY:	EAS	CHECKED BY:	RAC
DESIGNED BY:	RAC	DRAWN BY:	MEA	SCALE:	AS NOTED
DATE:	MARCH, 2020	PROJECT NO.	03.34648.00	REVISION NO.	0

FIGURE 2
SHEET NO.

APPENDIX A

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.

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.

APPENDIX B

SIR CHECKLIST

Appendix B
Regulatory Reference Matrix
Site Investigation Report
Former Truk-Away Landfill – Warwick, Rhode Island

Regulation	Report Section/Page
1.8.3 A.1 SIR Objectives	SIR – Section 1.3, Page 1
1.8.3 A.2 Notification Of Release and short-term response information	Not applicable - Site previously listed with RIDEM and EPA
1.8.3 A.3 Documentation of any past incidents or releases	SIR – Section 1.2, page 1
1.8.3 A.4 Prior property owners, operators, sequencing of property transfers and time periods of occupancy	SIR – Section 2.2, page 3
1.8.3 A.5 Previous information that characterizes the contaminated site and all information that led to the discovery of the site.	SIR – Section 1.2, page 1
1.8.3 A.6 Current Site uses and zoning and brief description of operations, processes employed, waste generated, hazardous materials handled, and any residential activities	SIR – Section 4.0, page 4
1.8.3 A.7 Locus Plan	SIR – Figure 1
1.8.3 A.8 Site Plan (to scale)	SIR – Figure 2
1.8.3 A.9 General characterization of the surrounding area	SIR – 3.0, pages 3-4
1.8.3 A. 10 Surface and Groundwater Classification (at or near site)	SIR – Sections 3.1 & 3.2, pages 3-4
1.8.3 A.11 Description of contamination from release (all criteria)	SIR – Section 6.0, pages 12-15 Tables 2 and 4 through 7
1.8.3 A.12 Concentration gradients of hazardous substances throughout the site for each media impacted by the release.	Not applicable
1.8.3 A.13 Methodology/results of investigations conducted to determine background concentrations (if applicable).	Not applicable
1.8.3 A.14 Listing and evaluation of the site specific hydrogeological properties that influence the migration of hazardous substances at and away from the site. (all criteria)	SIR – Section 3.0, pages 3-4 & Section 5.10.1, page 11
1.8.3 A.15 Characterization of the topography and surface water and run-off flow patterns, including the flooding potential.	SIR – Section 3.0, pages 3-4
1.8.3 A.16 Volatilization potential - any and all potential impacts to on-site structures.	SIR – Section 6.0, pages 12-15

1.8.3 A.17 The potential for entrainment of hazardous substances by wind or erosion actions.	SIR – Section 6.0, pages 12-15
1.8.3 A.18 Detailed protocols for all fate and transport models.	Not applicable
1.8.3 A.19 List of all samples taken, the location of all samples, testing parameters and analytical methods.	SIR – Sections 5.4, 5.5, 5.6, 5.7, 5.9 & 6.0, pages 8-15 Tables 2 and 4 through 7, Figure 2
1.8.3 A.20 Construction plans and development procedures for all monitoring wells.	SIR – Sections 5.5 & 5.6.1, pages 8-10 Appendix D
1.8.3 A.21 Procedures for the handling, storage and disposal of IDW.	SIR – Section 5.6.1, pages 9-10
1.8.3 A.22 QA/QC evaluation summary report for sample handling and analytical procedures (chain-of-custody and sample preservation techniques).	SIR – Sections 5.4.2, 5.6, 5.8 & 5.9, pages 8-11
1.8.3 A.23 Detailed explanation of how the Public Involvement requirements were met.	Prepared to submit once SIR is approved by RIDEM
1.8.3 A.24 Any other site-specific factor, that the Director believes, is necessary to make an accurate decision as to the appropriate remedial action to be taken at the site.	Not applicable
1.8.4 Development of Remedial Alternatives	SIR – Section 8.0, page 16
1.8.5 Certification	SIR Section 10.0, page 18
1.8.6 Progess Reports	Not applicable
1.8.7 Public Involvement & Notice	Prepared to submit once SIR is approved by RIDEM

APPENDIX C

PREVIOUS REPORTS

ARCS I

Final Site Inspection Prioritization

Truk-Away Landfill

Warwick, Rhode Island

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment No.:	23-1JZZ
EPA Region:	I
CERCLIS No.:	RID987493822
TDD No.:	9109-20-ACX
Contract No.:	68-W9-0045
Document No.:	7710-23-FR-BGMM
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Date Prepared:	December 18, 1993

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Truk-Away Landfill
Warwick, Rhode Island

CERCLIS No. RID987493822
TDD No. 9109-20-ACX
Work Assignment No. 23-1JZZ
Document No. 7710-023-FR-BGMM

INTRODUCTION

The CDM Federal Programs Corporation (CDM) Alternative Remedial Contracting Strategy (ARCS) team was requested by the U.S. Environmental Protection Agency (EPA) Region I Waste Management Division to perform a Site Inspection Prioritization (SIP) of the Truk-Away Landfill property in Warwick, Rhode Island. Tasks were conducted in accordance with the ARCS Contract No. 68-W9-0045, SIP scope of work dated September 3, 1992, and technical specifications provided by EPA under Work Assignment No. 23-1JZZ, which was issued to CDM on September 22, 1992. A Site Inspection was prepared by Ecology and Environment, Inc. in June 1982. On the basis of the information provided in the Site Inspection report, the Truk-Away Landfill SIP was initiated.

Background information used in the generation of this report was obtained through file searches conducted at Rhode Island Department of Environmental Management (RIDEM), Rhode Island Department of Administration, telephone interviews, conversations with persons knowledgeable of the Truk-Away Landfill, and conversations with other federal, state, and local agencies. Additional information was collected during the CDM onsite reconnaissance on March 10, 1993 and environmental sampling on May 11, 1993.

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other federal, state or local regulations. SIPs are intended to provide a preliminary screening of sites to facilitate EPA's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

SITE DESCRIPTION

The Truk-Away Landfill is located on Industrial Drive in Warwick, Kent County, Rhode Island (Latitude 41° 34′ 50″ N, Longitude 71° 25′ 20″ W) (see Figure 1: Location Map) [59]. The actual landfill comprises approximately 36 acres of a 52-acre parcel and is located approximately 3 miles west of Narragansett Bay, 2 miles north of Greenwich Bay and is adjacent to the Theodore Francis Green Memorial State Airport southeast runway [2,15]. The property is identified as Plat 342, Lots 2,3,5, and 429 in the City of Warwick Land Evidence Records [3]. The landfill is zoned light industrial [7]. The land in the area adjacent to Sandy Lane is generally zoned for residential use; some areas near the site have been developed for light industry [11]. The property is bordered to the southeast by the old Warwick City Dump (no longer operating), to the south by a residential area, to the west by the former Leesona Corporation, to the north by the airport runway, and to the east by wetlands [2].

There are no buildings on the property, but concrete slabs near the main entrance indicate the location of former buildings onsite. A dirt road crosses the landfill. Varying depths of fill throughout the landfill are evidenced by rises and slopes and exposed trash and debris (medical waste, paint cans, crushed drums, electrical waste, mercury film packs) scattered across the property. A dark oily area is located near the concrete slabs [2].

An 8-foot fence topped with barbed wire surrounds the property and concrete Jersey barriers prevent access to the main entrance. Tires, used oil, and other solid waste have been illegally dumped along Industrial Drive just outside the main entrance. Access to the landfill is not limited near the residential area located south of the property due to an estimated 25-foot wide opening in the landfill's fence. Well-worn dirt bike trails extend into the landfill from the end of Bartlett Drive [2].

Source: U.S.G.S. 1957. East Greenwich, R.I. 7.5 ' series (topographic).

LOCATION MAP
TRUK-AWAY LANDFILL
WARWICK, RHODE ISLAND

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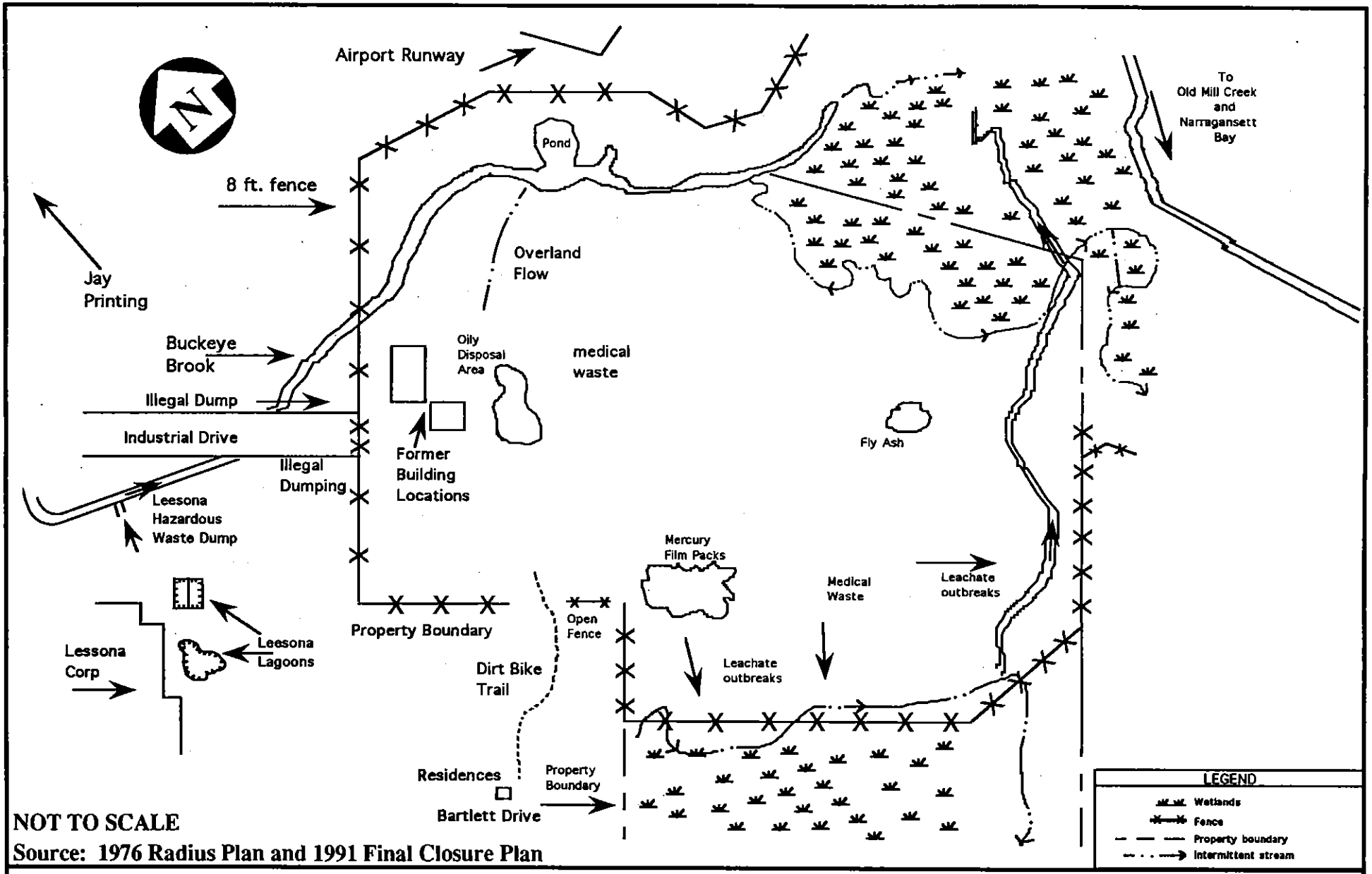
Figure 1



NOT TO SCALE

Source: 1976 Radius Plan and 1991 Final Closure Plan

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SITE SKETCH
TRUK-AWAY LANDFILL
WARWICK, RI

Figure 2

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

The earliest known use of the property was a sand and gravel operation [2,59]. W.J. Realty Co. of Providence, Rhode Island owned and leased the landfill property to Truk-Away of Rhode Island, Inc. (previously Sanitas Disposal Co.) from 1969 to 1976-1977 when it was sold to Truk-Away of Rhode Island, Inc. (owned by Charles Wilson) [2,53]. Rhode Island Department of Transportation (RIDOT) Division of Airports took ownership of the property on October 25, 1977 [3].

The property began accepting municipal and industrial wastes in 1970 under the name Warwick Sanitary Landfill, operated by Sanitas Waste Disposal of Rhode Island, a private commercial refuse collection company [56]. By 1976, the company had changed its name to Truk-Away of Rhode Island, Inc., and the landfill became known as the Truk-Away Landfill [25,62]. Along with its landfill operation, Truk-Away of Rhode Island, Inc. was (is) a major hauler of commercial and industrial trash in Warwick (14).

During a State inspection on June 4, 1982, a former landfill employee told the Rhode Island Department of Health (RIDOH) he had been responsible for overseeing the disposal of drummed chemical wastes at the Truk-Away Landfill in the 1970s and that "hundreds of drums" had been disposed of at the landfill [15]. According to the former employee, the types of wastes disposed of at the landfill included: sulfur monochloride, benzyl chloride, xylol, toluene, pyridine, spent solvents, nitrobenzene, chlorobenzene, trichloroethylene (TCE), dyes, pigments, intermediate compounds made from benzene reactions, phenols, hydrogen peroxide, and benzene sulfonyl chloride [15].

The only known potential source of contamination on the property is the 36-acre landfill itself. There are no containment factors associated with this source as it is unlined, and its waste is uncovered [3,10]. More information regarding the quantity and specific types of waste disposed of at the landfill from 1970 to 1977 are unknown [2,21,31,56].

According to a Notification of Hazardous Waste Site form completed by Recycling Industries Inc. of Braintree, Massachusetts, approximately 432 cubic feet and 39,050 gallons of "low hazard material (i.e., paint waste, still bottoms, hydroxide sludge, non-hazardous wastes)" were disposed of at the Truk-Away Landfill from 1977 to 1978 (although the landfill had reportedly ceased operating in 1977). The source of the wastes were identified as paper/printing, chemical, plating/polishing, utility, and metal fabrication companies [4].

The facility began its operations in the elevated northwest section of the property in May 1970. Prior to February 19, 1971, the facility began dumping into the "swampy area" without first placing any clean material as required by the RIDOH, Division of Solid Waste Management. Samples collected from Buckeye Brook on February 19, 1971 by RIDOH reportedly revealed characteristics similar to samples collected at other landfills having water pollution problems [25].

An old oil disposal pit located off the eastern boundary of the property was identified as a possible source of unidentified water quality contamination in a letter from the state to Sanitary Waste Disposal of Rhode Island dated July 22, 1974 [39]. The exact location of this pit was not determined; however, during the 1993 CDM reconnaissance (recon), an oily area was observed near the former building location near the western boundary of the landfill (see Figure 2: Site Sketch) [2].

During its operation, the landfill was the subject of several complaints. In 1974 and 1975, the RIDOH was informed of a roach problem at the landfill, and the Warwick Department of Public Works sprayed the landfill with chlordane [27]. In April 1976, the RIDOH received several odor complaints regarding the Truk-Away Landfill. Inspections conducted by the department indicated that the odors were emanating from an area of the landfill approximately 75 feet by 45 feet in size and that the odors were associated with decaying organic matter. Truk-Away of Rhode Island, Inc. was halted from further filling of the area by the Rhode Island Department of Natural Resources [6,26]. In October 1976, the Town of Warwick's Councilman informed the State Division of Water Pollution Control that he had received several odor complaints from the landfill. A follow-up inspection noted odors emanating from restaurant refuse on the central area of the landfill (12).

In January 1976, Truk-Away of Rhode Island, Inc. applied for permission to alter freshwater wetlands by filling a portion of an unnamed swamp in order to extend its existing landfill operation approximately 460 feet southward. Permission was denied because of the landfill's proximity to freshwater wetlands and the potential impact on the Buckeye Brook, Warwick Pond, and Narragansett Bay wetlands [22]. On February 25, 1976, the Warwick City Council requested that RIDOH inspect the landfill twice per week to ensure compliance with regulations due to numerous public complaints regarding the site [62].

In 1977, State inspections and field investigations observed several daily cover and wind-blown refuse control violations at the Truk-Away Landfill, and a hearing was held in April 1977 before the Adjudication Hearing Officer [41]. The results of the hearing were not determined during file reviews.

RIDOT reportedly condemned and closed the landfill in 1977 because birds circling the site interfered with air traffic at the nearby airport [14]. In October 1977, RIDOT took ownership of the property [3]. At that time, RIDEM informed DOT of the closure requirements associated with sanitary landfills and suggested that the responsibility for closure be left with Truk-Away of Rhode Island, Inc. prior to the transfer of property ownership [38]. According to the previous owner and operator of the landfill, Charles Wilson, the landfill was not clean closed; only exposed waste was covered with 2 to 3 feet of fill [2]. In 1980, RIDEM informed RIDOT of its responsibility to adequately close the facility [38].

In October and December 1980 and February 1981, Rhode Island Division of Water Resources collected surface water samples at three surface water locations associated with the site: Brush Neck Cove, Little Pond, and Buckeye Brook at Warwick Avenue. Brush Neck Cove is located

approximately 0.9 mile southeast; Little Pond is located approximately 0.75 mile southeast of the landfill. Samples were analyzed for metals and volatile organics [59,15] (see Figure 1: Location Map). Analytical results indicated the presence of TCE (at 1 microgram per liter (μg/L)) and mercury (at 0.0014 milligram per liter (mg/L)) [32]. (See Surface Water Pathway.)

The site was entered into the CERCLA Information System (CERCLIS) on June 1, 1981. On April 19, 1982, a perimeter survey was conducted by Ecology and Environment, Inc. (E&E) as part of a Superfund Preliminary Assessment of the site. Observations noted during the perimeter survey included noticeable odors and a leachate plume on the western boundary of the site and trash blown outside the western perimeter [10].

On July 23, 1982, as part of a Superfund Site Inspection, E&E collected headspace samples with an organic vapor analyzer (OVA) of leachate from the landfill. A gas chromatograph identified toluene in the leachate west #2 sample at 2 parts per million (ppm) and tetrachloroethylene (PCE) in the leachate S.E. sample at 2 ppm [23]. An HNu, used to monitor air during E&E's sampling, detected 50 to 150 ppm total volatile organics at the western and eastern edges of the landfill [23].

In August 1987, RIDEM collected two samples, one sediment sample and one surface water sample, at the base of an unnamed pond on the northern boundary of the site. Analytical results indicated polychlorinated biphenyls (PCBs) (at 3 ppm) in the surface water sample and chloroethane (at 17 parts per billion (ppb)), methylene chloride (at 5 ppb), and TCE (at 1 ppb) in the sediment sample [31].

In December 1988, RIDEM wrote the Division of Airports to clarify that it was the responsibility of the RIDOT to prepare a closure plan for the landfill, employ a registered professional engineer to prepare plans and specification of the existing and final grades for the landfill, maintain a total thickness of 24 inches of cover material on all surfaces and faces, and provide the landfill with a drainage system to minimize surface water runoff onto and into the fill, to prevent erosion of the fill, to drain off rainwater falling on the fill, and to prevent the collection of standing water [18].

In 1988, medical waste was discovered at the landfill by a nearby worker. RIDOT reportedly covered the exposed waste with 8 inches of cover [2,18]. According to a letter from RIDEM to the Division of Airports, the landfill was being used to illegally dispose of solid waste in December 1990. At that time, access was not restricted and the cover material on the landfill was insufficient [1].

On March 1, 1991, the RIDEM investigated the property due to noxious odors offending workers at the FAA Control Tower. A "foul smelling odor" detected in the swampy area behind the tower was followed back to Buckeye Brook. The observed leachate from the landfill into Buckeye Brook was believed to be causing eutrophication in the brook. "A reddish bacteria was observed coming from a shiny blanket on the bottom of the brook. Gas bubbles were seen being released from the stream" [16].

RIDEM Division of Groundwater and Freshwater Wetlands identified that freshwater wetlands are present on or adjacent to the landfill and conditionally approved an "insignificant" alteration of the freshwater wetland as proposed in the Final Closure Plan dated March 1, 1991 [52].

The Division of Airports filed a Wetlands Determination Application with the RIDEM Division of Water Resources and submitted a closure plan to the RIDEM Air and Hazardous Materials Division on April 16, 1991 [62]. As part of its closure plan, RIDOT proposed the following material as cover for the landfill: asbestos-contaminated building demolition debris from the Providence Housing Authority, unclassified excavation from a runway rehabilitation project onsite gravel bank, previously petroleum-contaminated soil processed in Warwick until clean, West Warwick Sewage Treatment Plant composted sludge and odorless organic material, and dewatered Narragansett Bay dredged material [3]. On May 1, 1991, RIDEM conditionally approved the plan and asked for a schedule of closure activities within ten days [17]. In May 1991, the City of Warwick hired its own consultant (Environmental Resource Associates Engineering, Inc.) to review the wetlands application and closure application [3,19]. On May 8, 1991, the City of Warwick petitioned for Declaratory Rulings and requested a Contested Hearing regarding the landfill [3].

In a letter dated May 21, 1991, the Division of Airports postponed submittal of a closure schedule due to lack of the requested wetlands determination and the City of Warwick's objections to the closure plan [41]. On June 7, 1991, the City of Warwick appealed the ruling of the RIDEM Division of Groundwater and Freshwater Wetlands dated May 31, 1991 based on incompleteness and nonconformance with applicable law and regulation requirements [28].

On February 3, 1993, RIDEM sent a letter to the Division of Airports requiring the submittal of a schedule within ten days indicating the beginning and ending dates for closure of the landfill. According to the letter, RIDEM had not received any correspondence from the Division of Airports indicating the beginning and ending of all closure activities [19]. As of April 1993, RIDEM had received no correspondence from the Division of Airports regarding the landfill's closure. RIDEM sent another letter to RIDOT requiring a schedule of closure activities by April 30, 1993 [9].

As part of the Superfund SIP, CDM conducted an onsite recon of the landfill on March 10, 1993 [2].

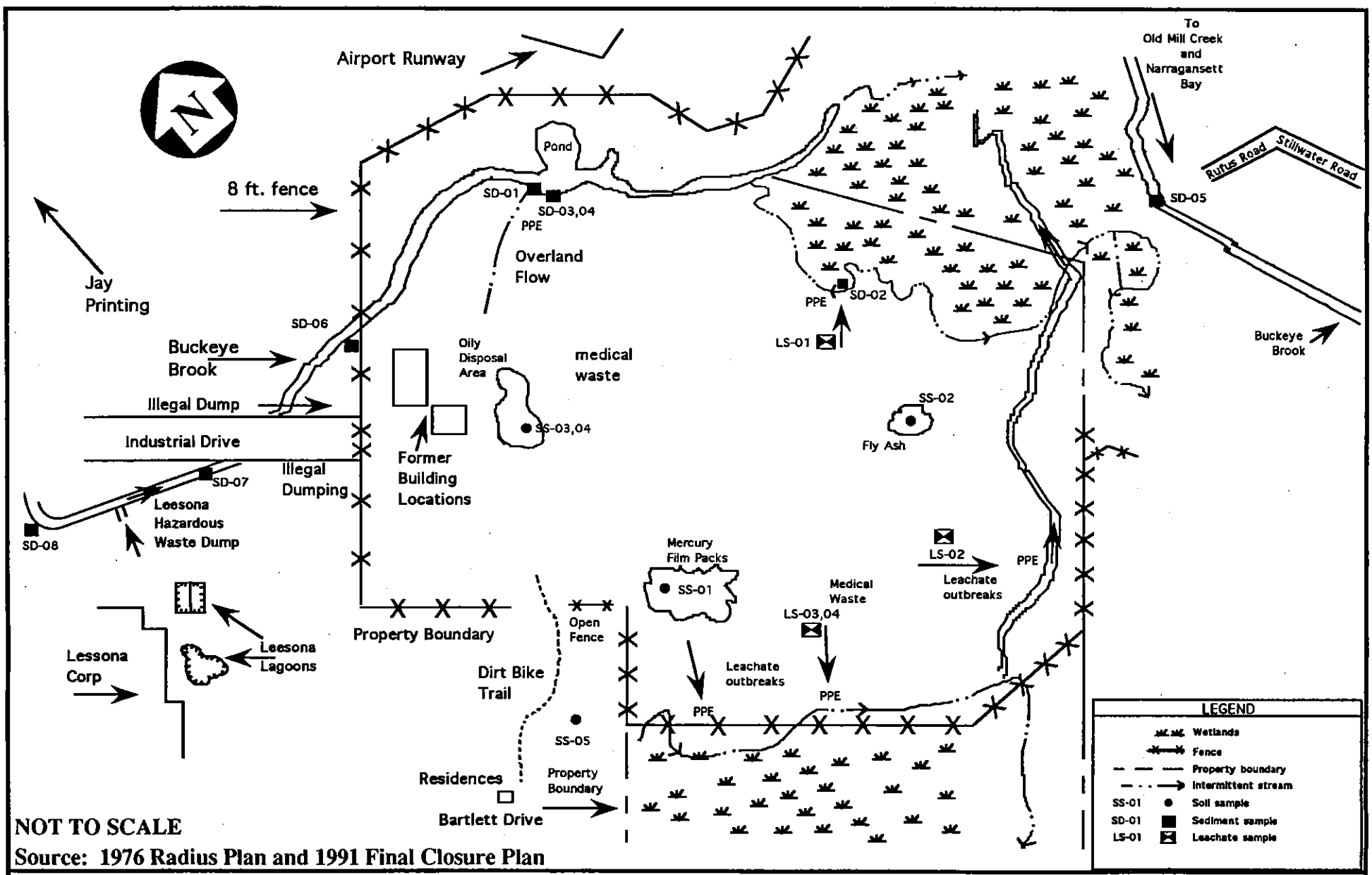
WASTE/SOURCE SAMPLING

On May 11, 1993, CDM collected four soil samples and four leachate (soil) samples from potential source areas on the landfill including an oily area, an area containing mercury film packs, an area reportedly used for fly ash disposal, and leachate outbreaks identified by stained soil. (See Figure 3: Sampling Locations.) Reference samples were taken off the landfill from areas presumed not to have been affected by landfill activities. Figure 3 illustrates the approximate location of samples collected by CDM on May 11, 1993. Table 1 presents a summary of potential source samples collected by CDM on May 11, 1993. All samples were submitted for full organic, total metals and cyanide analysis through the EPA Contract Laboratory Program (CLP).

Table 2 and Table 3 are a summary of compounds and analytes detected through the CLP analysis of CDM soil and sediment samples. For each sample location, a compound or analyte is listed if it is detected at three times or greater than the reference sample concentration. Compounds or analytes which occur at a concentration three times or greater than the reference concentration (sample location SS-05) are designated by their approximate relative concentration above the reference value. If the analyte or compound is not detected in the reference sample, the sample quantitation limit (SQL) (for organic analyses) or sample detection limit (SDL) (for inorganic analyses) is used as a reference value. Accordingly, compounds or analyte are listed by their approximate concentration above the SQL or SDL only if they occur at a value equal to or greater than the reference sample's SQL or SDL.

The complete analytical results of the CDM sampling activities, including quantitation and detection limits are presented in Attachment A. Sample results qualified with a "J" on the analytical tables are considered approximate because of limitations identified during the CLP data validation. In addition, organic sample results reported at concentrations below quantitation limits, and confirmed by mass spectrometry, are also qualified by a "J" and considered approximate. All samples met data quality objectives as stated in the Task Work Plan dated April 1993.

Analytical results indicated the presence of several contaminants at levels exceeding three times the reference sample, including volatile organics, semivolatile organics, pesticides, PCBs, and several metals. A composite sample collected in the mercury film pack area (SS-01) indicated the presence of pyrene (520 ppb), PCB aroclor-1254 (at 660 ppb), benzo(b)fluoranthene (at 520 ppb), chromium (at 35 ppm), copper (at 34.2 ppm), mercury (at 22.6J ppm), nickel (at 91.3 ppm), and zinc (at 92.6 ppm). A sample collected from a suspected fly ash disposal area indicated the presence of toluene (at 880J ppb), bis(2-ethylhexyl) phthalate (at 7,200J ppb), barium (at 51.7 ppm), lead (at 122 ppm), and zinc (at 84.5 ppm). A sample collected from an oil stained area indicated the presence of benzo(b)fluoranthene (at 1,400J ppb), fluoranthene (at 520J ppb), pyrene (at 640 ppb), indeno(1,2,3-cd)pyrene (at 490J ppb), benzo(g,h,i)perylene (at 400 ppb), 4,4″-DDE (at 7.9J ppb), and PCB aroclor-1254 (at 110 ppb). Samples collected from three areas of leachate-stained soil indicated the presence of bis(2-ethylhexyl)phthalate (6,500J), di-n-octyl phthalate (at 1,600 ppb), toluene (at 19 ppb), PCB aroclor-1248 (at 36J ppb), 1,1-



NOT TO SCALE

Source: 1976 Radius Plan and 1991 Final Closure Plan

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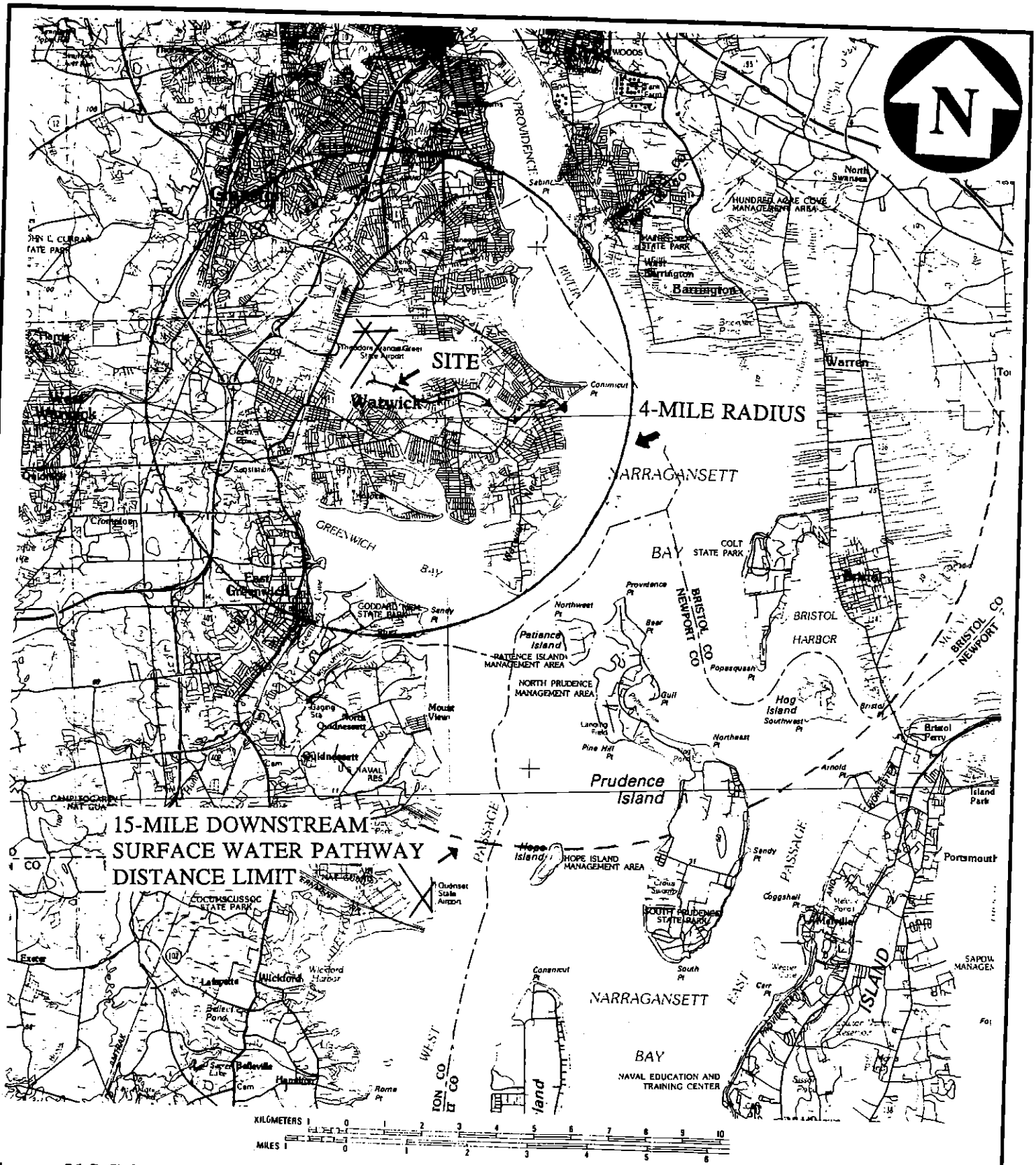
CDM SAMPLING LOCATIONS
TRUK-AWAY LANDFILL
WARWICK, RI

Figure 3



Source: U.S.G.S. 1984. Providence Quadrangle, R.I., MA, and CT. 30' x 60' series (topographic).

4 - MILE RADIUS
TRUK-AWAY LANDFILL
WARWICK, RHODE ISLAND

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Figure 4

dichloroethane (at 52J ppb), 1,2-dichloroethene (total) (at 25J ppb), barium (as high as 104 ppm), calcium (as high as 3,050 ppm), copper (as high as 30.5 ppm), iron (as high as 97,500J ppm), lead (as high as 51.7 ppm), nickel (as high as 61.9 ppm), silver (at 5.5 ppm), and zinc (as high as 394 ppm) [54].

TABLE 1

Sample Summary: Truk-Away Landfill
Source Samples Collected by CDM on May 11, 1993

Sample Location No.	Traffic Report #	Time (hrs)	Remarks	Sample Source
SS-01	AEC37(O) MABG71(I)	1715	Composite	Surface soil from area of mercury film packs on the southern end of the landfill.
SS-02	AEC31(O) MABG70(I)	1900	Grab	Surface soil from fly ash on northeast portion of the landfill.
SS-03	ADG78(O) MABG78(I)	1805	Grab	Surface soil from oily stained area near concrete building slabs.
SS-04	AEC36(O) MABG90(I)	1810	Grab	Duplicate of SS-03 for QC.
SS-05	AEC48(O) MABG97(I)	0840	Grab	Surface soil background sample; outside southern boundary, near trails.
LS-01	AEC33(O) MABG73(I)	1905	Grab	Soil/Sediment from leachate plume on eastern slope of landfill.
LS-02	AEC32(O) MABG72(I)	1830	Grab	Soil/Sediment from leachate plume on southeastern slope of landfill.
LS-03	AEC38(O) MABG98(I)	1758	Grab	Soil/sediment from leachate plume on southern slope of landfill.
LS-04	AEC35(O) MABG89(I)	1805	Grab	Duplicate of LS-03 for QC.

QC = quality control
O = organic
I = inorganic
[2]

TABLE 2

Summary of Organic Analytical Results
Source Sample Analysis for
Truk-Away Landfill

Sample Location No.	Compound/ Analyte	Concentration (µg/kg)	Reference Concentration (µg/kg)	Comments
SS-01 AEC37 MABG71	Pyrene	520	23J	22.7 x REF
	Aroclor-1254	660	36	18.3 x SQL
	Benzo(b)fluoranthene	520	29J	17.9 x REF
SS-02 AEC31 MABG70	Toluene	880J	8J	110 x REF
	Bis(2-ethylhexyl)phthalate	7200J	360	20 x SQL
SS-03 ADG78 MABG78	Benzo(b)fluoranthene	1400J	360	3.9 x SQL
	4,4'-DDE	7.9J	0.25J	31.6 x REF
	Aroclor-1254	110	37	3.1 x SQL
SS-04 AEC36 MABG90	Fluoranthene	520J	25J	20.8 x REF
	Pyrene	640	23J	27.8 x REF
	Benzo(b)flouranthene	1100J	29J	37.9 x REF
	Indeno(1,2,3-cd)pyrene	490J	360	1.4 x SQL
	Benzo(g,h,i)perylene	400J	360	1.1 x SQL
	4,4'-DDE	7.7J	0.25J	30.8 x REF
	Aroclor-1254	84J	36	2.3 x SQL
LS-01 AEC33 MABG90	Bis(2-ethylhexyl)phthalate	6500J	360	18.1 x SQL
	Di-n-octyl phthalate	1600	360	4.4 x SQL
LS-02 AEC32 MABG72	Toluene	19	8J	2.4 x REF
	Aroclor-1248	36J	36	1 x SQL
LS-04 AEC35	1,1-Dichloroethane	52J	11	4.7 x SQL
	1,2-Dichloroethene (total)	25J	11	2.3 x SQL

REF = Reference concentration.
J = Quantitation is approximate due to limitations identified during the quality control review.
µg/kg = Micrograms per kilogram (parts per billion).
[55]

TABLE 3

Summary of Inorganic Analytical Results
Source Sample Analysis for
Truk-Away Landfill

Sample Location No.	Compound/ Analyte	Concentration (mg/kg)	Reference Concentration (mg/kg)	Comments
SS-01 AEC37 MABG71	Chromium	35	6.7 UJ	5.2 x REF
	Copper	34.2	9.6	3.6 x REF
	Mercury	22.6J	0.06 UJ	376.7 x REF
	Nickel	91.3	8.4	10.9 x REF
	Zinc	92.6	25.7	3.6 x REF
SS-02 AEC31 MABG70	Barium	51.7	14.6	3.5 x REF
	Lead	122	10.3	11.8 x REF
	Zinc	84.5	25.7	3.3 x REF
LS-01 AEC33 MABG73	Barium	65.9	14.6	4.5 x REF
	Zinc	209	25.7	8.1 x REF
LS-02 AEC32 MABG72	Barium	104	14.6	7.1 x REF
	Calcium	176	575	3.1 x REF
	Iron	97,500 J	12,600 J	7.7 x REF
	Lead	51.7	10.3	5.0 x REF
	Nickel	61.9	8.4	7.4 x REF
	Silver	5.5	0.87	6.3 x SDL
	Zinc	336	25.7	13.7 x REF
LS-03 AEC38 MABG98	Barium	80.8	14.6	5.5 x REF
	Calcium	2640	575	4.6 x REF
	Lead	31.9	10.3	3.1 x REF
	Nickel	26.6	8.4	3.2 x REF
	Zinc	306	25.7	11.9 x REF
LS-04 AEC35 MABG89	Arsenic	15.1	5.0	3.0 x REF
	Barium	97.2	14.6	6.7 x REF
	Calcium	3050	575	5.3 x REF
	Copper	30.5	9.6	3.2 x REF
	Iron	59,000 J	12,600 J	4.7 x REF
	Nickel	34.7	8.4	4.1 x REF
	Zinc	394	25.7	15 x REF

REF = Reference concentration.
J = Quantitation is approximate due to limitations identified during the quality control review.
UJ = The reported quantitation limits are qualified estimated.
mg/kg = Milligrams per kilogram (parts per million).
[54]

GROUNDWATER PATHWAY

Truk-Away Landfill is located in the Seaboard Lowland section of the New England physiographic province. Geologic units north of Greenwich Bay consist of unconsolidated outwash deposits. The outwash body underlies an area of about 20 square miles that extends from Greenwich Bay on the south into the Providence quadrangle on the north and from the Providence River on the east to the upland on the west. The ice-contact deposits in the area are highly variable in lithologic character and consist of materials ranging from pebble, cobble, and boulder gravel to sand and minor amounts of silt. The groundwater north of Greenwich Bay is largely unconfined, and many of the ponds and streams are possibly surface outcrops of the water table. The groundwater moves generally west toward the Pawtucket and Providence Rivers or toward Greenwich Bay. Some water moves toward and discharges into the smaller brooks [35]. (See Figure 4: 4-Mile Radius.)

Surficial geology in the area is made up of outwash, medium to coarse grained sand and gravel interbedded with fine sand, silt, and clay; unconsolidated; generally well sorted and stratified. Bedrock at the landfill is made up of consolidated igneous, metamorphic and sedimentary rocks and is set approximately 70 feet below the surface [56]. Depth of groundwater ranges from 3 to 17 feet according to observations made in 1976 at seven test pits located at the landfill [36]. Drainage is in an easterly direction toward Buckeye Brook [56].

Groundwater beneath the landfill is classified by RIDEM as GB: groundwater sources which may not be suitable for public or private drinking water without treatment due to known or presumed degradation. The landfill is located approximately 1.25 miles west of groundwater classified as GA: groundwater sources which may be suitable for public or private drinking water sources [34,47]. There are no community drinking water wells and no wellhead protection areas located within 4 miles of the landfill. The Warwick Water Department supplies 26,000 active services (households) in Warwick with drinking water from the Scituate Reservoir. Kent County Water Authority supplies 24,000 service connections in Warwick with drinking water from the Scituate Reservoir and from groundwater. Kent County's drinking water supply wells are located in Coventry and East Greenwich [45,48,49]. There are no public groundwater supply sources within 4 miles of the Truk-Away Landfill. The nearest public drinking water well is located approximately 6 miles south of the property on the border of East Greenwich and North Kingston at the Hope River [45].

There are no records of private drinking water wells for the Warwick area. The Warwick Water Department indicated possible locations where groundwater may be used for drinking water. These areas include one residence on Payton Avenue (located approximately 2.25 miles east of the landfill), a private compound including five potential drinking water wells on Budlong Road (located approximately 2.3 miles northwest of the property), and five residences or businesses located on Bald Hill Road (located approximately 3.5 miles west of the property) [36]. The average number of persons per household in Warwick is 2.52 [51]. No groundwater samples were collected by CDM as part of this SIP.

TABLE 4

Estimated Drinking Water Populations Served by Groundwater Sources Within 4 Miles of Truk-Away

Radial Distance From Truk-Away Landfill (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Municipal Wells	Total Estimated Population Served by Groundwater Sources within the Ring
0.00 - 0.25	0	0	0
>0.25 - 0.50	0	0	0
>0.50 - 1.00	0	0	0
>1.00 - 2.00	0	0	0
>2.00 - 3.00	15	0	15
>3.00 - 4.00	13	0	13
TOTAL	28	0	28

[49]

SURFACE WATER PATHWAY

Drainage from the northwest section of the landfill flows overland north to a ponded section of Buckeye Brook which traverses the northern border of the property. In addition, groundwater appears to seep into this unnamed pond near the overland flow probable point of entry to the brook [2]. Wetlands surround the landfill to the north, east, and south and appear to drain toward Buckeye Brook. Several areas of the landfill itself are ponded and support wetland type plants, such as cattails and phragmites. Dark red and orange-stained soils, evidence of several leachate outbreaks, lead from the landfill's edges into the surrounding wetlands [2].

The 15-mile downstream surface water pathway includes Buckeye Brook, which travels east approximately 2.25 miles before its confluence with Old Mill Creek. Old Mill Creek then continues approximately 1 mile before entering Narragansett Bay. The remainder of the 15-mile pathway includes an 11.75-mile radial arc of Narragansett Bay [61,63].

The landfill is in a low lying area classified as a Mineral Swamp by the Rhode Island Department of Natural Resources [56]. On August 20, 1974, the Rhode Island Department of Natural Resources determined that an area immediately south of the landfill is a swamp of over 3 acres and is subject to the provisions of the Freshwater Wetlands Act [24]. On May 31, 1991, the RIDEM Division of Groundwater and Freshwater Wetlands determined that freshwater wetlands are present at the Truk-Away Landfill. An emergent community was identified adjacent to the roadway [52]. In addition, according to a 1973 National Wetlands Inventory Map, the following wetlands are located within the boundaries of the landfill: Palustrine, forested, broad-leaved deciduous; Palustrine emergent, and Palustrine open water. Palustrine scrub/shrub, broad-leaved deciduous and Palustrine, forested, broad-leaved deciduous wetlands are located along Buckeye Brook downstream of the probable point of entry [57].

In 1976, the Rhode Island Department of Natural Resources described the swamp located on the landfill as an important "refuge for what wildlife remains in the area. Elimination of this habitat will have a significant negative impact on local wildlife populations." The swamp is a part of Buckeye Brook and the Warwick Pond ecosystem which supports a major anadromous fish (alewife) run and forms an integral part of the Narragansett Bay ecosystem [22]. According to a 1974 letter from the RIDOH, herring make a spring run to Warwick Pond via Buckeye Brook [25]. Warwick Pond is located approximately 0.4 mile northeast of the probable point of entry [60].

Buckeye Brook is classified as a Class B waterway by RIDEM [56]. Class B includes the following water uses: public water supply with appropriate treatment, agricultural uses, bathing and other primary recreational activities, and fish and wildlife habitat [64]. The fresh/salt water boundary in Buckeye Brook is located at the West Shore Road bridge [33]. Old Mill Creek is a tidalwater and likely supports similar fish to the coastal waters of Narragansett Bay. Narragansett Bay supports flounder as well as shellfish [50]. Approximately 17,826,000 pounds of shellfish were caught in 1991 [33,44,50].

The State has designated two wildlife management areas in Narragansett Bay within the 15-mile downstream surface water pathway. Prudence Island Management Area is located 8.25 miles south of Old Mill Creek, and North Patience Island Management Area is located 7.75 miles south [60,61]. Both Prudence and North Patience Island Management Areas are considered critical habitats for species of special concern as well as Hog Island (located 6.25 miles from the mouth of Old Mill Creek) and Mill Gut (located just north of Colt State Park), approximately 3.8 miles from the mouth of Old Mill Creek [58,61].

TABLE 5

Water Bodies Within the Surface Water Segment of Truk-Away Landfill

Surface Water Body	Descriptor[a]	Length of Reach	Flow Characteristics (cfs)[b]	Length of Wetlands
Buckeye Brook	Minimal Stream	2.25 miles	< 10	0.75 mile
Old Mill Creek	Coastal Tidal Waters	1 mile	> 100	NA
Narragansett Bay	Deep Ocean Zone	11.75 miles	> 100	NA

[a] Minimal stream. Small to moderate stream. Moderate to large stream. Large stream to river. Very large river. Coastal tidal waters. Shallow ocean zone or Great Lake. Deep ocean zone or Great Lake. Three-mile mixing zone in quiet flowing river.
[b] Cubic feet per second.
[60,61]

In 1980, the RIDEM Division of Water Resources established a sampling program in the area of the Truk-Away Landfill which consisted of three stations located on Buckeye Brook at Warwick Avenue, Little Pond, and Brush Neck Cove at the western end of Canfield Avenue. Samples were collected three times during a five month period (October and December 1980 and February 1981) and were analyzed for heavy metals, trihalomethanes, aromatic solvents, halogenated volatiles, and total and fecal coliform. Results as of April 1981 indicated no concentrations above EPA Water Quality Criteria for drinking water. TCE was the only organic compound detected at 1 μg/L. Mercury was detected at 0.0014 mg/L, slightly above the recommended criteria for freshwater aquatic life. According to RIDEM's report, the bacteriological sample results indicated levels compatible with an urbanized drainage area [32].

On May 11, 1993, CDM collected seven sediment samples. Three samples were collected upstream of the property from areas presumed to be undisturbed by the landfill's operations. SD-06, collected immediately upstream of the landfill was used as the reference sample for Table 7 and Table 8. Figure 3 illustrates the approximate location of samples collected by CDM. Table 6 presents a summary of the surface water pathway samples collected by CDM. All samples were submitted for full organic, total metals, and cyanide analysis through CLP.

CDM was not able to collect a sample from Buckeye Brook downstream of the landfill due to lack of remaining daylight. This sample location, SD-05, is located off Rufus Road in Warwick, east of the landfill [2].

Table 7 and Table 8 are a summary of compounds and analyte detected through the CLP analysis of CDM sediment samples. For each sample location, a compound or element is listed if it is detected at three times or greater than the reference sample concentration. Compounds or elements which occur at a concentration three times or greater than the reference concentration (sample location SD-06) are designated by their approximate relative concentration above the reference value. If the element or compound is not detected in the reference sample, the SQL (for organic analyses) or SDL (for inorganic analyses) is used as a reference value. Accordingly, compounds or analytes are listed by their approximately concentration above the SQL or SDL only if they occur at a value equal to or greater than the reference sample's SQL or SDL.

The complete analytical results of the CDM sampling activities, including quantitation and detection limits are presented in Attachment A. Sample results qualified with a "J" on the analytical tables are considered approximate because of limitations identified during the CLP data validation. In addition, organic sample results reported at concentrations below quantitation limit and confirmed by mass spectrometry, are also qualified by a "J" and considered approximate.

TABLE 6
Sample Summary: Truk-Away Landfill
Surface Water Pathway Samples Collected by CDM on May 11, 1993

Sample Location No.	Traffic Report #	Time (hrs)	Remarks	Sample Source
SD-01	AEC28(O) MABG74(I)	2010	Grab	Sediment from pond at overland flow probable point of entry (PPE).
SD-02	AEC39(O) MABG79(I)	1915	Grab	Sediment from wetland downslope of leachate plume.
SD-03	AEC34(O) MABG88(I)	2000	Grab	Sediment at pond (previous area of PCB contamination).
SD-04	AEC29(O) MABG75(I)	2005	Grab	Duplicate of SD-03; for QC.
SD-05	--	-	Not collected	Sediment from Buckeye Brook near Rufus Road, not collected due to lack of daylight.
SD-06	AEC43(O) MABG94(I)	1020	Grab	Sediment background sample, upgradient of SD-03, just outside the landfill's boundaries.
SD-07	AEC44(O) MABG95(I)	1048	Grab	Sediment background sample, upgradient of illegal dumping area and upgradient of SD-06.
SD-08	AEC45(O) MABG96(I)	1132	Grab	Sediment background sample, upgradient of Leesona Corp. and upgradient of SD-07.

QC = quality control
O = organic
I = inorganic
[2]

TABLE 7

Summary of Organic Analytical Results
Sediment Sample Analysis for
Truk-Away Landfill

Sample Location No.	Compound/ Analyte	Concentration (µg/kg)	Reference Concentration (µg/kg)	Comments
SD-01 AEC28 MABG74	Phenanthrene	2900	460	6.3 x SQL
	Anthracene	790	460	1.7 x SQL
	Carbazole	480	460	1.0 x SQL
	Fluoranthene	4700	460	10.2 x SQL
	Pyrene	6400	460	13.9 x SQL
	Benzo(a)anthracene	2800	460	6.1 x SQL
	Chrysene	2600	460	5.7 x SQL
	Bis(2-ethylhexyl)phthalate	9900	460	21.5 x SQL
	Benzo(k)fluoranthene	4700	460	10.2 x SQL
	Benzo(a)pyrene	2800J	460	6.1 x SQL
	Indeno(1,2,3-cd)pyrene	2000J	460	4.3 x SQL
	Benzo(g,h,i)perylene	1900J	460	4.1 x SQL
	Aroclor 1260	84J	46	1.8 x SQL
SD-02 AEC39 MABG79	Fluoranthene	930J	460	2.0 x SQL
	Pyrene	950J	460	2.1 x SQL
	Benzo(a)anthracene	600	460	1.3 x SQL
	Benzo(b)fluoranthene	940J	460	2.0 x SQL
SD-03 AEC34 MABG88	Chloroethane	92	14	6.6 x SQL
	2-Butanone	15J	14	1.1 x SQL
	Chlorobenzene	32J	14	2.3 x SQL
	Acenapthene	570J	460	1.2 x SQL
	Fluorene	630J	460	1.4 x SQL
	Phenanthrene	4800	460	10.4 x SQL
	Anthracene	850	460	1.8 x SQL
	Fluoranthene	8000	460	17.4 x SQL
	Pyrene	10,000J	460	21.7 x SQL
	Benzo(a)anthracene	4700J	460	10.2 x SQL
	Chrysene	3800J	460	8.3 x SQL
	Bis(2-Ethylhexyl)phthalate	4100J	44J	93.2 x REF
	Benzo(b)fluoranthene	6300J	460	13.7 x SQL
	Benzo(a)pyrene	3100J	460	6.7 x SQL
	Indeno(1,2,3-cd)pyrene	2800J	460	6.1 x SQL
	Benzo(g,h,i)perylene	2200J	460	4.8 x SQL
	4,4'-DDE	5.8	4.6	1.3 x SQL

TABLE 7
(Continued)

Sample Location No.	Compound/ Analyte	Concentration (µg/kg)	Reference Concentration (µg/kg)	Comments
SD-03, cont.	Aroclor 1260	140J	46	3 x SQL
SD-04 AEC29 MABG75	Chloroethane	95	14	6.8 x SQL
	Chlorobenzene	55J	14	3.9 x SQL
	Styrene	24J	14	1.7 x SQL
	Phenanthrene	4100	460	8.9 x SQL
	Anthracene	880	460	1.9 x SQL
	Fluoranthene	9000	460	19.6 x SQL
	Pyrene	7900	460	17.2 x SQL
	Benzo(a)anthracene	4700	460	10.2 x SQL
	Chrysene	3700	460	8 x SQL
	Bis(2-ethylhexyl)phthalate	4700	44J	106.8 x REF
	Benzo(b)fluoranthene	6700	460	14.6 x SQL
	Benzo(a)pyrene	3400	460	7.4 x SQL
	Indeno(1,2,3-cd)pyrene	2400	460	5.2 x SQL
	Benzo(g,h,i)perylene	2000	460	4.3 x SQL
	4,4'- DDE	5.4J	4.6	1.2 x SQL

REF = Reference concentration.
J = Quantitation is approximate due to limitations identified during the quality control review.
µg/kg = Micrograms per kilogram (parts per billion).
[55]

TABLE 8

Summary of Inorganic Analytical Results
Sediment Sample Analysis for
Truk-Away Landfill

Sample Location No.	Compound/ Analyte	Concentration (mg/kg)	Reference Concentration (mg/kg)	Comments
SD-01 AEC28 MABG74	Lead	41.6	5	8.3 x REF
SD-02 AEC39 MABG99	Barium	116	20.9	5.6 x REF
	Calcium	3,270	940	3.5 x REF
	Iron	67,800 J	5,140 J	13.2 x REF
	Lead	25.7	5	5.1 x REF
	Zinc	148	45.1	3.3 x REF
SD-03 AEC34 MABG88	Arsenic	10.3	1.7	6.1 x REF
	Copper	55.7	7.8	7.1 x REF
	Iron	20,900 J	5,140 J	4.1 x REF
	Lead	106	5	21.2 x REF
	Mercury	0.27J	0.06 J	4.5 x REF
	Potassium	1,150 J	275 UJ	4.2 x REF
	Sodium	132	39.3 U	3.4 x REF
	Zinc	189	45.1	4.2 x REF
SD-04 AEC29 MABG75	Arsenic	8.7	1.7	5.1 x REF
	Copper	35.6	7.8	4.6 x REF
	Iron	16,100 J	5,140 J	3.1 x REF
	Lead	75.6	5	15.1 x REF
	Mercury	0.31 J	0.06 J	5.2 x REF
	Potassium	1,090 J	275 UJ	4.0 x REF
	Zinc	142	45.1	3.1 x REF

REF = Reference concentration.
J = Quantitation is approximate due to limitations identified during the quality control review.
mg/kg = Milligrams per kilogram (parts per million).
[54]

SOIL EXPOSURE PATHWAY

Entrance to the landfill is barred by a Jersey barrier; the landfill's perimeter is surrounded by an 8-foot chain-link fence topped with barbed wire. During the recon, CDM observed an approximately 25-foot section of fence that had been cut leaving a wide open space where worn paths indicated recreational dirt biking onsite. Well worn dirt trails lead an estimated 0.1 mile from the end of Bartlett Drive to the fence opening. The only workers within 200 feet of potential contamination are those working in the office park located at the former Leesona Corporation. Distance from the office park building to the landfill's western boundary is estimated at 100 feet [29,60]. The nearest offsite residence is located approximately 500 feet south of the landfill [13,29,59]. There are an estimated 701 people living within 1 mile of the landfill [13]. There are no schools or day-care centers within 200 feet of the landfill [2]. There are no terrestrial sensitive environments on the landfill [21].

During the recon, CDM observed exposed waste on the landfill including: medical waste, mercury film packs, paint cans, fly ash, household trash, and electrical waste [2]. CDM collected surface soil samples from the landfill and sediment samples from the unnamed pond and wetlands. Analytical results are in the Waste/Source Sampling section of this report and are summarized in Tables 2 and 3.

In eight surface soil samples collected from within 6 inches of the ground surface and in areas of prior waste disposal and leachate outbreaks, the maximum VOC contaminant detected was toluene at 880J ppb. The highest concentration of a semivolatile compound was bis(2-ethylhexyl)phthalate at 7,200J ppb. 4,4'-DDE, at 7.9J ppb, was the only pesticide detected onsite. PCB aroclor-1254 was detected at 110 ppb, the highest concentration of PCBs detected onsite. Of the inorganics, copper was detected at a maximum of 34.2 ppm, lead at a maximum of 122 ppm, mercury at a maximum of 22.6J ppm, nickel at a maximum of 91.3 ppm, silver at 5.5 ppm, zinc at 394 ppm, barium at a maximum of 104 ppm, and iron at a maximum of 97,500J ppm. Although many of these contaminants were detected in the reference sample taken off the landfill property the, above-mentioned contaminants were detected from 3 to 376 times greater than the reference concentrations (see Tables 2 and 3 and Figure 3) [54,55].

A larger number of volatile and semivolatile organics were detected in four sediment samples collected on the landfill property within 6 inches of the ground surface. The highest concentration of VOCs detected was chloroethane at 95 ppb. The highest concentration of semivolatile organic compounds was pyrene detected at 10,000J ppb. PCB aroclor-1260 was detected at a maximum of 140J ppb, and 4,4'-DDE was detected at 5.8 ppb. In the sediment samples, barium was detected at 116 ppm, calcium at 3,270 ppm, copper at 55.7 ppm, iron at 67,800J ppm, lead at 106 ppm, mercury at 0.31J ppm, potassium at 1,150J ppm, and zinc at 189 ppm. Bis(2-ethylhexyl)phthalate was the only organic contaminant detected in the reference sediment sample collected upstream of the landfill property. Although several inorganics were detected in the reference sample, the above-mentioned inorganic contaminants were detected in downstream sediment samples at concentrations from 3 to 21.2 times greater than the reference samples [54,55].

AIR PATHWAY

The nearest individuals to onsite source areas are workers in the office park located at the former Leesona Corporation. Distance from the building to the landfill's western boundary is estimated at 100 feet [29,59]. The nearest residents are located south of the property, approximately 500 feet from the landfill [13,29,59]. There are an estimated 701 people living within 1 mile of the landfill and an estimated 29,704 people living within 4 miles of the property by radial distance ring [13]. Worker population within 4 miles of the property includes: 230 employees at Jay Printing facility (Industrial Drive) and employees working in the office park located at the former Leesona Corporation [3,48]. The nearest school is the Lippitt School located in Warwick, approximately 0.5 mile south of the landfill. Approximately 383 students are enrolled at this school [43]. There are 240 students enrolled at Buttonwoods School located approximately 1 mile south of the landfill [42]. (See Table 9: Estimated Population Within 4 Miles of Truk-Away Landfill. Note: this table includes residents as well as students and workers identified above.)

TABLE 9

Estimated Population Within 4 Miles of Truk-Away Landfill

Radial Distance from Truk-Away Landfill (miles)	Estimated Population
0.00 - 0.25	37
>0.25 - 0.50	689
>0.50 - 1.00	848
>1.00 - 2.00	3,189
>2.00 - 3.00	6,450
>3.00 - 4.00	18,734
TOTAL	29,947

[13,42,43]

In July 1982, E&E used an HNu to monitor organics in air during leachate sampling. The HNu detected 50 to 150 ppm in air at leachate seeps on the western and eastern edges of the landfill [23]. CDM used an organic vapor monitor (OVM) to monitor ambient air during the March 1993 recon and May 1993 sampling event. No concentrations above background were detected [2].

The nearest sensitive environment to the landfill are the wetlands located along the northern, eastern, and southern boundaries of the property. Based on a 1976 plan of the property, at least 16 acres of wetlands surround the landfill [29].

SUMMARY AND CONCLUSIONS

The Truk-Away Landfill is located on Industrial Drive in Warwick, Rhode Island. The landfill accepted municipal and industrial wastes during its operations from 1970 to 1977. According to a landfill employee, hundreds of drums containing sulfur monochloride, benzyl chloride, xylol, toluene, pyridine, spent solvents, nitrobenzene, chlorobenzene, trichloroethylene, dyes, pigments, intermediate compounds made from benzene reactions, phenols, hydrogen peroxide, and benzene sulfonyl chloride were disposed of at this landfill.

During its operation, the landfill was the subject of several complaints, including roach and odor problems. In 1977, the landfill was sold to the Rhode Island Department of Transportation, Division of Airports and ceased operations due to the hazards posed to the nearby T.F. Green State Airport by sea gulls attracted to the landfill. The landfill has never been clean closed. Various types of waste are exposed throughout the landfill including medical waste, electrical waste, paint cans, mercury film packs, and fly ash. The landfill is accessible due to an opening in the fence. Dirt bike trails were noted during the 1993 CDM site reconnaissance.

There are no public or known private drinking water wells within a 4-mile radius of the landfill; although it is possible that there are groundwater wells serving private residences 2 to 3 miles from the landfill. Surface water from the landfill drains to Buckeye Brook. The probable point of entry (PPE) of surface water runoff to a perennially wet surface water body is at Buckeye Brook located on the northern boundary of the property. From the PPE, surface water flows east approximately 2.25 miles downstream before discharging to Old Mill Creek. Surface water continues to flow east approximately 1 mile before discharging into Narragansett Bay. Sensitive environments along the 15-mile downstream surface water pathway include Patience Island Management Area and North Prudence Island Management Area.

The nearest residence is located approximately 500 feet south of the landfill. There are no people living on or within 200 feet of an area of observed contamination. An estimated 701 people live within 1 mile of the landfill. Analytical results from surficial soil samples collected by CDM showed chromium, lead, mercury, polychlorinated biphenyls, toluene, and several semivolatile organic compounds to be present on the landfill.

The nearest individual to the landfill are workers at the office park located approximately 100 feet west of the landfill. There are an estimated 29,947 people who live, work, or attend school within 4 miles of the landfill. Sensitive environments within 4 miles of the landfill are wetlands associated with Buckeye Brook.

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ATTACHMENT A

TRUK-AWAY LANDFILL
SOIL AND SEDIMENT SAMPLE ANALYTICAL RESULTS
CDM SAMPLES COLLECTED MAY 11, 1993

Data Summary Key

A - Acceptable data.

J - The associated numerical value is an estimated quantity.

U - The compound was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

UJ - The compound was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

R - Reject data because quality control criteria were exceeded. The data are unusable (compound may or may not be present). Resampling and reanalysis is necessary for verification.

List of Organic Data Validation Acronyms

BNA	-	base/neutral/acids (also referred to as semivolatiles)
CAS	-	Chemical Abstracts Service
CC	-	continuing calibration
CRQL	-	contract required quantitation limit
CSF	-	Complete Sample Delivery Group File
CLP	-	Contract Laboratory Program
%D	-	percent difference
4,4'-DDD	-	dichlorodiphenyldichloroethane
4,4'-DDE	-	dichlorodiphenyldichloroethylene
4,4'-DDT	-	dichlorodiphenyltrichloroethane
DQO	-	Data Quality Objective form
EPA	-	Environmental Protection Agency
BHC	-	benzene hexachloride (alpha, beta, delta, gamma)
GC/MS	-	gas chromatography/mass spectrometry
GPC	-	gel permeation chromatography
IC	-	initial calibration
ID	-	identification number
IS	-	internal standard
ORDA	-	Organic Regional Data Assessment form
PCB	-	polychlorinated biphenyl
QC	-	quality control
RAS	-	Routine Analytical Services
RIC	-	reconstructed total ion chromatogram
RPD	-	relative percent difference
RSD	-	relative standard deviation
RT	-	retention time
SDG	-	Sample Delivery Group
SOW	-	Statement of Work for Organic Analysis
SV	-	semivolatile organic compounds
TCL	-	target compound list
TIC	-	tentatively identified compound
TR#	-	Traffic Report number
TR# DL	-	sample analyzed at a secondary dilution
TR# MS	-	matrix spike sample
TR# MSD	-	matrix spike duplicate sample
TR# RE	-	re-analyzed sample
ug/L	-	microgram per liter
ug/Kg	-	microgram per kilogram
VOA	-	volatile organic analysis
VOC	-	volatile organic compound

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973VA1.WK3

CLP VOLATILE ORGANIC ANALYSIS
CASE 19973, SDG AEC40
AQUEOUS ANALYTICAL RESULTS (ug/L)

Sample Location		TRUK-FB-01	TRUK-FB-02	TRUK-TB-100	TRUK-TB-200						
Traffic Report Number		AEC40	AEC41	AEC46	AEC47						
Remarks		Equip Blank	Equip Blank	Trip Blank	Trip Blank						
Sampling Date		05/11/93	05/11/93	05/11/93	05/11/93						
Analysis Date		05/13/93	05/13/93	05/19/93	05/19/93						
Dilution Factor		1.0	1.0	1.0	1.0						
VOLATILE ORGANIC COMPOUND	CRQL (ug/L)										
Chloromethane	10										
Bromomethane	10										
Vinyl Chloride	10										
Chloroethane	10										
Methylene Chloride	10										
Acetone	10										
Carbon Disulfide	10										
1,1-Dichloroethene	10										
1,1-Dichloroethane	10										
1,2-Dichloroethene(Total)	10										
Chloroform	10										
1,2-Dichloroethane	10										
2-Butanone	10										
1,1,1-Trichloroethane	10										
Carbon Tetrachloride	10										
Bromodichloromethane	10										
1,2-Dichloropropane	10										
cis-1,3-Dichloropropene	10										
Trichloroethene	10										
Dibromochloromethane	10										
1,1,2-Trichloroethane	10										
Benzene	10										
trans-1,3-Dichloropropene	10										
Bromoform	10										
4-Methyl-2-pentanone	10										
2-Hexanone	10										
Tetrachloroethene	10										
1,1,2,2-Tetrachloroethane	10										
Toluene	10										
Chlorobenzene	10										
Ethylbenzene	10										
Styrene	10										
Xylene (Total)	10										

" " - The blank space indicates that the compound was not detected.
CRQL- Contract Required Quanitation Limit

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SA1.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG AEC40
AQUEOUS ANALYTICAL RESULTS (ug/L)

Sample Location		TRUK-FB-01	TRUK-FB-02								
Traffic Report Number		AEC40	AEC41								
Remarks		Equip Blank	Equip Blank								
Sampling Date		05/11/93	05/11/93								
Extraction Date		05/13/93	05/13/93								
Analysis Date		06/04/93	06/04/93								
Dilution Factor		1.0	1.0								
SEMI-VOLATILE COMPOUND	CRQL (ug/L)										
Phenol	10										
bis (2-Chloroethyl) ether	10										
2-Chlorophenol	10										
1,3-Dichlorobenzene	10										
1,4-Dichlorobenzene	10										
1,2-Dichlorobenzene	10										
2-Methylphenol	10										
2,2'-oxybis(1-chloropropane)	10										
4-Methylphenol	10										
N-Nitroso-di-n-propylamine	10										
Hexachloroethane	10										
Nitrobenzene	10										
Isophorone	10										
2-Nitrophenol	10										
2,4-Dimethylphenol	10										
bis(2-Chloroethoxy)methane	10										
2,4-Dichlorophenol	10										
1,2,4-Trichlorobenzene	10										
Naphthalene	10										
4-Chloroaniline	10										
Hexachlorobutadiene	10										
4-Chloro-3-methylphenol	10										
2-Methylnaphthalene	10										
Hexachlorocyclopentadiene	10										
2,4,6-Trichlorophenol	10										
2,4,5-Trichlorophenol	25										
2-Chloronaphthalene	10										
2-Nitroaniline	25										
Dimethylphthalate	10										
Acenaphthylene	10										
2,6-Dinitrotoluene	10										

" " - Blank space indicates the compound was not detected.
CRQL - Contract Required Quantitation Limit

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG AEC40
AQUEOUS ANALYTICAL RESULTS (ug/L)

Sample Location		TRUK-FB-01	TRUK-FB-02								
Traffic Report Number		AEC40	AEC41								
Remarks		Equip Blank	Equip Blank								
Sampling Date		05/11/93	05/11/93								
Extraction Date		05/13/93	05/13/93								
Analysis Date		06/04/93	06/04/93								
Dilution Factor		1.0	1.0								
SEMI-VOLATILE COMPOUND	CRQL (ug/L)										
3-Nitroaniline	25										
Acenaphthene	10										
2,4-Dinitrophenol	25										
4-Nitrophenol	25										
Dibenzofuran	10										
2,4-Dinitrotoluene	10										
Diethylphthalate	10	1 J	1 J								
4-Chlorophenyl-phenylether	10										
Fluorene	10										
4-Nitroaniline	25										
4,6-Dinitro-2-methylphenol	25										
N-Nitrosodiphenylamine	10										
4-Bromophenyl-phenylether	10										
Hexachlorobenzene	10										
Pentachlorophenol	25										
Phenanthrene	10										
Anthracene	10										
Carbazole	10										
Di-n-butylphthalate	10	0.7 J	0.9 J								
Fluoranthene	10										
Pyrene	10										
Butylbenzylphthalate	10	0.6 J									
3,3'-Dichlorobenzidine	10										
Benzo(a)anthracene	10										
Chrysene	10										
bis(2-Ethylhexyl)phthalate	10										
Di-n-octyl phthalate	10	0.8 J									
Benzo(b)fluoranthene	10										
Benzo(k)fluoranthene	10										
Benzo(a)pyrene	10										
Indeno (1,2,3-cd)pyrene	10										
Dibenz(a,h)anthracene	10										
Benzo(g,h,i)perylene	10										

" " - The blank space indicates the compound was not detected.
CRQL - Contract Required Quantitation Limit

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973PA1.WK3

CLP PESTICIDE/PCB ORGANIC ANALYSIS
CASE 19973, SDG AEC40
AQUEOUS ANALYTICAL RESULTS (ug/L)

Sample Location		TRUK-FB-01	TRUK-FB-02								
Traffic Report Number		AEC40	AEC41								
Remarks		Equip Blank	Equip Blank								
Sampling Date		05/11/93	05/11/93								
Extraction Date		05/13/93	05/13/93								
Analysis Date		05/26/93	05/26/93								
Dilution Factor		1.0	1.0								
PESTICIDE/PCB COMPOUND	CRQL										
alpha-BHC	0.05	0.05 U	0.05 U								
beta-BHC	0.05	"									
gamma-BHC (Lindane)	0.05	"									
delta-BHC	0.05										
Heptachlor	0.05										
Aldrin	0.05										
Heptachlor epoxide	0.05										
Endosulfan I	0.05										
Dieldrin	0.05										
4,4'-DDE	0.10										
Endrin	0.10										
Endosulfan II	0.10										
4,4'-DDD	0.10										
Endosulfan sulfate	0.10										
4,4'-DDT	0.10										
Methoxychlor	0.50										
Endrin ketone	0.10										
Endrin aldehyde	0.10										
alpha-Chlordane	0.05										
gamma-Chlordane	0.05										
Toxaphene	5.0										
Aroclor-1016	1.0										
Aroclor-1221	2.0										
Aroclor-1232	1.0										
Aroclor-1242	1.0										
Aroclor-1248	1.0										
Aroclor-1254	1.0		0.14 J								
Aroclor-1260	1.0										

J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the sample quantitatio
" " - The blank space indicates the compound was not detected.
CRQL - Contract Required Detection Limit

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-04	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01
Traffic Report Number	ADG78	AEC28	AEC29	AEC31	AEC32	AEC33	AEC34	AEC35	AEC36	AEC37
Remarks			DUP AEC34					DUP AEC38	DUP ADG78	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Analysis Date	05/17/93	05/13/93	05/17/93	05/20/93	05/14/93	05/19/93	05/17/93	05/14/93	05/13/93	05/14/93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Percent Solids	85.0%	85.0%	49.0%	66.0%	87.0%	80.0%	58.0%	61.0%	90.0%	88.0%
VOLATILE ORGANIC COMPOUND										
Chloromethane										
Bromomethane										
Vinyl Chloride										
Chloroethane			95				92			
Methylene Chloride										
Acetone			26 U			12 U	36 U	17 U	11 U	
Carbon Disulfide										
1,1-Dichloroethene										
1,1-Dichloroethane								52 J		
1,2-Dichloroethene(Total)								25 J		
Chloroform										
1,2-Dichloroethane										
2-Butanone							15 J			
1,1,1-Trichloroethane										
Carbon Tetrachloride										
Vinyl Acetate										
Bromodichloromethane										
1,2-Dichloropropane										
cis-1,3-Dichloropropene										
Trichloroethene			20 U							
Dibromochloromethane										
1,1,2-Trichloroethane										
Benzene			27 U							
trans-1,3-Dichloropropene										
Bromoform										
4-Methyl-2-pentanone										
2-Hexanone										
Tetrachloroethene			20 U							
1,1,2,2-Tetrachloroethane										
Toluene			10 J	880 J	19					
Chlorobenzene	12 U		55 J				32 J			
Ethylbenzene										
Styrene			24 J				17 UJ			
Xylene (Total)										

Sample Results are reported on a dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was not detected. The associated numerical value is the sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
" " - The blank space indicates that the compound was not detected.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973VS2.WK3

CLP VOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL ANALYTICAL RESULTS (ug/Kg)

Sample Location	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SS-05				
Traffic Report Number	AEC38	AEC39	AEC43	AEC44	AEC45	AEC48				
Remarks										
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93				
Analysis Date	05/13/93	05/14/93	05/14/93	05/17/93	05/14/93	05/14/93				
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0				
Percent Solids	63.0%	67.0%	72.0%	62.0%	70.0%	92.0%				
VOLATILE ORGANIC COMPOUND										
Chloromethane										
Bromomethane										
Vinyl Chloride										
Chloroethane										
Methylene Chloride										
Acetone	27 U		14 U	33 U	26 U					
Carbon Disulfide										
1,1-Dichloroethene										
1,1-Dichloroethane	18 J									
1,2-Dichloroethene(Total)	16 UJ									
Chloroform										
1,2-Dichloroethane										
2-Butanone				12 J						
1,1,1-Trichloroethane										
Carbon Tetrachloride										
Vinyl Acetate										
Bromodichloromethane										
1,2-Dichloropropane										
cis-1,3-Dichloropropene										
Trichloroethene										
Dibromochloromethane										
1,1,2-Trichloroethane										
Benzene				16 U						
trans-1,3-Dichloropropene										
Bromoform										
4-Methyl-2-pentanone										
2-Hexanone										
Tetrachloroethene				16 U						
1,1,2,2-Tetrachloroethane										
Toluene				29		8 J				
Chlorobenzene										
Ethylbenzene										
Styrene										
Xylene (Total)										

Sample Results are reported on a dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was not detected. The associated numerical value is the sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
" " - The blank space indicates that the compound was not detected.

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-01	TRUK-SD-04	TRUK-SD-04	TRUK-SS-02	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-LS-01	TRUK-SD-03
Traffic Report Number	ADG78	AEC28	AEC28DL	AEC29	AEC29DL	AEC31	AEC31DL	AEC32	AEC33	AEC33DL	AEC34
Remarks			Dilution	DUP AEC34	Dilution		Dilution			Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/07/93	06/07/93	06/07/93	06/08/93	06/07/93	06/07/93	06/04/93	06/04/93	06/07/93	06/07/93
Dilution Factor	1.0	1.0	4.0	1.0	2.0	1.0	3.0	1.0	1.0	2.0	1.0
Percent Solid	85.0%	85.0%	85.0%	49.0%	49.0%	66.0%	66.0%	87.0%	80.0%	80.0%	58.0%
SEMI-VOLATILE COMPOUND											
Phenol		390 UJ		670 UJ							
bis (2-Chloroethyl) ether		390 UJ		670 UJ							
2-Chlorophenol		390 UJ		670 UJ							
1,3-Dichlorobenzene		390 UJ		670 UJ							
1,4-Dichlorobenzene		390 UJ		670 UJ							
1,2-Dichlorobenzene		390 UJ		670 UJ							
2-Methylphenol		390 UJ		670 UJ							
2,2'-oxybis(1-chloropropane)		390 UJ		670 UJ							
4-Methylphenol		390 UJ		670 UJ							
N-Nitroso-di-n-propylamine		390 UJ		670 UJ							
Hexachloroethane		390 UJ		670 UJ							
Nitrobenzene				670 UJ							
Isophorone				670 UJ							
2-Nitrophenol				670 UJ							
2,4-Dimethylphenol				670 UJ							
bis (2-Chloroethoxy) methane				670 UJ							
2,4-Dichlorophenol				670 UJ							
1,2,4-Trichlorobenzene				670 UJ							
Naphthalene	35 J	150 J	160 J	160 J	170 J	65 J	74 J				280
4-Chloroaniline				670 UJ							
Hexachlorobutadiene				670 UJ							
4-Chloro-3-methylphenol				670 UJ							
2-Methylnaphthalene		78 J		76 J	87 J	51 J					84 J
Hexachlorocyclopentadiene											
2,4,6-Trichlorophenol											
2,4,5-Trichlorophenol											
2-Chloronaphthalene											
2-Nitroaniline											
Dimethylphthalate											
Acenaphthylene	21 J	40 J		75 J							
2,6-Dinitrotoluene											

Sample results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
" " - The blank space indicates the compound was not detected.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SS2.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-01	TRUK-SD-04	TRUK-SD-04	TRUK-SS-02	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-LS-01	TRUK-SD-03
Traffic Report Number	ADG78	AEC28	AEC28DL	AEC29	AEC29DL	AEC31	AEC31DL	AEC32	AEC33	AEC33DL	AEC34
Remarks			Dilution	DUP AEC34	Dilution		Dilution			Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/07/93	06/07/93	06/07/93	06/08/93	06/07/93	06/07/93	06/04/93	06/04/93	06/07/93	06/07/93
Dilution Factor	1.0	1.0	4.0	1.0	2.0	1.0	3.0	1.0	1.0	2.0	1.0
Percent Solid	85.0%	85.0%	85.0%	49.0%	49.0%	66.0%	66.0%	87.0%	80.0%	80.0%	58.0%
SEMI-VOLATILE COMPOUND											
3-Nitroaniline											
Acenaphthene	57 J	430	500 J	360 J	210 J						520 J
2,4-Dinitrophenol											
4-Nitrophenol											
Dibenzofuran	27 J	210 J	220 J	240 J	230 J	22 J					250 J
2,4-Dinitrotoluene											
Diethylphthalate				670 U	1300 U	500 U					570 U
4-Chlorophenyl-phenylether											
Fluorene	39 J	330 J	360 J	200 J	210 J						710 J
4-Nitroaniline											
4,6-Dinitro-2-methylphenol											
n-Nitrosodiphenylamine											
4-Bromophenyl-phenylether											
Hexachlorobenzene											
Pentachlorophenol											
Phenanthrene	480 J	3800 E	2900	4100	4100	72 J	88 J		22 J		5700 E
Anthracene	130 J	790	960 J	880	790 J	43 J					850
Carbazole		480	170 J	450 J	560 J						660
Di-n-butylphthalate						500 U	1500 U	380 U			570
Fluoranthene	890 J	6000 E	4700	8600 E	9000	150 J	160 J	94 J	37 J		9100
Pyrene	1000	6300 E	6400	9500 E	7900	220 J	230 J	58 J	35 J	44 J	11000 E
Butylbenzylphthalate						500 U	1500 UJ			820 UJ	
3,3'-Dichlorobenzidine							1500 UJ			820 UJ	
Benzo(a)anthracene	560	2800	3400	4700	4600	100 J	160 J			820 UJ	5700 E
Chrysene	450	2600	2400	3700	4000	98 J	1500 UJ			820 UJ	3300
bis(2-Ethylhexyl)phthalate	160 J	9100 E	9900	4700	3800	7100 E	7200 J	71 J	5000 E	6500 J	4000
Di-n-octyl phthalate	390 UJ	390 UJ	1600 UJ			500 UJ	1500 UJ		1600	2300 J	570 UJ
Benzo(b)fluoranthene	1400 J	6100 E	4700 J	8000 E	6700	130 J	280 J	48 J	55 J	820 UJ	8000 E
Benzo(k)fluoranthene	390 UJ	390 UJ	1600 UJ			120 J	1500 UJ	83 J		820 UJ	570 UJ
Benzo(a)pyrene	420 J	2800 J	2900 J	3400	2700	38 J	1500 UJ	26 J		820 UJ	3200 J
Indeno (1,2,3-cd)pyrene	730 J	2000 J	1600 J	2400	1900	500 UJ	1500 UJ			820 UJ	2300 J
Dibenz(a,h)anthracene	190 J	390 UJ	570 J		870 J	500 UJ	1500 UJ			820 UJ	570 UJ
Benzo(g,h,i)perylene	490 J	1900 J	1400 J	2000	1800	500 UJ	1500 UJ			820 UJ	2000 J

Sample results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contaminations. The associated numerical value is the sample quantitati
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
E - The compound concentration exceeded the calibration range.
" " - The blank space indicates the compound was not detected.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SS3.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-08	TRUK-SS-05
Traffic Report Number	AEC34DL	AEC35	AEC36	AEC37	AEC38	AEC39	AEC43	AEC44	AEC45	AEC45DL	AEC48
Remarks	Dilution	DUP AEC38								Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/05/93	06/06/93	06/08/93	06/06/93	06/06/93	06/05/93	06/06/93	06/06/93	06/07/93	06/05/93
Dilution Factor	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	15.0	1.0
Percent Solid	58.0%	61.0%	90.0%	88.0%	63.0%	67.0%	72.0%	62.0%	70.0%	70.0%	92.0%
SEMI-VOLATILE COMPOUND											
Phenol											
bis (2-Chloroethyl) ether											
2-Chlorophenol											
1,3-Dichlorobenzene											
1,4-Dichlorobenzene											
1,2-Dichlorobenzene											
2-Methylphenol											
2,2'-oxybis(1-chloropropane)											
4-Methylphenol											
N-Nitroso-di-n-propylamine											
Hexachloroethane											
Nitrobenzene											
Isophorone											
2-Nitrophenol											
2,4-Dimethylphenol											
bis (2-Chloroethoxy) methane											
2,4-Dichlorophenol											
1,2,4-Trichlorobenzene											
Naphthalene	300 J					21 J		23 J			
4-Chloroaniline											
Hexachlorobutadiene											
4-Chloro-3-methylphenol											
2-Methylnaphthalene	120 J										
Hexachlorocyclopentadiene											
2,4,6-Trichlorophenol											
2,4,5-Trichlorophenol											
2-Chloronaphthalene											
2-Nitroaniline											
Dimethylphthalate											
Acenaphthylene			17 J			53 J					
2,6-Dinitrotoluene											

Sample results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
" " - The blank space indicates the compound was not detected.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SS4.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-08	TRUK-SS-05
Traffic Report Number	AEC34DL	AEC35	AEC36	AEC37	AEC38	AEC39	AEC43	AEC44	AEC45	AEC45DL	AEC48
Remarks	Dilution	DUP AEC38								Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/05/93	06/06/93	06/08/93	06/06/93	06/06/93	06/05/93	06/06/93	06/06/93	06/07/93	06/05/93
Dilution Factor	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	15.0	1.0
Percent Solid	58.0%	61.0%	90.0%	88.0%	63.0%	67.0%	72.0%	62.0%	70.0%	70.0%	90.0%
SEMI-VOLATILE COMPOUND											
3-Nitroaniline											
Acenaphthene	570 J		24 J								
2,4-Dinitrophenol											
4-Nitrophenol											
Dibenzofuran	410 J										
2,4-Dinitrotoluene											
Diethylphthalate		540 UJ		380 U	520 U	490 U					
4-Chlorophenyl-phenylether											
Fluorene	630 J		21 J								
4-Nitroaniline											
4,6-Dinitro-2-methylphenol											
n-Nitrosodiphenylamine											
4-Bromophenyl-phenylether											
Hexachlorobenzene											
Pentachlorophenol											
Phenanthrene	4800	23 J	290 J	120 J		260 J		100 J	180 J		19 J
Anthracene	850 J		88 J			100 J					
Carbazole	160 J		33 J								
Di-n-butylphthalate			370 U	380 U	520 U	490 U		530 U			
Fluoranthene	8000	44 J	520 J	360 J	41 J	930 J		140 J	270 J		25 J
Pyrene	10000 J	22 J	640	520	50 J	950 J		140 J	270 J	7100 UJ	23 J
Butylbenzylphthalate	1700 UJ									7100 UJ	
3,3'-Dichlorobenzidine	1700 UJ									7100 UJ	
Benzo(a)anthracene	4700 J	35 J	350 J	310 J		600		63 J	140 J	7100 UJ	
Chrysene	3800 J		320 J	360 J		300 J		62 J	120 J	7100 UJ	
bis(2-Ethylhexyl)phthalate	4100 J	48 J	140 J	150 J	90 J	190 J	44 J	240 J	42000 E	48000 J	
Di-n-octyl phthalate	1700 UJ		370 UJ		520 UJ	490 UJ			470 UJ	7100 UJ	
Benzo(b)fluoranthene	6300 J	86 J	1100 J	520	520 UJ	940 J		120 J	340 J	7100 UJ	29 J
Benzo(k)fluoranthene	1700 UJ		370 UJ		520 UJ	490 UJ			470 UJ	7100 UJ	
Benzo(a)pyrene	3100 J		330 J	130 J	520 UJ	280 J			100 J	7100 UJ	
Indeno (1,2,3-cd)pyrene	2800 J		490 J	110 J	520 UJ	170 J			94 J	7100 UJ	
Dibenz(a,h)anthracene	1700 UJ		150 J		520 UJ	490 UJ			470 UJ	7100 UJ	
Benzo(g,h,i)perylene	2200 J		400 J	120 J	520 UJ	170 J			98 J	7100 UJ	

Sample results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contaminations. The associated numerical value is the sample quantitati
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
E - The compound concentration exceeded the calibration range.
" " - The blank space indicates the compound was not detected.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973PS1.WK3

CLP PESTICIDE/PCB ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL ANALYTICAL RESULTS (ug/kg)

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-04	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01
Traffic Report Number	ADG78	AEC28	AEC29	AEC31	AEC32	AEC33	AEC34	AEC35	AEC36	AEC37
Remarks			DUP AEC34					DUP AEC38	DUP ADG78	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/05/93	06/05/93	06/05/93	06/04/93	06/04/93	06/04/93	06/05/93	06/04/93	06/05/93	06/05/93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Percent Solid	85.0%	85.0%	49.0%	66.0%	87.0%	80.0%	58.0%	61.0%	90.0%	88.0%
PESTICIDE/PCB COMPOUND										
alpha-BHC				2.6 UJ						1.9 U
beta-BHC				2.6 UJ						
gamma-BHC (Lindane)				2.6 UJ						
delta-BHC		2.0 U	1.1 J	0.34 J			2.9 U			
Heptachlor		2.0 U	3.5 U	2.6 UJ						
Aldrin		2.0 U		2.6 UJ						
Heptachlor epoxide		2.0 U		2.6 UJ						
Endosulfan I				2.6 UJ	2.0 U					1.9 U
Dieldrin		3.9 U		5.0 UJ				0.44 J		
4,4'-DDE	7.9 J	2.2 J	5.4 J	0.55 J	3.8 U	2.0 J	5.8	5.4 U	7.7 J	
Endrin	R	R	R	5.0 UJ	3.8 U	0.2 J	R	5.4 U	5.0 UJ	
Endosulfan II		3.9 U	1.4 J	5.0 UJ	3.8 U	0.22 J	5.7 U			
4,4'-DDD	3.9 U	3.9 U	6.7 U	5.0 UJ		4.1 U	5.7 U	5.4 U	3.7 U	3.8 U
Endosulfan sulfate				5.0 UJ						3.8 U
4,4'-DDT	3.9 U			5.0 UJ	3.8 U	4.1 U		5.4 U	3.7 U	
Methoxychlor			35 U	1 J			29 U			
Endrin ketone				5.0 UJ		4.1 U				
Endrin aldehyde				5.0 UJ						
alpha-Chlordane	R	R		2.6 UJ			2.9 U		1.9 U	
gamma-Chlordane	R	R	5.3 UJ	2.6 UJ	2.0 U	2.1 U	R	1.3 J	R	
Toxaphene				260 UJ						
Aroclor-1016				50 UJ						
Aroclor-1221				100 UJ						
Aroclor-1232				50 UJ						
Aroclor-1242				50 UJ						
Aroclor-1248				30 J	36 J			23 J		
Aroclor-1254	110		200 UJ	50 UJ			57 UJ		89 J	430 E
Aroclor-1260		84 J	67 UJ	50 UJ			140 J			

Sample results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the sample quantitation li
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
E - The compound concentration exceeded the calibration range.
" " - The blank space indicates the compound was not detected.

Sample Location	TRUK-SS-01	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SS-05			
Traffic Report Number	AEC37DL	AEC38	AEC39	AEC43	AEC44	AEC45	AEC48			
Remarks	Dilution									
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93			
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93			
Analysis Date	06/05/93	06/05/93	06/04/93	06/05/93	06/05/93	06/05/93	06/04/93			
Dilution Factor	10.0	1.0	1.0	1.0	1.0	1.0	1.0			
Percent Solid	88.0%	63.0%	67.0%	72.0%	62.0%	70.0%	92.0%			
PESTICIDE/PCB COMPOUND										
alpha-BHC		2.7 U		2.4 U	2.7 U		1.8 U			
beta-BHC										
gamma-BHC (Lindane)										
delta-BHC	19 U									
Heptachlor					2.7 U					
Aldrin										
Heptachlor epoxide										
Endosulfan I	19 U									
Dieldrin		5.2 U	4.9 U				3.6 U			
4,4'-DDE	38 U	5.2 U	4.9 U			3.0 J	0.25 J			
Endrin	3.3 J		4.9 U			4.7 U	3.6 U			
Endosulfan II		5.2 U	4.9 U			4.7 U	3.6 U			
4,4'-DDD		5.2 U			5.3 U	1.3 J				
Endosulfan sulfate					5.3 U					
4,4'-DDT	38 U	5.2 U			5.3 U	4.7 U	3.6 U			
Methoxychlor							18 U			
Endrin ketone					5.3 U					
Endrin aldehyde										
alpha-Chlordane			2.5 U			2.4 U				
gamma-Chlordane		2.7 U	1.3 J		2.7 U	2.4 U	1.8 U			
Toxaphene										
Aroclor-1016										
Aroclor-1221										
Aroclor-1232										
Aroclor-1242										
Aroclor-1248		32 J	20 J							
Aroclor-1254	660				200					
Aroclor-1260										

Sample results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the sample quantitation li
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
" " - The blank space indicates the compound was not detected.

TABLE IV

Sample Quantitation Limits

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973VQ1.WK3

CLP VOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/Kg)

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-04	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01
Traffic Report Number	ADG78	AEC28	AEC29	AEC31	AEC32	AEC33	AEC34	AEC35	AEC36	AEC37
Remarks			DUP AEC34					DUP AEC38	DUP ADG78	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Analysis Date	05/17/93	05/13/93	05/17/93	05/20/93	05/14/93	05/19/93	05/17/93	05/14/93	05/13/93	05/14/93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Percent Solids	85.0%	85.0%	49.0%	66.0%	87.0%	80.0%	58.0%	61.0%	90.0%	88.0%
VOLATILE ORGANIC COMPOUND										
Chloromethane	12	12	20	1880	11	12	17	16	11	11
Bromomethane	12	12	20	1880	11	12	17	16	11	11
Vinyl Chloride	12	12	20	1880	11	12	17	16	11	11
Chloroethane	12	12	20	1880	11	12	17	16	11	11
Methylene Chloride	12	12	20	1880	11	12	17	16	11	11
Acetone	12	12	26 U	1880	11	12 U	36 U	17 U	11 U	11
Carbon Disulfide	12	12	20	1880	11	12	17	16	11	11
1,1-Dichloroethene	12	12	20	1880	11	12	17	16	11	11
1,1-Dichloroethane	12	12	20	1880	11	12	17	16	11	11
1,2-Dichloroethene (Total)	12	12	20	1880	11	12	17	16	11	11
Chloroform	12	12	20	1880	11	12	17	16	11	11
1,2-Dichloroethane	12	12	20	1880	11	12	17	16	11	11
2-Butanone	12	12	20	1880	11	12	17	16	11	11
1,1,1-Trichloroethane	12	12	20	1880	11	12	17	16	11	11
Carbon Tetrachloride	12	12	20	1880	11	12	17	16	11	11
Vinyl Acetate	12	12	20	1880	11	12	17	16	11	11
Bromodichloromethane	12	12	20	1880	11	12	17	16	11	11
1,2-Dichloropropane	12	12	20	1880	11	12	17	16	11	11
cis-1,3-Dichloropropene	12	12	20	1880	11	12	17	16	11	11
Trichloroethene	12	12	20 U	1880	11	12	17	16	11	11
Dibromochloromethane	12	12	20	1880	11	12	17	16	11	11
1,1,2-Trichloroethane	12	12	20	1880	11	12	17	16	11	11
Benzene	12	12	27 U	1880	11	12	17	16	11	11
trans-1,3-Dichloropropene	12	12	20	1880	11	12	17	16	11	11
Bromoform	12	12	20	1880	11	12	17	16	11	11
4-Methyl-2-pentanone	12	12	20	1880	11	12	17	16	11	11
2-Hexanone	12	12	20	1880	11	12	17	16	11	11
Tetrachloroethene	12	12	20 U	1880	11	12	17	16	11	11
1,1,2,2-Tetrachloroethane	12	12	20	1880	11	12	17	16	11	11
Toluene	12	12	20	1880	11	12	17	16	11	11
Chlorobenzene	12 U	12	20	1880	11	12	17	16	11	11
Ethylbenzene	12	12	20	1880	11	12	17	16	11	11
Styrene	12	12	20	1880	11	12	17	16	11	11
Xylene (Total)	12	12	20	1880	11	12	17 UJ	16	11	11
							17	16	11	11

Sample quantitation limits are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was not detected. The associated numerical value is the sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973VQ2.WK3

CLP VOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/Kg)

Sample Location	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SS-05				
Traffic Report Number	AEC38	AEC39	AEC43	AEC44	AEC45	AEC48				
Remarks										
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93				
Analysis Date	05/13/93	05/14/93	05/14/93	05/17/93	05/14/93	05/14/93				
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0				
Percent Solids	63.0%	67.0%	72.0%	62.0%	70.0%	92.0%				
VOLATILE ORGANIC COMPOUND										
Chloromethane	16	15	14	16	14	11				
Bromomethane	16	15	14	16	14	11				
Vinyl Chloride	16	15	14	16	14	11				
Chloroethane	16	15	14	16	14	11				
Methylene Chloride	16	15	14	16	14	11				
Acetone	27 U	15	14 U	33 U	26 U	11				
Carbon Disulfide	16	15	14	16	14	11				
1,1-Dichloroethene	16	15	14	16	14	11				
1,1-Dichloroethane	16	15	14	16	14	11				
1,2-Dichloroethene (Total)	16 UJ	15	14	16	14	11				
Chloroform	16	15	14	16	14	11				
1,2-Dichloroethane	16	15	14	16	14	11				
2-Butanone	16	15	14	16	14	11				
1,1,1-Trichloroethane	16	15	14	16	14	11				
Carbon Tetrachloride	16	15	14	16	14	11				
Vinyl Acetate	16	15	14	16	14	11				
Bromodichloromethane	16	15	14	16	14	11				
1,2-Dichloropropane	16	15	14	16	14	11				
cis-1,3-Dichloropropene	16	15	14	16	14	11				
Trichloroethene	16	15	14	16	14	11				
Dibromochloromethane	16	15	14	16	14	11				
1,1,2-Trichloroethane	16	15	14	16	14	11				
Benzene	16	15	14	16 U	14	11				
trans-1,3-Dichloropropene	16	15	14	16	14	11				
Bromoform	16	15	14	16	14	11				
4-Methyl-2-pentanone	16	15	14	16	14	11				
2-Hexanone	16	15	14	16	14	11				
Tetrachloroethene	16	15	14	16 U	14	11				
1,1,2,2-Tetrachloroethane	16	15	14	16	14	11				
Toluene	16	15	14	16	14	11				
Chlorobenzene	16	15	14	16	14	11				
Ethylbenzene	16	15	14	16	14	11				
Styrene	16	15	14	16	14	11				
Xylene (Total)	16	15	14	16	14	11				

Sample quantitation limits are reported on dry weight basis.
U - The compound was not detected. The associated numerical value is the sample quantitation limit.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SQ1.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-01	TRUK-SD-04	TRUK-SD-04	TRUK-SS-02	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-LS-01	TRUK-SD-03
Traffic Report Number	ADG78	AEC28	AEC28DL	AEC29	AEC29DL	AEC31	AEC31DL	AEC32	AEC33	AEC33DL	AEC34
Remarks			Dilution	DUP AEC34	Dilution		Dilution			Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/07/93	06/07/93	06/07/93	06/08/93	06/07/93	06/07/93	06/04/93	06/04/93	06/07/93	06/07/93
Dilution Factor	1.0	1.0	4.0	1.0	2.0	1.0	3.0	1.0	1.0	2.0	1.0
Percent Solid	85.0%	85.0%	85.0%	49.0%	49.0%	66.0%	66.0%	87.0%	80.0%	80.0%	58.0%
SEMI-VOLATILE COMPOUND											
Phenol	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
bis (2-Chloroethyl) ether	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
2-Chlorophenol	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
1,3-Dichlorobenzene	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
1,4-Dichlorobenzene	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
1,2-Dichlorobenzene	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
2-Methylphenol	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
2,2'-oxybis(1-chloropropane)	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
4-Methylphenol	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
N-Nitroso-di-n-propylamine	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
Hexachloroethane	390	390 UJ	1600	670 UJ	1300	500	1500	380	410	820	570
Nitrobenzene	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
Isophorone	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
2-Nitrophenol	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
2,4-Dimethylphenol	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
bis (2-Chloroethoxy) methane	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
2,4-Dichlorophenol	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
1,2,4-Trichlorobenzene	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
Naphthalene	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
4-Chloroaniline	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
Hexachlorobutadiene	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
4-Chloro-3-methylphenol	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
2-Methylnaphthalene	390	390	1600	670 UJ	1300	500	1500	380	410	820	570
Hexachlorocyclopentadiene	390	390	1600	670	1300	500	1500	380	410	820	570
2,4,6-Trichlorophenol	390	390	1600	670	1300	500	1500	380	410	820	570
2,4,5-Trichlorophenol	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
2-Chloronaphthalene	390	390	1600	670	1300	500	1500	380	410	820	570
2-Nitroaniline	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
Dimethylphthalate	390	390	1600	670	1300	500	1500	380	410	820	570
Acenaphthylene	390	390	1600	670	1300	500	1500	380	410	820	570
2,6-Dinitrotoluene	390	390	1600	670	1300	500	1500	380	410	820	570

Sample quantitation limits are reported on dry weight basis.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SQ2.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-01	TRUK-SD-04	TRUK-SD-04	TRUK-SS-02	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-LS-01	TRUK-SD-03
Traffic Report Number	ADG78	AEC28	AEC28DL	AEC29	AEC29DL	AEC31	AEC31DL	AEC32	AEC33	AEC33DL	AEC34
Remarks			Dilution	DUP AEC34	Dilution		Dilution			Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/07/93	06/07/93	06/07/93	06/08/93	06/07/93	06/07/93	06/04/93	06/04/93	06/07/93	06/07/93
Dilution Factor	1.0	1.0	4.0	1.0	2.0	1.0	3.0	1.0	1.0	2.0	1.(
Percent Solid	85.0%	85.0%	85.0%	49.0%	49.0%	66.0%	66.0%	87.0%	80.0%	80.0%	58.0%
SEMIVOLATILE COMPOUND											
3-Nitroaniline	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
Acenaphthene	390	390	1600	670	1300	500	1500	380	410	820	570
2,4-Dinitrophenol	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
4-Nitrophenol	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
Dibenzofuran	390	390	1600	670	1300	500	1500	380	410	820	570
2,4-Dinitrotoluene	390	390	1600	670	1300	500	1500	380	410	820	570
Diethylphthalate	390	390	1600	670 U	1300 U	500 U	1500	380	410	820	570 U
4-Chlorophenyl-phenylether	390	390	1600	670	1300	500	1500	380	410	820	570
Fluorene	390	390	1600	670	1300	500	1500	380	410	820	570
4-Nitroaniline	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
4,6-Dinitro-2-methylphenol	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
n-Nitrosodiphenylamine	390	390	1600	670	1300	500	1500	380	410	820	570
4-Bromophenyl-phenylether	390	390	1600	670	1300	500	1500	380	410	820	570
Hexachlorobenzene	390	390	1600	670	1300	500	1500	380	410	820	570
Pentachlorophenol	940	940	3800	1600	3300	1200	3600	920	1000	2000	1400
Phenanthrene	390	390	1600	670	1300	500	1500	380	410	820	570
Anthracene	390	390	1600	670	1300	500	1500	380	410	820	570
Carbazole	390	390	1600	670	1300	500	1500	380	410	820	570
Di-n-butylphthalate	390	390	1600	670	1300	500 U	1500 U	380 U	410	820	57(
Fluoranthene	390	390	1600	670	1300	500	1500	380	410	820	570
Pyrene	390	390	1600	670	1300	500	1500 UJ	380	410	820 UJ	570
Butylbenzylphthalate	390	390	1600	670	1300	500 U	1500 UJ	380	410	820 UJ	570
3,3'-Dichlorobenzidine	390	390	1600	670	1300	500	1500 UJ	380	410	820 UJ	570
Benzo(a)anthracene	390	390	1600	670	1300	500	1500 UJ	380	410	820 UJ	570
Chrysene	390	390	1600	670	1300	500	1500 UJ	380	410	820 UJ	570
bis(2-Ethylhexyl)phthalate	390	390	1600	670	1300	500	1500 UJ	380	410	820 UJ	570
Di-n-octyl phthalate	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ
Benzo(b)fluoranthene	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ
Benzo(k)fluoranthene	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ
Benzo(a)pyrene	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ
Indeno (1,2,3-cd)pyrene	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ
Dibenz(a,h)anthracene	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ
Benzo(g,h,i)perylene	390 UJ	390 UJ	1600 UJ	670	1300	500 UJ	1500 UJ	380	410	820 UJ	570 UJ

Sample quantitation limits are reported on dry weight basis.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973S03.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-08	TRUK-SS-05
Traffic Report Number	AEC34DL	AEC35	AEC36	AEC37	AEC38	AEC39	AEC43	AEC44	AEC45	AEC45DL	AEC48
Remarks	Dilution									Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/05/93	06/06/93	06/08/93	06/06/93	06/06/93	06/05/93	06/06/93	06/06/93	06/07/93	06/05/93
Dilution Factor	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	15.0	1.
Percent Solid	58.0%	61.0%	90.0%	88.0%	63.0%	67.0%	72.0%	62.0%	70.0%	70.0%	92.0%
SEMI-VOLATILE COMPOUND											
Phenol	1700	540	370	380	520	490	460	530	470	7100	360
bis (2-Chloroethyl) ether	1700	540	370	380	520	490	460	530	470	7100	360
2-Chlorophenol	1700	540	370	380	520	490	460	530	470	7100	360
1,3-Dichlorobenzene	1700	540	370	380	520	490	460	530	470	7100	360
1,4-Dichlorobenzene	1700	540	370	380	520	490	460	530	470	7100	360
1,2-Dichlorobenzene	1700	540	370	380	520	490	460	530	470	7100	360
2-Methylphenol	1700	540	370	380	520	490	460	530	470	7100	360
2,2'-oxybis(1-chloropropane)	1700	540	370	380	520	490	460	530	470	7100	360
4-Methylphenol	1700	540	370	380	520	490	460	530	470	7100	360
N-Nitroso-di-n-propylamine	1700	540	370	380	520	490	460	530	470	7100	360
Hexachloroethane	1700	540	370	380	520	490	460	530	470	7100	360
Nitrobenzene	1700	540	370	380	520	490	460	530	470	7100	360
Isophorone	1700	540	370	380	520	490	460	530	470	7100	360
2-Nitrophenol	1700	540	370	380	520	490	460	530	470	7100	360
2,4-Dimethylphenol	1700	540	370	380	520	490	460	530	470	7100	360
bis (2-Chloroethoxy) methane	1700	540	370	380	520	490	460	530	470	7100	360
2,4-Dichlorophenol	1700	540	370	380	520	490	460	530	470	7100	360
1,2,4-Trichlorobenzene	1700	540	370	380	520	490	460	530	470	7100	36
Naphthalene	1700	540	370	380	520	490	460	530	470	7100	36
4-Chloroaniline	1700	540	370	380	520	490	460	530	470	7100	360
Hexachlorobutadiene	1700	540	370	380	520	490	460	530	470	7100	360
4-Chloro-3-methylphenol	1700	540	370	380	520	490	460	530	470	7100	360
2-Methylnaphthalene	1700	540	370	380	520	490	460	530	470	7100	360
Hexachlorocyclopentadiene	1700	540	370	380	520	490	460	530	470	7100	360
2,4,6-Trichlorophenol	1700	540	370	380	520	490	460	530	470	7100	360
2,4,5-Trichlorophenol	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
2-Chloronaphthalene	1700	540	370	380	520	490	460	530	470	7100	360
2-Nitroaniline	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
Dimethylphthalate	1700	540	370	380	520	490	460	530	470	7100	360
Acenaphthylene	1700	540	370	380	520	490	460	530	470	7100	360
2,6-Dinitrotoluene	1700	540	370	380	520	490	460	530	470	7100	360

Sample quantitation limits are reported on dry weight basis.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973SQ4.WK3

CLP SEMIVOLATILE ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-08	TRUK-SS-05
Traffic Report Number	AEC34DL	AEC35	AEC36	AEC37	AEC38	AEC39	AEC43	AEC44	AEC45	AEC45DL	AEC48
Remarks	Dilution									Dilution	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/07/93	06/05/93	06/06/93	06/08/93	06/06/93	06/06/93	06/05/93	06/06/93	06/06/93	06/07/93	06/05/93
Dilution Factor	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	15.0	1.0
Percent Solid	85.0%	85.0%	85.0%	49.0%	49.0%	66.0%	66.0%	87.0%	80.0%	80.0%	58.0%
SEMIVOLATILE COMPOUND											
3-Nitroaniline	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
Acenaphthene	1700	540	370	380	520	490	460	530	470	7100	360
2,4-Dinitrophenol	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
4-Nitrophenol	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
Dibenzofuran	1700	540	370	380	520	490	460	530	470	7100	360
2,4-Dinitrotoluene	1700	540	370	380	520	490	460	530	470	7100	360
Diethylphthalate	1700	540 UJ	370	380 U	520 U	490 U	460	530	470	7100	360
4-Chlorophenyl-phenylether	1700	540	370	380	520	490	460	530	470	7100	360
Fluorene	1700	540	370	380	520	490	460	530	470	7100	360
4-Nitroaniline	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
4,6-Dinitro-2-methylphenol	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
n-Nitrosodiphenylamine	1700	540	370	380	520	490	460	530	470	7100	360
4-Bromophenyl-phenylether	1700	540	370	380	520	490	460	530	470	7100	360
Hexachlorobenzene	1700	540	370	380	520	490	460	530	470	7100	360
Pentachlorophenol	4100	1300	890	910	1300	1200	1100	1300	1100	17000	870
Phenanthrene	1700	540	370	380	520	490	460	530	470	7100	360
Anthracene	1700	540	370	380	520	490	460	530	470	7100	360
Carbazole	1700	540	370	380	520	490	460	530	470	7100	360
Di-n-butylphthalate	1700	540	370 U	380 U	520 U	490 U	460	530 U	470	7100	360
Fluoranthene	1700	540	370	380	520	490	460	530	470	7100	360
Pyrene	1700 UJ	540	370	380	520	490	460	530	470	7100 UJ	360
Butylbenzylphthalate	1700 UJ	540	370	380	520	490	460	530	470	7100 UJ	360
3,3'-Dichlorobenzidine	1700 UJ	540	370	380	520	490	460	530	470	7100 UJ	360
Benzo(a)anthracene	1700 UJ	540	370	380	520	490	460	530	470	7100 UJ	360
Chrysene	1700 UJ	540	370	380	520	490	460	530	470	7100 UJ	360
bis(2-Ethylhexyl)phthalate	1700 UJ	540	370	380	520	490	460	530	470	7100 UJ	360
Di-n-octyl phthalate	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360
Benzo(b)fluoranthene	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360
Benzo(k)fluoranthene	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360
Benzo(a)pyrene	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360
Indeno (1,2,3-cd)pyrene	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360
Dibenz(a,h)anthracene	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360
Benzo(g,h,i)perylene	1700 UJ	540	370 UJ	380	520 UJ	490 UJ	460	530	470 UJ	7100 UJ	360

Sample quantitation limits are reported on dry weight basis.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973PQ1.WK3

CLP PESTICIDE/PCB ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	TRUK-SS-03	TRUK-SD-01	TRUK-SD-04	TRUK-SS-02	TRUK-LS-02	TRUK-LS-01	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04	TRUK-SS-01
Traffic Report Number	ADG78	AEC28	AEC29	AEC31	AEC32	AEC33	AEC34	AEC35	AEC36	AEC37
Remarks			DUP AEC34					DUP AEC38	DUP ADG78	
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93
Analysis Date	06/05/93	06/05/93	06/05/93	06/04/93	06/04/93	06/04/93	06/05/93	06/04/93	06/05/93	06/05/93
Dilution Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Percent Solid	85.0%	85.0%	49.0%	66.0%	87.0%	80.0%	58.0%	61.0%	90.0%	88.0%
PESTICIDE/PCB COMPOUND										
alpha-BHC	2.0	2.0	3.5	2.6 UJ	2.0	2.1	2.9	2.8	1.9	1.9 U
beta-BHC	2.0	2.0	3.5	2.6 UJ	2.0	2.1	2.9	2.8	1.9	1.9
gamma-BHC (Lindane)	2.0	2.0	3.5	2.6 UJ	2.0	2.1	2.9	2.8	1.9	1.9
delta-BHC	2.0	2.0 U	3.5	2.6 UJ	2.0	2.1	2.9 U	2.8	1.9	1.9
Heptachlor	2.0	2.0 U	3.5 U	2.6 UJ	2.0	2.1	2.9	2.8	1.9	1.9
Aldrin	2.0	2.0 U	3.5	2.6 UJ	2.0	2.1	2.9	2.8	1.9	1.9
Heptachlor epoxide	2.0	2.0 U	3.5	2.6 UJ	2.0	2.1	2.9	2.8	1.9	1.9
Endosulfan I	2.0	2.0	3.5	2.6 UJ	2.0 U	2.1	2.9	2.8	1.9	1.9 U
Dieldrin	3.9	3.9 U	6.7	5.0 UJ	3.8	4.1	5.7	5.4	3.7	3.8
4,4'-DDE	3.9	3.9	6.7	5.0 UJ	3.8 U	4.1	5.7	5.4 U	3.7	3.8
Endrin	R	R	R	5.0 UJ	3.8 U	4.1	R	5.4 U	5.0 UJ	3.8
Endosulfan II	3.9	3.9 U	6.7	5.0 UJ	3.8 U	4.1	5.7 U	5.4	3.7	3.8
4,4'-DDD	3.9 U	3.9 U	6.7 U	5.0 UJ	3.8	4.1 U	5.7 U	5.4 U	3.7 U	3.8 U
Endosulfan sulfate	3.9	3.9	6.7	5.0 UJ	3.8	4.1	5.7	5.4	3.7	3.8 U
4,4'-DDT	3.9 U	3.9	6.7	5.0 UJ	3.8 U	4.1 U	5.7	5.4 U	3.7 U	3.8
Methoxychlor	20	20	35 U	26 UJ	20	21	29 U	28	19	19
Endrin ketone	3.9	3.9	6.7	5.0 UJ	3.8	4.1 U	5.7	5.4	3.7	3.8
Endrin aldehyde	3.9	3.9	6.7	5.0 UJ	3.8	4.1	5.7	5.4	3.7	3.8
alpha-Chlordane	R	R	3.5	2.6 UJ	2.0	2.1	2.9 U	2.8	1.9 U	1.9
gamma-Chlordane	R	R	5.3 UJ	2.6 UJ	2.0 U	2.1 U	R	2.8	R	1.9
Toxaphene	200	200	350	260 UJ	200	210	290	280	190	190
Aroclor-1016	39	39	67	50 UJ	38	41	57	54	37	38
Aroclor-1221	79	79	140	100 UJ	77	84	120	110	74	76
Aroclor-1232	39	39	67	50 UJ	38	41	57	54	37	38
Aroclor-1242	39	39	67	50 UJ	38	41	57	54	37	38
Aroclor-1248	39	39	67	50 UJ	38	41	57	54	37	38
Aroclor-1254	39	39	200 UJ	50 UJ	38	41	57 UJ	54	37	38
Aroclor-1260	39	39	67 UJ	50 UJ	38	41	57	54	37	38

Sample quantitation limits are reported on dry weight basis.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the sample quantitation li
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.

Site: Truk-Away Landfill
Laboratory: Southwest Research Institute
Disk: 771023-29b
File: 19973PQ2.WK3

CLP PESTICIDE/PCB ORGANIC ANALYSIS
CASE 19973, SDG ADG78
SOIL QUANTITATION LIMITS (ug/kg)

Sample Location	TRUK-SS-01	TRUK-LS-03	TRUK-SD-02	TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SS-05			
Traffic Report Number	AEC37DL	AEC38	AEC39	AEC43	AEC44	AEC45	AEC48			
Remarks	Dilution									
Sampling Date	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93	05/11/93			
Extraction Date	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93	05/17/93			
Analysis Date	06/05/93	06/05/93	06/04/93	06/05/93	06/05/93	06/05/93	06/04/93			
Dilution Factor	10.0	1.0	1.0	1.0	1.0	1.0	1.0			
Percent Solid	88.0%	63.0%	67.0%	72.0%	62.0%	70.0%	92.0%			
PESTICIDE/PCB COMPOUND										
alpha-BHC	19	2.7 U	2.5	2.4 U	2.7 U	2.4	1.8 U			
beta-BHC	19	2.7	2.5	2.4	2.7	2.4	1.8			
gamma-BHC (Lindane)	19	2.7	2.5	2.4	2.7	2.4	1.8			
delta-BHC	19 U	2.7	2.5	2.4	2.7	2.4	1.8			
Heptachlor	19	2.7	2.5	2.4	2.7 U	2.4	1.8			
Aldrin	19	2.7	2.5	2.4	2.7	2.4	1.8			
Heptachlor epoxide	19	2.7	2.5	2.4	2.7	2.4	1.8			
Endosulfan I	19 U	2.7	2.5	2.4	2.7	2.4	1.8			
Dieldrin	38	5.2 U	4.9 U	4.6	5.3	4.7	3.6 U			
4,4'-DDE	38 U	5.2 U	4.9 U	4.6	5.3	4.7	3.6			
Endrin	38	5.2	4.9 U	4.6	5.3	4.7 U	3.6 U			
Endosulfan II	38	5.2 U	4.9 U	4.6	5.3	4.7 U	3.6 U			
4,4'-DDD	38	5.2 U	4.9	4.6	5.3 U	4.7	3.6			
Endosulfan sulfate	38	5.2	4.9	4.6	5.3 U	4.7	3.6			
4,4'-DDT	38 U	5.2 U	4.9	4.6	5.3 U	4.7 U	3.6 U			
Methoxychlor	190	27	25	24	27	24	18 U			
Endrin ketone	38	5.2	4.9	4.6	5.3 U	4.7	3.6			
Endrin aldehyde	38	5.2	4.9	4.6	5.3	4.7	3.6			
alpha-Chlordane	19	2.7	2.5 U	2.4	2.7	2.4 U	1.8			
gamma-Chlordane	19	2.7 U	2.5	2.4	2.7 U	2.4 U	1.8 U			
Toxaphene	1900	270	250	240	270	240	180			
Aroclor-1016	380	52	49	46	53	47	36			
Aroclor-1221	760	110	100	93	110	96	73			
Aroclor-1232	380	52	49	46	53	47	36			
Aroclor-1242	380	52	49	46	53	47	36			
Aroclor-1248	380	52	49	46	53	47	36			
Aroclor-1254	380	52	49	46	53	47	36			
Aroclor-1260	380	52	49	46	53	47	36			

Sample quantitation limits are reported on dry weight basis.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the sample quantitation li
R - The datum was rejected.

List of Inorganic Data Validation Acronyms

AA	-	atomic absorption spectrophotometry (flame or graphite furnace)
CRDL	-	contract required detection limit
2xCRDL	-	2 times the contract required detection limit
3xCRDL	-	3 times the contract required detection limit
CCB	-	continuing calibration blank
CCV	-	continuing calibration verification
CLP	-	Contract Laboratory Program
CSF	-	Complete Sample Delivery Group File
CV	-	manual cold vapor atomic absorption spectrophotometry
DQO	-	Data Quality Objective form
EPA	-	Environmental Protection Agency
ICB	-	initial calibration blank
ICP	-	inductively coupled plasma emission spectrophotometry
ICS	-	interference check sample (A - mix A, AB - mix AB)
ICV	-	initial calibration verification
IDL	-	instrument detection limit
2xIDL	-	2 times the instrument detection limit
IRDA	-	Inorganic Regional Data Assessment form
LCS	-	laboratory control sample (W - aqueous, S - solid)
mg/L	-	milligram per liter
mg/Kg	-	milligram per kilogram
MSA	-	method of standard addition
PB	-	preparation blank (W - aqueous, S - soil/sediment)
QC	-	quality control
RAS	-	Routine Analytical Services
RPD	-	relative percent difference
RSD	-	relative standard deviation
SAS	-	Special Analytical Services
SDG	-	Sample Delivery Group
SOW	-	Statement of Work for Inorganic Analysis
TAL	-	target analyte list
TR#	-	Traffic Report number
TR# D	-	laboratory duplicate sample
TR# DA	-	laboratory duplicate spike sample
TR# DL	-	sample analyzed at a secondary dilution
TR# RE	-	re-extracted and reanalyzed sample
ug/L	-	microgram per liter

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973M1.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
AQUEOUS ANALYTICAL RESULTS (ug/L)

Sample Location				TRUK-FB-01	TRUK-FB-02							
Traffic Report Number				MABG91	MABG92							
Remarks				Equip Blank	Equip Blank							
Sampling Date				11-May-93	11-May-93							
Dilution Factor				1	1							
INORGANIC ANALYTES		IDL (ug/L)	CRDL (ug/L)									1
Aluminum	P	23.5	200	194 J	54.8 J							
Antimony	P	17.9	60	17.9 UJ	17.9 UJ							
Arsenic	F	2.5	10	2.5 UJ	2.5 UJ							
Barium	P	2.5	200	5.1 J	2.5 UJ							
Beryllium	P	0.5	5	0.5 UJ	0.5 UJ							
Cadmium	P	1.7	5	1.7 UJ	1.7 UJ							
Calcium	P	42.3	5000	42.3 UJ	42.6 J							
Chromium	P	5.8	10	5.8 UJ	5.8 UJ							
Cobalt	P	3.8	50	3.8 UJ	3.8 UJ							
Copper	P	4.2	25	4.2 UJ	4.2 UJ							
Iron	P	4.8	100	99.8 J	670 J							
Lead	F	0.8	3	2.4 J	3.5 J							
Magnesium	P	46.4	5000	244 J	46.4 UJ							
Manganese	P	1.8	15	1.8 UJ	28.2 J							
Mercury	CV	0.1	0.2	0.1 UJ	0.1 UJ							
Nickel	P	6.1	40	6.1 UJ	6.1 UJ							
Potassium	P	187.6	5000	367 J	205 J							
Selenium	F	3.3	5	3.3 UJ	3.3 UJ							
Silver	P	3.8	10	3.8 UJ	3.8 UJ							
Sodium	P	66.2	5000	66.2 UJ	66.7 J							
Thallium	F	1.4	10	1.4 UJ	1.4 UJ							
Vanadium	P	3.3	50	3.3 UJ	3.3 UJ							
Zinc	P	3.4	20	3.4 UJ	3.4 UJ							
Cyanide	AS	10.0	10	10 UJ	10 UJ							

Analytical Method
F furnace
P ICP/Flame AA
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

J - The associated numerical value is an estimated quantity.
UJ - The compound was not detected. The sample detection limit is an estimated value.
" " - The blank space indicates the compound was not detected.
IDL - Instrument Detection Limit
CRDL - Contract Required Detection Limit

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973M2.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
Soil Analytical Results (mg/kg)

Sample Location		TRUK-SS-02	TRUK-SS-01	TRUK-LS-02	TRUK-LS-01	TRUK-SD-01	TRUK-SD-04	TRUK-SS-03	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04
Traffic Report Number		MABG70	MABG71	MABG72	MABG73	MABG74	MABG75	MABG78	MABG88	MABG89	MABG90
Remarks									DUP MABG75		DUP MABG78
Sampling Date		11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93
Percent Solid		73.0%	89.7%	83.8%	67.6%	86.4%	53.3%	94.5%	54.8%	57.6%	87.7%
Dilution Factor		1 As 2X, Pb 20X	1	1	1 Pb 5X	1 Pb 5X	1 Pb 5X	1 Pb 5X	1 Pb 10X	1 Pb 5X	1 Pb 5X
INORGANIC ANALYTES											
Aluminum	P	4630	4900	3450	3090	4000	6810	5710	8020	4750	5340
Antimony	P	4.5 UJ	3.8 UJ	4.1 UJ	4.9 UJ	3.9 UJ	6.2 UJ	3.4 UJ	6.2 UJ	6.2 UJ	3.9 UJ
Arsenic	F	12.9	2.5	5.1	2.4	4.1	8.7	2.2	10.3	15.2	2.4
Barium	P	51.7	11	104	65.9	19.3	47.2	33.7	57.8	97.2	24.2
Beryllium	P	0.76	0.44	0.48	0.56	0.45	0.88	0.58	1.1	1	0.66
Cadmium	P								0.66 J		0.58 J
Calcium	P	1020	511	1760	1720	874	1780	1080	1670	3050	889
Chromium	P	8.4 U	35	7.0 U	7.6 UJ	7.2 U	17.1	18.6	21	7.6 UJ	8.8
Cobalt	P	6.0	2.5	7.9	2.0 J	2.5	7	4.9	8	4.5	3.1
Copper	P	25.5	34.2	22.5	16.3	18.5	35.6	25.5	55.7	30.5	17.9
Iron	P	23300 J	6740 J	97500 J	38100 J	9910 J	16100 J	10400 J	20900 J	59000 J	8730 J
Lead	F	122	15.2	51.7	30.4	41.6	75.6	27.5	106	29.4	28.5
Magnesium	P	796	1100	1110	655	1220	2170	2080	2630	1350	1400
Manganese	P	313 J	119 J	228 J	79.7 J	109 J	167 J	110 J	210 J	301 J	105 J
Mercury	CV	0.18 J	22.6 J	0.1 J	0.09 J	0.2 J	0.31 J	0.08 J	0.27 J	0.08 UJ	0.08 J
Nickel	P	11	91.3	61.9	13.7	9.1	15.3	11.1	20.9	34.7	7.4
Potassium	P	475 J	473 J	307 UJ	314 UJ	468 J	1090 J	868 J	1150 J	750 J	596 J
Selenium	F	3.1 J	R	R	R	R	1.8 J	R	R	R	R
Silver	P			5.5	1.6 J	1.1 J			2.8	2.6 J	0.87 J
Sodium	P	45.8 U	37.4 U	R	R	45.7 U	113	57.2 U	132	R	50.9 U
Thallium	F	0.36 UJ	0.29 UJ	0.31 UJ	0.40 UJ	0.30 UJ	0.48 UJ	0.28 UJ	0.49 UJ	0.46 UJ	0.30 UJ
Vanadium	P	10.1	7.1	15.1	7.2	9.2	17.7	12.9	25.1	15.3	11
Zinc	P	84.5	92.6	336	209	80.2	142	65.8	189	394	63.2
Cyanide	AS				1.1 J					1.0 J	

Analytical Method
F
P
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

Sample Results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the raised sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
" " - The blank space indicates the compound was not detected.

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973M3.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
Soil Analytical Results (mg/kg)

Sample Location		TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-05	TRUK-LS-03	TRUK-SD-02				
Traffic Report Number		MABG94	MABG95	MABG96	MABG97	MABG98	MABG99				
Remarks						DUP MABG89					
Sampling Date		11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93				
Percent Solid		75.3%	60.9%	69.0%	85.3%	63.0%	70.0%				
Dilution Factor		1	1 Pb 10X	1	1	1 Pb 5X	1 Pb 5X				
INORGANIC ANALYTES											
Aluminum	P	5130	7220	4160	7640	5200	2070				
Antimony	P	4.3 UJ	5.7 UJ	5.1 UJ	4.1 UJ	5.5 UJ	4.9 UJ				
Arsenic	F	1.7	3.0	1.5	5.0	7.9	3.1				
Barium	P	20.9	91.8	16.2	14.6	80.8	116				
Beryllium	P	0.74	1.0	0.85	0.71	0.93	0.82				
Cadmium	P	0.44 J	0.57 J								
Calcium	P	940	1650	701	575	2640	3270				
Chromium	P	9.2	27.1	3.7 UJ	6.7 UJ	7.2 UJ	3.5 UJ				
Cobalt	P	4.7	3.8	1.5 J	5.2	4.5	2.6				
Copper	P	7.8	11.9	1.4 J	9.6	22.8	15.0				
Iron	P	5140 J	7090 J	2210 J	12600 J	36800 J	67800 J				
Lead	F	5	91	7.1	10.3	31.9	25.7				
Magnesium	P	1410	1090	420	1880	1620	420				
Manganese	P	112 J	99.5 J	59.3 J	222 J	245 J	155 J				
Mercury	CV	0.06 UJ	0.11 J	0.07 UJ	0.06 UJ	0.17 J	0.06 UJ				
Nickel	P	8.5	5.8	1.8 J	8.4	26.6	19.4				
Potassium	P	275 UJ	408 UJ	267 J	471 J	934 J	295 UJ				
Selenium	F	R	R	R	R	R	R				
Silver	P					2.1 J	3.8 UJ				
Sodium	P	39.3 U	62.0 U	168	37.4 U	R	R				
Thallium	F	0.34 UJ	0.42 UJ	0.40 UJ	0.33 UJ	0.41 UJ	0.39 UJ				
Vanadium	P	15.2	27.4	3.9 U	13.9	13.2	9.1				
Zinc	P	45.1	129	8.8 U	25.7	306	148				
Cyanide	AS						1.0 J				

Analytical Method
F
P
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

Sample Results are reported on dry weight basis.
J - The associated numerical value is an estimated quantity.
U - The compound was considered not detected due to blank contamination.
The associated numerical value is the raised sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
" " - The blank space indicates the compound was not detected.

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973ID1.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
Soil Sample Instrument Detection Limits (mg/kg)

Sample Location		TRUK-SS-02	TRUK-SS-01	TRUK-LS-02	TRUK-LS-01	TRUK-SD-01	TRUK-SD-04	TRUK-SS-03	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04
Traffic Report Number		MABG70	MABG71	MABG72	MABG73	MABG74	MABG75	MABG78	MABG88	MABG89	MABG90
Remarks									DUP MABG75		DUP MABG78
Sampling Date		11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93
Percent Solid		73.0%	89.7%	83.8%	67.6%	86.4%	53.3%	94.5%	54.8%	57.6%	87.7%
Dilution Factor		1 As 2X, Pb 20X	1	1	1 Pb 5X	1 Pb 5X	1 Pb 5X	1 Pb 5X	1 Pb 10X	1 Pb 5X	1 Pb 5X
INORGANIC ANALYTES											
Aluminum	P	5.9	5.0	5.4	6.5	5.2	8.1	4.4	8.1	8.1	5.1
Antimony	P	4.5 UJ	3.8 UJ	4.1 UJ	4.9 UJ	3.9 UJ	6.2 UJ	3.4 UJ	6.2 UJ	6.2 UJ	3.9 UJ
Arsenic	F	1.3	0.52	0.55	0.71	0.54	0.86	0.49	0.88	0.82	0.54
Barium	P	0.63	0.54	0.57	0.69	0.55	0.86	0.47	0.86	0.86	0.54
Beryllium	P	0.13	0.11	0.11	0.14	0.11	0.17	0.09	0.17	0.17	0.11
Cadmium	P	0.43	0.36	0.39	0.47	0.37	0.59	0.32	0.59	0.58	0.37
Calcium	P	10.6	9.1	9.7	11.7	9.3	14.6	8.0	14.6	14.5	9.2
Chromium	P	8.4 U	1.2	7.0 U	7.6 UJ	7.2 U	2.0	1.1	2.0	7.6 UJ	1.3
Cobalt	P	1.0	0.81	0.87	1.1	0.84	1.3	0.72	1.3	1.3	0.8
Copper	P	1.1	0.90	1.0	1.2	0.93	1.4	0.79	1.4	1.4	0.91
Iron	P	1.2	1.0	1.1	1.3	1.1	1.7	0.91	1.7	1.7	1.0
Lead	F	4.2	0.17	0.18	1.2	0.85	1.4	0.80	2.8	1.3	0.85
Magnesium	P	11.7	9.9	10.6	12.8	10.2	16.0	8.8	16.0	16.0	10.1
Manganese	P	0.45	0.39	0.41	0.50	0.40	0.62	0.34	0.62	0.62	0.39
Mercury	CV	0.07	0.05	0.06	0.07	0.05	0.09	0.05	0.09	0.08 UJ	0.05
Nickel	P	1.5	1.3	1.4	1.7	1.3	2.1	1.2	2.1	2.1	1.3
Potassium	P	47.2	40.2	307 UJ	314 UJ	41.4	64.6	35.4	64.6	64.5	40.7
Selenium	F	0.85	R	R	R	R	1.14	R	R	R	R
Silver	P	1.0	0.81	0.87	1.1	0.84	1.3	0.72	1.3	1.3	0.83
Sodium	P	45.8 U	37.4 U	R	R	45.7 U	22.8	57.2 U	22.8	R	50.9 U
Thallium	F	0.36 UJ	0.29 UJ	0.31 UJ	0.40 UJ	0.30 UJ	0.48 UJ	0.28 UJ	0.49 UJ	0.46 UJ	0.30 UJ
Vanadium	P	0.83	0.71	0.76	0.91	0.73	1.1	0.62	1.1	1.1	0.72
Zinc	P	0.85	0.73	0.78	0.94	0.75	1.2	0.64	1.2	1.2	0.74
Cyanide	AS	0.67	0.51	0.56	0.72	0.55	0.90	0.49	0.90	0.83	0.54

Analytical Method
F Furnace
P ICP/Flame AA
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

Soil sample detection limits are reported on dry weight basis based on the IDL.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the raised sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
IDL - Instrument Detection Limit

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973ID2.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
Soil Sample Instrument Detection Limits (mg/kg)

Sample Location		TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-05	TRUK-LS-03	TRUK-SD-02				
Traffic Report Number		MABG94	MABG95	MABG96	MABG97	MABG98	MABG99				
Remarks						DUP MABG89					
Sampling Date		11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93				
Percent Solid		75.3%	60.9%	69.0%	85.3%	63.0%	70.0%				
Dilution Factor		1	1 Pb 10X	1	1	1 Pb 5X	1 Pb 5X				
INORGANIC ANALYTES											
Aluminum	P	5.6	7.5	6.7	5.4	7.2	6.4				
Antimony	P	4.3 UJ	5.7 UJ	5.1 UJ	4.1 UJ	5.5 UJ	4.9 UJ				
Arsenic	F	0.61	0.75	0.71	0.58	0.73	0.69				
Barium	P	0.6	0.80	0.72	0.57	0.77	0.68				
Beryllium	P	0.12	0.16	0.14	0.11	0.15	0.14				
Cadmium	P	0.41	0.54	0.49	0.39	0.52	0.46				
Calcium	P	10.1	13.5	12.1	9.7	13.0	11.5				
Chromium	P	1.4	1.8	3.7 UJ	6.7 UJ	7.2 UJ	3.5 UJ				
Cobalt	P	0.91	1.2	1.1	0.9	1.2	1.0				
Copper	P	1.0	1.3	1.2	1.0	1.3	1.1				
Iron	P	1.1	1.5	1.4	1.1	1.5	1.3				
Lead	F	0.19	2.4	0.23	0.19	1.2	1.1				
Magnesium	P	11.1	14.8	13.3	10.7	14.3	12.6				
Manganese	P	0.43	0.57	0.52	0.41	0.55	0.49				
Mercury	CV	0.06 UJ	0.08 UJ	0.07 UJ	0.06 UJ	0.07 UJ	0.06 UJ				
Nickel	P	1.5	1.9	1.8	1.4	1.9	1.7				
Potassium	P	275 UJ	408 UJ	53.8	43.1	57.8	295 UJ				
Selenium	F	R	R	R	R	R	R				
Silver	P	0.91	1.2	1.1	0.87	1.2	3.8 UJ				
Sodium	P	39.3 U	62.0 U	19.0	37.4 U	R	R				
Thallium	F	0.34 UJ	0.42 UJ	0.40 UJ	0.33 UJ	0.41 UJ	0.39 UJ				
Vanadium	P	0.79	1.1	3.9 U	0.76	1.0	0.90				
Zinc	P	0.81	1.1	8.8 U	0.78	1.0	0.93				
Cyanide	AS	0.63	0.80	0.71	0.56	0.78	0.69				

Analytical Method
F Furnace
P ICP/Flame AA
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

Soil sample detection limits are reported on dry weight basis based on the IDL.
U - The compound was considered not detected due to blank contamination. The associated numerical value is the raised sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
IDL - Instrument Detection Limit

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973CD1.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
Soil Sample Contract Required Detection Limits (mg/kg)

Sample Location		TRUK-SS-02	TRUK-SS-01	TRUK-LS-02	TRUK-LS-01	TRUK-SD-01	TRUK-SD-04	TRUK-SS-03	TRUK-SD-03	TRUK-LS-04	TRUK-SS-04
Traffic Report Number		MABG70	MABG71	MABG72	MABG73	MABG74	MABG75	MABG78	MABG88	MABG89	MABG90
Remarks									DUP MABG75		DUP MABG78
Sampling Date		11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93
Percent Solid		73.0%	89.7%	83.8%	67.6%	86.4%	53.3%	94.5%	54.8%	57.6%	87.7%
Dilution Factor		1 As 2X, Pb 20X	1	1	1 Pb 5X	1 Pb 5X	1 Pb 5X	1 Pb 5X	1 Pb 10X	1 Pb 5X	1 Pb 5X
INORGANIC ANALYTES											
Aluminum	P	50.3	42.9	45.9	55.3	44.1	68.9	37.8	68.9	68.8	43.4
Antimony	P	15.1	12.9	13.8	16.6	13.2	20.7	11.3	20.7	20.6	13.0
Arsenic	F	5.2	2.1	2.2	2.8	2.1	3.4	2.0	3.5	3.3	2.2
Barium	P	50.3	42.9	45.9	55.3	44.1	68.9	37.8	68.9	68.8	43.4
Beryllium	P	1.3	1.1	1.1	1.4	1.1	1.7	0.94	1.7	1.7	1.1
Cadmium	P	1.3	1.1	1.1	1.4	1.1	1.7	0.94	1.7	1.7	1.1
Calcium	P	1260	1070	1150	1380	1100	1720	940	1720	1720	1090
Chromium	P	2.5	2.1	2.3	2.8	2.2	3.4	1.9	3.4	3.4	2.2
Cobalt	P	12.6	10.7	11.5	13.8	11.0	17.2	9.4	17.2	17.2	10.9
Copper	P	6.3	5.4	5.7	6.9	5.5	8.6	4.7	8.6	8.6	5.4
Iron	P	25.1	21.4	22.9	27.7	22.0	34.4	18.9	34.4	34.4	21.7
Lead	F	156	0.62	0.66	4.3	3.2	5.2	3.0	10.5	4.9	3.3
Magnesium	P	1260	1070	1150	1380	1100	1720	940	1720	1720	1090
Manganese	P	3.8	3.2	3.4	4.1	3.3	5.2	2.8	5.2	5.2	3.3
Mercury	CV	0.14	0.10	0.11	0.13	0.11	0.18	0.10	0.17	0.17	0.11
Nickel	P	10.1	8.6	9.2	11.1	8.8	13.8	7.6	13.8	13.8	8.7
Potassium	P	2360	1070	1150	1380	1100	1720	940	1720	1720	1090
Selenium	F	1.3	1.0	1.1	1.4	1.1	1.7	0.99	1.8	1.6	1.1
Silver	P	2.5	2.1	2.3	2.8	2.2	3.4	1.9	3.4	3.4	2.2
Sodium	P	1260	1070	1150	1380	1100	1720	640	1720	1720	1090
Thallium	F	2.6	2.1	2.2	2.8	2.1	3.4	2.0	3.5	3.3	2.2
Vanadium	P	12.6	10.7	11.5	13.8	11.0	17.2	9.4	17.2	17.2	10.9
Zinc	P	5.0	4.3	4.6	5.5	4.4	6.9	3.8	6.9	6.9	4.3
Cyanide	AS	0.67	0.51	0.56	0.72	0.55	0.90	0.49	0.90	0.83	0.54

Analytical Method
F Furnace
P ICP/Flame AA
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

Soil sample detection limits are reported on dry weight basis based on the CRDL.
U - The compound was considered not detected due to blank contamination.
The associated numerical value is the raised sample quantitation limit.
UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
CRDL- Contract Required Detection Limit

Site: TRUK-AWAY LANDFILL
Laboratory: Skinner & Sherman Laboratories, Inc.
Disk: 771023-29b
File: 19973CD2.WK3

CLP INORGANIC ANALYSIS
CASE 19973, SDG MABG70
Soil Sample Contract Required Detection Limits (mg/kg)

Sample Location		TRUK-SD-06	TRUK-SD-07	TRUK-SD-08	TRUK-SD-05	TRUK-LS-03	TRUK-SD-02				
Traffic Report Number		MABG94	MABG95	MABG96	MABG97	MABG98	MABG99				
Remarks						DUP MABG89					
Sampling Date		11-May-93	11-May-93	11-May-93	11-May-93	11-May-93	11-May-93				
Percent Solid		75.3%	60.9%	69.0%	85.3%	63.0%	70.0%				
Dilution Factor		1	1 Pb 10X	1	1	1 Pb 5X	1 Pb 5X				
INORGANIC ANALYTES											
Aluminum	P	47.9	63.8	57.4	46.0	61.6	54.4				
Antimony	P	14.4	19.1	17.2	13.8	18.5	16.3				
Arsenic	F	2.4	3.0	2.8	2.3	2.9	2.8				
Barium	P	47.9	63.8	57.4	46.0	61.6	54.4				
Beryllium	P	1.2	1.6	1.4	1.1	1.5	1.4				
Cadmium	P	1.2	1.6	1.4	1.1	1.5	1.4				
Calcium	P	1200	1590	1430	1150	1540	1360				
Chromium	P	2.4	3.2	2.9	2.3	3.1	2.7				
Cobalt	P	12.0	15.9	14.3	11.5	15.4	13.6				
Copper	P	6.0	8.0	7.2	5.7	7.7	6.8				
Iron	P	23.9	31.9	28.7	23.0	30.8	27.2				
Lead	F	0.73	9.0	0.85	0.70	4.4	4.2				
Magnesium	P	1200	1590	1430	1150	1540	1360				
Manganese	P	3.6	4.8	4.3	3.4	4.6	4.1				
Mercury	CV	0.12	0.16	0.14	0.11	0.13	0.12				
Nickel	P	9.6	12.8	11.5	9.2	12.3	10.9				
Potassium	P	1200	1590	1430	1150	1540	1360				
Selenium	F	1.2	1.5	1.4	1.2	1.5	1.4				
Silver	P	2.4	3.2	2.9	2.3	3.1	2.7				
Sodium	P	1200	1590	1430	1150	1540	1360				
Thallium	F	2.4	3.0	2.8	2.3	2.9	2.8				
Vanadium	P	12.0	15.9	14.3	11.5	15.4	13.6				
Zinc	P	4.8	6.4	5.7	4.6	6.2	5.4				
Cyanide	AS	0.63	0.80	0.71	0.56	0.78	0.69				

Analytical Method
F Furnace
P ICP/Flame AA
CV Cold Vapor
AS Semi-Automated Spectrophotometric Analysis

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UJ - The compound was not detected. The sample quantitation limit is an estimated value.
R - The datum was rejected.
CRDL - Contract Required Detection Limit

SITE ASSESSMENT DECISION - EPA REGION 1

Site Name: Truk-Away Landfill EPA ID#: RID987493822

Alias Site Names: —

City: Warwick County or Parish: — State: RI

Refer to Report Dated: PA: _____ SI: _____ Other (report type & date): SIP 12/10/93

Report developed by: CDM

DECISION:

| | 1. Further Action under Superfund (CERCLA) is not appropriate or required because:

| | 1a. Site Evaluation Accomplished (SEA). | | 1b. Action Deferred to: | | RCRA | | NRC

|X| 2. Further Investigation Needed Under Superfund: 2a. Priority: | | Higher |X| Lower

2b. Activity Type: | | PA |X| ESI | | SI | | evaluate HRS score | | Other: _____

DISCUSSION/RATIONALE:

The nearest drinking water supply is over 2 miles away. However, PCBs, inorganic element, and semi volatile compounds were detected in soil and sediment samples.

Report Reviewed and Approved by: Sharon N. Hayes Signature: Sharon N. Hayes Date: 12/13/93

Site Decision Made by: Sharon N. Hayes Signature: Sharon N. Hayes Date: 12/13/93

EPA Form # 9100-3

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
Department of Environmental Management
Bureau of Environmental Protection
INTER-OFFICE MEMO

TO: Leo Hellested
Office of Waste Management

DATE: May 7, 1999

THROUGH: Michael Mulhare, Supervising Sanitary Engineer MJM
Office of Compliance and Inspection

FROM: John Leo, Sanitary Engineer JL
Office of Compliance and Inspection

SUBJECT: Mercury contamination at the former Truck-Away Landfill, end of Industrial Lane, Warwick, R.I.

On April 7, 1999 a brush fire swept across the former Truck Away Landfill. Because of the closeness to the airport, the Fire Department of Warwick and the State Airport Crash Crew responded.

On April 8, 1999, Jim Ball and I inspected the landfill and located a large amount of Polaroid battery packs on the surface of the landfill in the burned over area.

These packs were brought to R.I. by Truck Away from Polaroid of Massachusetts. This operation was overseen by John Quinn of the former solid Waste section of DOH.

Several of the thousand or so battery packs were taken as evidence and sent for analysis to Mitkem Laboratories on April 13, 1999 (copy of results attached).

Analysis shows that the battery packs are highly toxic waste with extractable levels of mercury at 2 ppm. This level is 10 times higher than the hazardous waste regulated level of .02 ppm mercury.

The current situation at the landfill is that the public and first responders can be exposed to highly toxic wastes.

It is my understanding that this project is being evaluated as a former solid waste landfill and will be managed by your group. I recommend immediate action be taken to remove the exposed mercury battery packs as hazardous waste. I also recommend that the site be characterized to determine the potential environmental and public health impacts from this landfill.

If you have any further questions, please feel fee to contact John Leo at extension 7127.

cc: Edward Szymanski
Dean Albro
Terrence Gray

JL/amz

MITKEM CORPORATION

Analysis Report: Total Metals

Client: RI DEM
Matrix: Solid

Analysis Method: 6010A (Cd, Pb)
7471A (Hg)
Concentration in: mg/Kg
Analysis Date: 4/15/99

Lab ID	Client ID	Result Cadmium	Result Lead	Result Mercury
60534001	4-13-99-JPL-1	26	920	3,800
Reporting Limit		0.5	1	0.3
QA/QC				
Method Blank				
0414PBS		ND	ND	ND
Lab Control Sample (% Recovery)				
0414LCSS		85	85	102

ND = Not Detected

MITKEM CORPORATION

Analysis Report: TCLP Metals

Client: RI DEM
Matrix: TCLP Leachate

Analysis Method: 6010A (Cd, Pb)
7470A (Hg)
Concentration in: mg/L
Analysis Date: 4/22/99

Lab ID	Client ID	Result Cadmium	Result Lead	Result Mercury
60534002	4-13-99-JPL-1	0.43	0.03	2.0
Reporting Limit		0.005	0.01	0.0008
QA/QC				
TCLP Blank MT0415B2		ND	ND	ND

ND = Not Detected

CDM Camp Dresser & McKee

Limited Site Investigation Work Plan
Former Truk Away Landfill Site

Rhode Island Airport Corporation
T. F. Green Airport
Warwick, Rhode Island

August 2000

Prepared for:

Rhode Island Airport Corporation
T.F. Green Airport
2000 Post Road
Warwick, Rhode Island 02886

Prepared by:

Camp Dresser & McKee Inc.
50 Hampshire Street
One Cambridge Place
Cambridge, Massachusetts 02139

CDM Camp Dresser & McKee Inc.

consulting engineering construction operations

One Cambridge Place
50 Hampshire Street
Cambridge, Massachusetts 02139
Tel: 617 452-6000 Fax: 617 452-8000

August 10, 2000

Ms. Laurie Grandchamp
Office of Waste Management
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908

Subject: Limited Environmental Site Investigation Work Plan
T. F. Green Airport
Former Truk Away Landfill Site
Warwick, Rhode Island

Dear Ms. Grandchamp:

On behalf of the Rhode Island Airport Corporation (RIAC), Camp Dresser & McKee, Inc. (CDM) hereby submits the enclosed Limited Environmental Site Investigation Work Plan for the former Truk Away Landfill Site at the T. F. Green Airport in Warwick, Rhode Island. CDM requests that the Rhode Island Department of Environmental Management (RIDEM) review the attached document.

As we discussed at the July 20, 2000 meeting, RIAC and CDM would like to begin field work as soon as possible. Since some of the proposed work at the site will be within the 50 foot perimeter wetland, a phased approval process is an option that we would be interested in exploring. If this is the case and RIDEM anticipates a long review process for work within the wetland buffer zone, we would seek a separate approval for work outside of the wetland area.

CDM has investigated the use of ground penetrating radar (GPR) and electromagnetic geophysical (EM) equipment as part of this investigation. We believe that due to the possible presence of a wide variety of material being placed in the landfill, including many different types of metal material, the use of this equipment will likely produce a significant number of false positives when searching for possible buried drums. In addition, since the depth of landfill material may at depths of up to 30 feet, the ability of this equipment to identify possible buried drums at this depth is questionable. Therefore, at this time GPR will not be used as part of this investigation.

Please call either of the undersigned at (617) 452-6000 if you have any questions or if you need additional information.

Very truly yours,

CAMP DRESSER & McKEE INC.

Draft

Matthew Dentch, P.E.
Project Manager

APPROVED BY:

Draft

Kevin J. Riley, P.E.
Principal

cc: Mr. James Zisiades, RIAC

Contents

Figures

Section 1
Introduction

Camp Dresser & McKee, Inc. (CDM) is currently under contract with the Rhode Island Airport Corporation (RIAC) to conduct a Limited Environmental Site Investigation at the former Truck Away Landfill at the T. F. Green Airport in Warwick, Rhode Island. Presently CDM is also under contract with RIAC to collect information on the wetlands and the subsurface conditions and geotechnical properties of the soils in the landfill area. Information gathered from these activities will be used in evaluating the feasibility of constructing cargo buildings, aprons and taxiways on the landfill area.

1.1 Purpose

CDM has developed this work plan for a limited environmental investigation of the landfill area for review by the Rhode Island Department of Environmental Management (RIDEM). The purpose of this work plan is to provide RIDEM with a detailed description of the planned activities at the site. This work plan will also serve as a guide for CDM field personnel overseeing the investigation.

1.2 Work Plan Objectives

This work plan details the specific objectives of this work, the data required to support these objectives and the general methods that will be used in performing the work. The scope detailed herein is not intended to include a comprehensive site investigation of the landfill area. CDM is performing this limited investigation now to take advantage of the subsurface explorations being conducted for geotechnical purposes, and to give RIAC, RIDEM, the Rhode Island Department of Transportation (RIDOT) and the Rhode Island Department of Administration (RIDOA) preliminary data concerning the potential impacts of landfill operations to soil, groundwater and/or soil gas in this area. More comprehensive investigations may be required to provide adequate information for landfill closure.

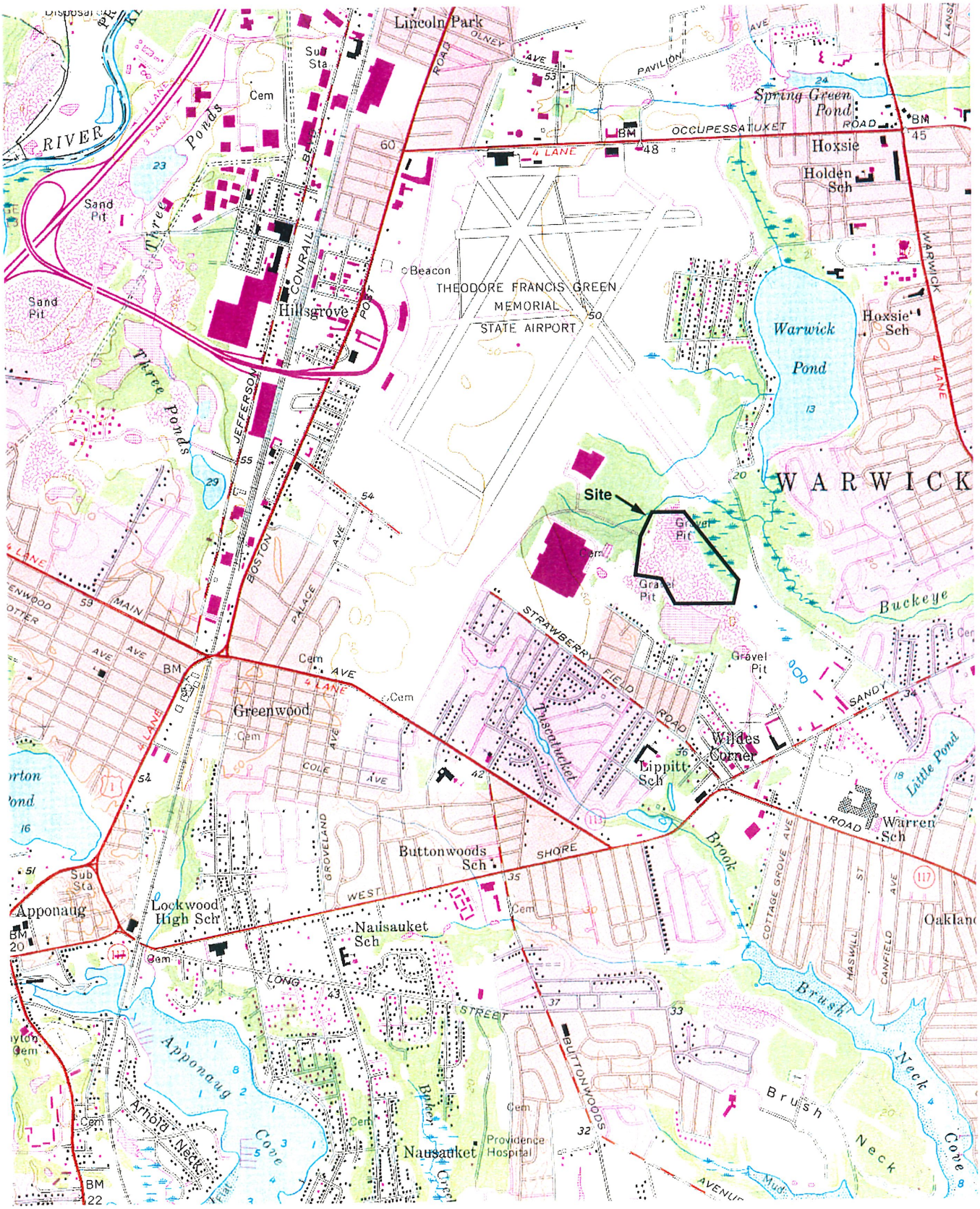
1.3 Background Information

RIAC is in the process of evaluating the feasibility of constructing up to four 30,000 square foot cargo buildings with concrete aprons and a taxiway on the landfill area at the T. F. Green Airport in Warwick, Rhode Island. The landfill area covers approximately 34 acres and is almost completely surrounded by wetlands. The landfill surface is vegetated with low growing shrubs and grasses and occasional stands of small trees with maximum height of approximately 20 feet. Ground surface over most of the central part of the landfill is relatively flat. The perimeter of the landfill is generally about 10 to 20 feet. lower than in the center. The slopes from the perimeter up to the central area are gradual (generally 5H:1V or flatter). The landfill area is bounded to the west by industrial property, to the north by wetlands and the south end of Runway 34-16, to the east by wetlands and a former City of Warwick

dump, and to the south by residential property. A site locus plan is provided on **Figure 1-1.**

Correspondence from Truk-Away and Sanitas Waste Disposal to the Division of Solid Waste Management during the 1970's suggests that the site is/was underlain by extensive deposits of peat. The peat was noted as being up to 30 ft. deep below the ground surface that existed at that time. Although the waste materials placed in the landfill are not well documented, reference is made to "rubbish and construction demolition debris." The removal of batteries from the landfill has occurred in the past. Historical news accounts indicate that oily water was disposed of in the landfill. CDM has not reviewed any other written documents that indicates hazardous materials have been disposed of in the landfill area, however.

In addition to the work outlined in this plan, a wetland delineation survey has been completed, and a topographic survey of the landfill, will be conducted at the site to locate borings, wells, soil gas probes and test pit locations and other relevant site features.



Base Map: USGS Quad - East
Greenwich, RI - 1975
Scale 1" = 2083'

Figure 1-1
Site Locus

CDM Camp Dresser & McKee Inc.

Section 2
Field Investigations

This section outlines field investigations to be performed at the site to evaluate subsurface conditions. In particular, a description of soil boring, monitoring well installation, soil gas probe installation, test pit excavation and sampling of environmental media will be presented. As previously noted, the proposed investigation is limited in nature, and a more comprehensive subsurface investigations may be proposed pending the outcome of this initial study. Field investigations for the site will also evaluate the feasibility of constructing cargo buildings, aprons and taxiways at the site. Since this work plan will be used by field personnel, reference to geotechnical portions of the work have also been included.

2.1 Soil Borings Advancement

Up to 10 test borings will be advanced by a qualified subsurface exploration contractor. Six off these locations will be designated for completion as groundwater monitoring wells and collection of soil samples for chemical analysis. The borings will be advanced through the landfilled material and at least 30 ft. into the underlying naturally deposited inorganic soils, or to the top of bedrock, whichever occurs first. Standard split-spoon samples of soil will be collected in accordance with ASTM D1586 and CDM's applicable standard operating procedure (SOP's). CDM SOPs that are applicable to this project are included in Appendix A. Samples will be collected every five feet of depth or at changes in soil strata, beginning with the first sample at the ground surface to five feet below ground surface (bgs) interval. Separate soil samples will be collected for environmental and geotechnical purposes.

Environmental samples will be screened for the presence of volatile organic compounds (VOCs) through use of a photoionization detector (PID). At each of the six boring locations where monitoring wells will be installed, the soil sample with the highest PID reading will be laboratory analyzed for total petroleum hydrocarbons (TPH) by EPA Method 418.1, VOCs by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, pesticides by EPA Method 8081, PCBs by EPA Method 8082, Total Organic Carbon (TOC) and TAL metals by EPA Method 200/6000/7000 series. Results of the environmental analyses will be included in the Limited Environmental Site Investigation Report.

Soil samples for geotechnical analyses will be collected from the naturally deposited soils only. The landfilled material will be observed and described on the test boring logs, however, geotechnical samples will not be collected. The CDM Geotechnical Laboratory in Cambridge, Massachusetts will conduct testing to aid in soil classification and the determination of the engineering properties of the soils below the landfilled material. Up to 10 grain size analyses and up to five Atterberg Limit determinations will be performed on the samples.

Auger cuttings, consisting of landfilled materials and native soils, will be brought to the landfill surface during the advancement of borings. CDM will direct the

subcontractor to segregate the waste materials from the clean soils. Test borings will be backfilled with cement-bentonite grout to an elevation no lower than the bottom of the landfilled material. Auger cuttings can be utilized to fill the borehole from the bottom of the landfilled material to the ground surface. The waste material will be replaced in the bore hole above the cement-bentonite grout elevation to the extent practical. Excess waste material will be drummed for off-site disposal if on site disposal is prohibited. CDM estimates that no more than 5 cubic yards of waste material will be generated for disposal.

Standard truck-mounted drill rigs can access the boring locations; there are no restrictions on drilling activities (height) related to the operation of the airport. Depths and locations of the borings, as well as sampling methods, will varied to meet the subsurface conditions encountered. The boring sites will be restored to as near to pre-drilling condition as is practicable and marked for future survey in the event that any locations have changed from previously surveyed staked locations.

A health and safety plan (HASP) will be developed for field activities described in this work plan. All drilling sampling and test pitting activities will be completed in Level D Personal Protective Equipment (PPE) unless breathing zone monitoring indicates work should be conducted in Level C PPE. CDM will monitor environmental conditions exposed during drilling to document that work in Level D PPE is appropriate or to determine that work should be suspended due to environmental conditions. Contingency Planning and Notification issues are discussed in Section 3.3.

2.2 Monitoring Well Installation

At six of the ten soil boring locations, CDM will complete the borings as overburden groundwater monitoring wells. Proposed monitoring well locations are shown on **Figure 2-1**. The monitoring wells will consist of Schedule 40 2-inch inside diameter (ID) polyvinyl chloride (PVC) well screen (10 feet long) with 0.02 inch slots installed seven feet below the observed groundwater table. A 2-inch ID schedule 40 PVC well riser will extend from the top of the well screen to the ground surface. Wells are to be installed and developed in accordance with applicable CDM SOPs, included in Appendix A and all wells will be completed with stick-up road boxes.

2.3 Groundwater Sampling

Two weeks after the wells have been developed, CDM will collect groundwater samples from each of the six newly installed monitoring wells. Groundwater sampling will be performed in accordance with CDM's Groundwater Sampling SOP, included in Appendix A. Purge waters will be handled in accordance with DEM Division of Site Remediation Policy Memo 95-01, Guidelines for the Management of Investigative Derived Wastes, included as Appendix C. Groundwater samples will be analyzed for the following parameters: Hazardous Substance List (HSL) VOCs according to EPA Method 8260, semi-volatile organic compounds (SVOCs) according to EPA Method 8270, TAL metals by EPA Method 200/6000/7000 series, nitrate

nitrogen, alkalinity, chemical oxygen demand, chlorides, total dissolved solids, total cyanide, sulfate, pesticides by EPA Method 8081, and PCBs by EPA Method 8082.

2.4 Soil Gas Probes

CDM will oversee two days of soil gas probe installations (approximately 15 locations) to assess the presence of landfill gas at the landfill. Appendix C continues the ASTM and CDM SOP's for soil gas monitoring. Portable gas monitoring equipment will be used to determine the concentrations of hydrogen sulfide, methane, carbon dioxide, oxygen and VOCs in shallow soil gas. Fifteen soil gas probe locations are shown on Figure 2-1.

A hand held portable hammer drill will be used to advance five foot long, 5/8-inch diameter hollow steel sampling probes into the ground. Each probe, equipped with a retractable sample point, will be driven to a depth of 3-4 feet below ground surface. After reaching the desired sample location, the probe will be extracted approximately 4 inches to sufficiently open the retractable sample tip and expose the 3 inch screened interval of the point.

The sample point will consist of a four inch length of ½ inch machined steel pipe with several 1/16 inch holes drilled through the horizontal plane. A stainless steel mesh jacket will cover the length of the sample point containing the 1/16 inch holes to prevent soil particles from entering the sample probe during sampling. Teflon tubing will be attached to the sample point and run up through the hollow probe, exiting through a special drive adapter.

The exiting end of the tubing will be attached to an electrical vacuum pump and approximately 100 - 200 probe volumes of soil gas will be purged through the probe. The dynamic purging of the soil gas probe serves to create a cone of influence encompassing soil void areas some distance, depending on soil type from the sample point, allowing for VOC determination from an extended subsurface volume. The discharge from the vacuum pump will be monitored continuously during the purging cycle with a PID, and the highest VOC concentration will be recorded. After purging, hydrogen, sulfide, methane carbon dioxide and oxygen will be measured with portable gas monitoring equipment

2.5 Test Pit Excavation

Approximately 22 test pits will be excavated around the periphery of the landfill to generally delineate the horizontal limit of the landfilled materials. Test pits will be excavated using a tracked or wheeled excavator capable of accessing all investigation locations. If waste is identified within a test pit, another test pit will be excavated 20 feet away in an attempt to locate the edge of waste. The test pits will be excavated to a maximum depth of 12 feet. After the test pitting is completed, CDM will prepare test pit logs which will provide a description of encountered materials, general strata changes, depth to groundwater and total excavation depth. The logs will note where

waste material was encountered. CDM will not collect soil samples for analysis under this activity.

It should be noted that CDM will be excavating test pits within the 50 perimeter zones of the wetlands and potentially the wetlands themselves. This information is necessary to evaluate whether landfilled material extends beneath the wetlands.

2.6 Wetland Delineation

Applied Bio-Systems Inc. of Kingston, Rhode Island and under subcontract to CDM will conduct field work to delineate the limit of ecological wetlands and document the limit of state and federal jurisdictional wetlands for seven wetland units in the vicinity of the landfill area. This information will be incorporated onto the topographic survey plans.

2.7 Site Survey

A site survey will be performed by a subcontractor. The site survey will be completed to collect the following information. The topography of the area will be developed. The topographical information will be suitable to develop 2 foot contours throughout the site area. The locations of above ground on-site facilities will be surveyed including buildings (if any), paved areas, roadways, fencing or any other distinguishing characteristics. The locations of staked soil borings, monitoring wells, soil gas probes, test pits, wetlands flags and property lines will be surveyed. The survey information will be provided by the subcontractor on a plan of suitable scale. This plan will form the base map for all future work.

2.8 Groundwater Flow Direction

CDM will measure the depth to groundwater in each of the available wells and will perform an elevation survey of well casings. The information collected will be used in conjunction with topographic survey data to develop a general overburden groundwater flow direction. A groundwater contour map will be included in the Limited Site Investigation report.

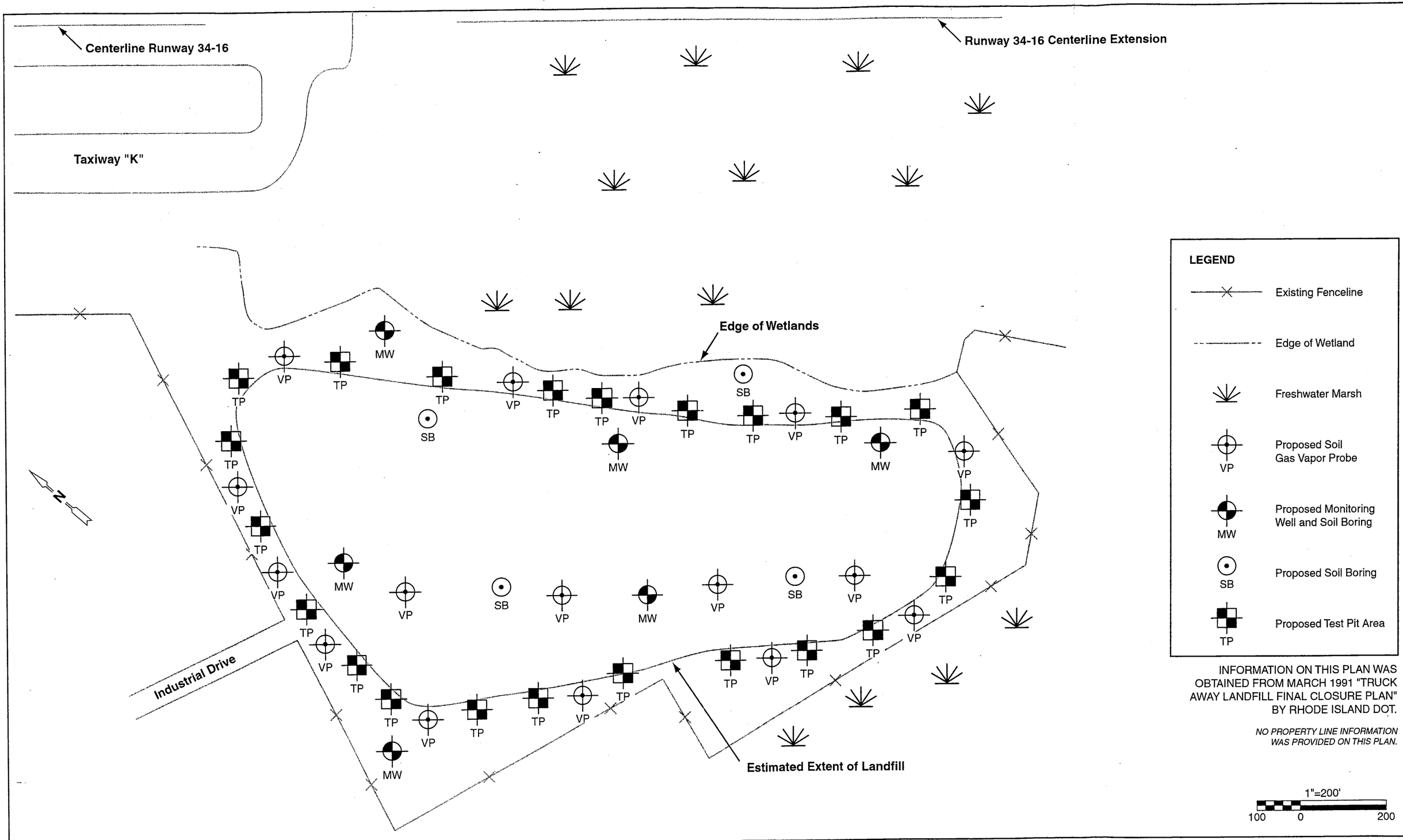


Figure 2-1
Proposed Sampling Locations

Work Plan Limited Site Investigation
Former Truck Away Landfill Site
Warwick, Rhode Island

CDM Camp Dresser & McKee Inc.

Section 3
Site Management Plan

This section presents a site management plan that addresses procedures to be employed by CDM and its subcontractors during investigation activities.

3.1 Site Access

CDM will obtain site access through RIAC, specifically for access to the former Truk-Away Landfill area. An onsite escort will be required for every trip to and from the work area. The CDM field crew will remain in radio contact with RIAC while onsite. CDM will inform RIAC at least two weeks prior to mobilization to the site so that RIAC has sufficient time to inform the appropriate facilities' officials regarding the length and type of pending field work.

3.2 Disposal of Investigation Derived Waste

The field activities discussed in Section 2 will generate solid and liquid by-products or wastes from such sources as drill cuttings, purged formation water, decontamination, disposable equipment, and protective clothing. Contractors will be required to dispose of wastes generated by their activities, in accordance with RIDEM Division of Site Remediation Policy Memo 95-01, Guidelines for the Management of Investigative Derived Wastes (IDW), included as Appendix B, any other applicable regulations regarding disposal of materials classified as hazardous waste, and the guidelines listed below.

1. All IDW generated during this investigation will be stored in DOT-approved 55-gallon drums. As necessary, drums containing liquid will be overpacked to minimize spillage.

2. Excess drill cuttings generated during sample collection will be drummed. The material will be characterized and transported off-site for disposal at an approved facility. It is estimated that no more than five cubic yards of cuttings will be generated.

3. Liquid wastes generated during sample collection or routine decontamination will be drummed. The contractor will be responsible for characterizing all liquids and submitting all appropriate samples for laboratory analysis. The contractor shall treat or dispose of liquids characterized as hazardous at an appropriate facility. In the case of water containing contaminant concentrations below the respective federal MCLs, the contractor may discharge such waters at an on-site location, after review of analytical data by CDM and concurrence by DEM.

4. Disposable personal protective equipment utilized by field personnel will be collected in polyethylene bags and disposed at a sanitary landfill.

3.3 Contingency Planning and Notification

A health and safety plan (HASP) will be developed for the field program. If hazardous materials or conditions are encountered that require a greater level of PPE, then. Current site data and the work assignment scope of work do not indicate that the proposed field activities will have the potential for imminent and substantial threats to human health. In the event that such conditions do arise, CDM will verbally notify RIAC immediately and the work will be suspended until the conditions can be assessed and the site HASP will be amended to reflect these conditions. The HSP addresses emergency response and notification procedures in detail, in the event of accidents or injuries.

3.4 Wetland Impact Mitigation

No adverse impacts to wetlands are anticipated to occur as a result of this project. The following precautions will be taken to prevent impacts to wetland resource areas:

- Hay bales will be installed before the borings and test pits are initiated on the down gradient side of the borings to prevent migration of sediments into wetland resources.

- A supply of "speedy dry" oil absorbent pads, or an approved equivalent, will be maintained with the drilling and excavation equipment at all times which will be used to contain any accidental release of oil or other petroleum products during field work.

- Boring and test pit locations will be backfilled to existing grades with drill cuttings or excavated soil. CDM representatives will be on site throughout drilling to verify the contractor adheres to these conditions.

Appendix A

CDM Standard Operating Procedures

STANDARD OPERATING PROCEDURES

FIELD PROCEDURES

SOP-FL-001
FIELD LOG BOOK CONTENT

1.0 INTRODUCTION

Information recorded in field log books include observations, data, calculations, time, weather, description of the data collection activity, methods, instruments, and results. Additionally, the log book may contain descriptions of wastes, biota, geologic material, and site features including sketches maps, or drawings as appropriate.

2.0 PREPARATION

In addition to this SOP, site personnel responsible for maintaining log books must be familiar with other pertinent SOPs. These should be consulted as necessary to obtain specific information about equipment and supplies, health and safety, sample collection, packaging, decontamination, and documentation. These procedures should be located at the field office.

Prior to use in the field, each log book should be marked with a specific control number. The field notebook will then be assigned to an individual responsible for its care and maintenance.

Field log books shall be bound with lined, consecutively numbered pages. All pages must be numbered prior to initial use of the log book. The following information shall be recorded inside the front cover of the log book:

- Field log book document number
- Activity (if the log book is to be activity-specific)
- Person and organization to whom the book is assigned, and phone number(s)
- Start date

The first five pages of the log book shall be reserved for a table of contents. Mark the first page with the heading and enter the following:

TABLE OF CONTENTS

Date/Description	Page
(Start Date)/Reserved for TOC	1-5

The remaining pages of the Table of Contents will be designated as such with "TOC" written on the top center of each page.

3.0 OPERATION

The following is a list of requirements that must be followed when using a log book:

- Record work, observations, quantities of materials, calculations, drawings, and related information directly in the log book. If data-collection forms are specified by an activity-specific plan, this information need not be duplicated in the log book. However, any forms used to record site information must be referenced in the log book.

- Do not start a new page until previous one is full or has been marked with a single diagonal line so that additional entries cannot be made. Use both sides of each page.

- Do not erase or blot out any entry at any time. Before an entry has been signed and dated, any changes may be made but care must be taken not to obliterate what was written originally. Indicate any deletion by a single line through the material to be deleted.

- Do not remove any pages from the book.

- Record as much information as possible.

Specific requirements for field log book entries include:

- Initial and date each page.

- Sign and date the final page of entries for each day.

- Initial and date all changes.

- Multiple authors must sign out the log book by inserting the following:

  Above notes authored by:

  - (Sign name)
  - (Print name)
  - (Date)

- A new author must sign and print his/her name before additional entries are made.

- Draw a diagonal line through the remainder of the final page at the end of the day.

- Record the following information on a daily basis:

  - Date and time
  - Name of individual making entry
  - Description of activity being conducted including station (i.e., well, boring, sampling location number) if appropriate
  - Weather conditions (i.e., temperature, cloud cover, precipitation, wind direction, and speed) and other pertinent data
  - Level of personnel protection to be used

Entries into the field log book shall be preceded with the time (written in military units) of the observation. The time should be recorded frequently and at the point of events or measurements that are critical to the activity being logged. All measurements made and samples collected must be recorded unless they are documented by automatic methods (e.g., data logger) or on a separate form required by an operating procedure. In these cases, the log book must reference the automatic data record or form.

At each station where a sample is collected or an observation or measurement made, a detailed description of the location of the station is required. Use a compass (include a reference to magnetic declination corrections), scale, or nearby survey markers, as appropriate. A sketch of station location may be warranted. All maps or sketches made in the log book should have descriptions of the features shown and a direction indicator. It is preferred that maps and sketches be oriented so that north is towards the top of the page.

Other events and observations that should be recorded include:

- Changes in weather that impact field activities.

- Deviations from procedures outlined in any governing documents. Also record the reason for any noted deviation.

- Problems, down-time, or delays.

- Upgrade or downgrade of personnel protection equipment.

4.0 POST-OPERATION

To guard against loss of data due to damage or disappearance of log books, copies of completed pages shall be periodically (weekly, at a minimum) and security stored at the field office. Documents which are separated from the log book shall be copied and submitted regularly and as promptly as possible to the field office. This includes all automatic data recording media (print-outs, logs, disks or tapes) and activity-specific data collection forms required by other SOPs.

At the conclusion of each activity or phase of site work, the individual responsible for the log book will ensure all entries have been appropriately signed and dated, and that corrections were made properly (single lines drawn through incorrect information, then initialed and dated). The completed log book shall be submitted to the field office records file.

5. REFERENCES

Sandia National Laboratories. 1991. Procedure for Preparing, Sampling and Analysis Plan, Site-Specific Sampling Plan, and Field Operating Procedures, QA-02-03. Albuquerque Environmental Program Department 3320. Albuquerque, New Mexico.

Sandia National Laboratories. 1992. Division 7723. Field Operation Procedure for Field Logbook Content and Control. Environmental Restoration Department. Albuquerque, New Mexico.

SOP-FL-002
SAMPLE DOCUMENTATION AND IDENTIFICATION

1.0 INTRODUCTION

The following procedures describe proper documentation to be included in field notebooks. Documentation includes describing data collection activities, logging sample locations, sample IDs, container labeling and chain-of-custody forms (see SOP-FL-013). Procedures for sample classification to insure proper labeling of samples are also included.

2.0 RESPONSIBILITIES

The field geologist/field inspector is required to oversee drilling of the boreholes, installation of monitoring wells, sample soils and groundwater, fill out field book logs, soil boring logs, monitoring well logs, submit samples for analysis, COC forms and labeling of drums. Also, the field geologist/field inspector is required to adhere to the Site Specific Health & Safety Plan. Drilling inspectors must record Health and Safety monitoring performed during drilling activities. Field book entries should state starting time of monitoring, equipment used and results.

The field geologist/field inspector will be notified by the site manager of the following:

- When and where to implement contingency borings so the extent of subsurface contamination may be better defined.
- When to request accelerated turn around times for laboratory analysis of samples. This may be the result of project schedule, excessive contamination that requires TCLP analysis, or other reasons.
- Which samples to hold for TCLP analysis.
- When to install additional groundwater monitoring wells due to evidence indicating the presence of floating product.
- When to change the sampling strategy because of contamination, borehole depth, or variation in material types.
- In order for the site manager to make the above described decisions, communication between the field team and the site manager must be thoroughly maintained.

2.0 FIELD NOTEBOOKS

Complete and thorough logging of field events is essential to a timely and accurate completion of this project. The field geologist/field inspector is responsible to account for particular actions and times for these actions of the contractor while in the field. Also, sample identification (numbers and descriptions) of field samples, duplicates samples and blank samples should also be accounted in the field book. For a particular workshift, the field book should contain the following:

- Field personnel name, contractors name, number of persons in crew, equipment used, weather, date, time, and location at start of day (boring number).
- Sample identification number, depth, time, blow counts, amount of sample recovery in split-spoon sampler, HNu or OVM reading and burmeister soil descriptions.
- Description of any unusual surface or subsurface soil conditions
- Record of Health and Safety monitoring; time, equipment and results
- Record of site accidents or incidents
- Record of any visitors
- Potential of delays
- Materials (grout, well screen, etc.) and equipment used during borehole/well installation
- Final daily tally of work completed including list of samples obtained
- Completion of daily QA/QC log sheet
- Contractor downtime, decontamination time, equipment breakdowns, movement tracking throughout the day, etc.
- Any other data that may be construed as relevant information at a later date.

The field logs should confirm the contractor's data including billing, boring logs, etc. Field notes should be photocopies weekly and returned to the site area manager by the field supervisor.

In addition, the field personnel are responsible to complete a sample log form for each boring or test pit. This log form is considered a deliverable to the client and must be complete, accurate and organized. These forms should be completed so as not to require future reference into the field books. Note observations on these forms (oil odor, etc.). These forms are to be filled out upon completion of a particular borehole. These logs are simply a sectional view of the borehole generated from the data contained in the field book.

If a borehole is completed as a monitoring well, simply note this on the form, and complete the monitoring well log. Examples of completed boring logs should be reviewed and adequate blank log forms obtained.

Monitoring well logs are required in addition to the boring log form if the borehole is completed as a monitoring well. These are to be completed in the field after a monitoring well is installed. They should include data such as screen length, riser length, materials used, etc. Examples of monitoring well logs should be reviewed and adequate blank log forms obtained.

3.0 DRUM LABELING

Labeling of drums is essential for tracking hazardous materials. Although it is the contractor's responsibility to collect, handle, and store the drums, it is the responsibility of field personnel to label these drums appropriately. There is a significant cost implication if drums are not property labeled. Unknown material must be disposed of as hazardous waste if any hazardous waste is found on-site.

The following drum labeling procedures are to be adhered to:

- Field staff shall adhere packing list envelopes to the side of the drum(s) at the completion of a boring.
- Field staff shall print with an indelible marker on information cards all information pertaining to the contents of the drum(s). If more than one drum is collected from the same borehole, each information card shall be numbered sequentially in parenthesis starting with the number one after the boring number. The information shall include:
  - Program Area
  - Boring No.(s)
  - Date collected
  - Description of contents (i.e., soil cuttings, well water, etc.)
  - Amount of water (specify in inches)
  - Fullness of drum (not including free liquid, specify in fractional form)
- Field staff shall insert information card into packing list envelope. The packing list envelope shall be sealed at this time.
- Field staff shall record in field book all information pertaining to the contents of the drum that was printed on the information card.
- Program manager, upon receipt of the analytical data for the drums, shall prepare a summary table of the analytical results on a weekly basis, and provide the designated coordinator.
- Based on the tabulated information the designated coordinator will determine and prepare the appropriate storage labels required:
  - Hazardous Waste label
  - Non-hazardous label
- The designated coordinator will fill out these labels.
- Field staff shall adhere these labels to the appropriate drums. If the information cards inside the packing list envelopes are found to be damaged they shall also be reprinted at this time.

4.0 SAMPLE IDENTIFICATION

The sample identification process is a logical labeling of the samples collected for analysis. The samples should be labeled according to the example below:

CDM - SB - 035 - 001
CDM - MW - 03 - 001
CDM - SB - 035 - 003

Where:
- CDM = for Camp Dresser & McKee
- SB = Soil Boring
- 035 = Borehole Number
- 001 = Sample Number (This must be identified on the COC)
- MW = Represents groundwater sample from Monitoring Well

SOP-FL-003
SAMPLE PRESERVATION

1.0 INTRODUCTION

Methods of preservation are generally intended to retard biological action, to retard hydrolysis of chemical compounds and complexes, to reduce volatility of constituents, and to reduce absorption effects. Preservation methods include pH control, chemical addition and refrigeration. Analytical methods commonly employed are listed in Table 1.

Sampling and preservation or samples, including required volumes and holding times are presented in Table 2. The required minimum sample volume, sample containers and analytical holding times for each analysis is also presented in Table 2.

TABLE 1

CHEMICAL AND PHYSICAL METHODS

Parameter	Matrix	Method Reference	Title	Type
Ignitibility	Liquid Organic	SW-846 Method 1010	Flash Point	Pensky-Marten Closed Cup Method
	Sludge/Scale	SW-846 Method 1010	Flash Point	same as above
Corrosivity	Liquid Organic	SW-846 Method 1110	Corrosivity	Corrosivity toward Steel
	Sludge/Scale	SW-846 Method 1110	Corrosivity	Corrosivity toward Steel
Reactivity	Liquid Organic Sludge/Scale	SW-846 Section 8.3 SW-846 Section 8.3	Reactivity	NA
TCLP	Sludge	40 CFR 261, App II; SW-846 Method 1311	Toxicity Characteristic Leaching Procedure	GC/MS (VOA, SVOA AA (Metals)
VOA	Liquid Organic	SW-846 5030/8240	Purge and Trap	GC/MS
	Sludge/Scale	SW-846 5030/8240	Purge and Trap	GC/MS
	Aqueous	SW-846 5030/8240	Purge and Trap	GC/MS
Polychlorinated Biphenyls	Liquid Organic Sludge	SW-846 3580/8080 SW-846 3540/8080	Waste Dilution Soxhlet Extraction	GC/ECD GC/ECD
Semi-Volatile Organics	Liquid Organic Soil/Sludge	SW-846 3510/8270 SW-846 3550/8270	Sep. Funnel Extension Sonication Extension	GC/MS for Semivolatiles GC/MS for Semivolatiles
Polynuclear Aromatic Hydrocarbons	Liquid Organic	SW-846 3510/8270	Sep. Funnel Extension	GC/MS for Semivolatiles
	Soil/Sludge	SW-846 3550/8270	Sonication Extension	GC/MS for Semivolatiles

TABLE 1

CHEMICAL AND PHYSICAL METHODS (Continued)

Parameter	Matrix	Method Reference	Title	Type
Total Petroleum	Liquid Organic	EPA Method 9071/418.1	Soxhlet Extraction	
Hydrocarbons	Sludge	SW-846 Method 9070/418.1	Total Recoverable Petroleum Hydrocarbons	IR Spectrophotometric
Hydrocarbons	Aqueous	SW-846 Method 9040	pH Electrometric Measurement	pH Meter
BOD	Aqueous	EPA Method 405.1	Biochemical Oxygen Demand	5 Days, 20°C
TOC	Aqueous	SW-846 9060	Total Organic Carbon	Carbonaceons Analyzer
Oil & Grease	Aqueous	SW-846 Method 9070	Total Recoverable Oil & Grease	Gravimetric, Sep Funnel Extraction
Arsenic	Liquid Organic Sludge Aqueous	SW-846 3050/7060 SW-846 3050/7060 SW-846 3020/7060	Acid Digestion of Sludge, Soil Acid Digestion of Aqueous	AA, Furnace Technique Same as Above
Ba, Cr and Ag	Liquid Organic Sludge Aqueous	SW-846 3050/6010 SW-846 3050/6010 SW-846 3010/6010	Acid Digestion of Sludge Acid Digestion of Aqueous	ICP Emission Spectroscopy Same as above

TABLE 1

CHEMICAL AND PHYSICAL METHODS (Continued)

Parameter	Matrix	Method Reference	Title	Type
Cadmium	Liquid Organic	SW-846 3050/7131	Acid Digestion of Sludge, Soil	AA, Furnace Technique
	Sludge	SW-846 3050/7131		
	Aqueous	SW-846 3020/7131	Acid Digestion of Aqueous	Same as above
Lead	Liquid Organic	SW-846 3050/6010	Acid Digestion of Sludge/Soil	AA, Furnace Technique
	Sludge	SW-846 3050/6010		
	Aqueous	SW-846 3020/7421	Acid Digestion of Aqueous	Same as above
Mercury	Liquid Organic	SW-846 7470	Acid Digestion of Sludge, Soil	Manual Cold - Vapor Technique
	Sludge	SW-846 7471	--	Same as above
	Aqueous	SW-846 7470		
Selenium	Liquid Organic	SW-846 3050/6010	Acid Digestion of Sludge, Soil	AA, Furnace Techniques
	Sludge	SW-846 3050/6010		Same as above
	Aqueous	SW-846 3020/7740	Acid Digestion of Aqueous	

References:

1. Test Methods for Evaluating Solid Waste, EPA SW-846, Third Edition, November 1986.

2. Method for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

TABLE 2

SAMPLING AND PRESERVATION OF SAMPLES

Measurement[1]	Vol. (ml)	Container[2]	Preservative	Holding Time[3]
PHYSICAL PROPERTIES				
Color	100	P,G	Cool, 4°	24 Hrs.
Conductance	250	P,G	Cool, 4°	28 Days
Hardness	200	P,G	Cool, 4° HNO_3 to pH <2	6 Mos.
Odor	500	G only	Cool, 4°	24 Hrs.
pH	25	P,G	Det. on site	6 Hrs.
Residue				
Filterable	300	P,G	Cool, 4°C	7 Days
Non-Filterable	300	P,G	Cool, 4°C	7 Days
Total	300	P,G	Cool, 4°C	7 Days
Volatile	300	P,G	Cool, 4°C	7 Days
Settleable Matter	1000	P,G	Non Req.	24 Hrs.
Temperature	1000	P,G	Det. on site	No Holding
Turbidity	200	P,G	Cool, 4°C	48 Hrs.
METALS				
Dissolved	500	P,G	Filter on site HNO_3 to pH 2	6 Mos.
Suspended	500	P.G.	Filter on site	6 Mos.
Total	500	P,G	HNO_3 to pH 2	6 Mos.
Mercury Dissolved	300	P,G	Filter HNO_3 to pH <2	28 Days(a) 13 Days(p)
Total	300	P,G	HNO_3 to pH <2	28 Days[G] 13 Days[P]

TABLE 2

SAMPLING AND PRESERVATION OF SAMPLES (Continued)

Measurement[1]	Vol. (ml)	Container[2]	Preservative	Holding Time[3]
INORGANICS, NON-METALLICS				
Acidity	200	P,G	None Req.	14 Days
Alkalinity	200	P,G	Cool, 4°C	14 Days
Chloride	50	P,G	None Req.	7 Days
Chlorine	200	P,G	Det. on site	No Holding
Cyanides	1000	P,G	Cool, 4°C NaOH to pH 12	14 Days
Total Petroleum Hydrocarbons	1000	G	Cool, 4°C H_2SO_4 to pH <2	28 Days
Semivolaties	1000	P	Cool, 4°C	7 Days for extraction 40 Days for analysis
Volatiles	(2)X40	G	HCl to pH <2 Cool, 4°C	14 Days
Pesticides/PCB	1000	G	Cool, 4°C	7 Days for extraction 40 Days for Analysis
SOILS				
Total Petroleum Hydrocarbons	500	G(jar)	Cool, 4°C	14 Days for extraction, 40 Days for analysis
Semivolatiles	500	G(jar)	Cool, 4°C	7 Days for extraction, 40 Days for analysis

TABLE 2

SAMPLING AND PRESERVATION OF SAMPLES (Continued)

Measurement[1]	Vol. (ml)	Container[2]	Preservative	Holding Time[3]
Pesticides/PCB	500	G(jar)	Cool, 4°C	7 Days for extraction, 40 Days for analysis
Volatiles	60	G(jar)	Cool, 4°C	14 Days

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(2) Plastic (P) or Glass (G). For metals, polyethylene with a polypropylene cap (no liner) is preferred.

(3) Holding times listed are recommended for properly preserved samples based on currently available data.

SOP-FL-005
CHAIN-OF-CUSTODY PROCEDURES

1.0 INTRODUCTION

This section describes the procedures used to ensure that sample integrity and chain-of-custody are maintained throughout the sampling and analysis program. Chain-of-custody procedures (COC) provide documentation of sample handling from the time of collection until its disposal by a licensed waste hauler. This documentation is essential in assuring that each sample collected is of known and ascertainable quality.

The chain-of-custody begins at the time of sample collection. Sample collection is documented in the field notebooks in accordance with the specified SOP. At the same time, the sampler fills out the label on the sample container with the following information:

- Sample ID code
- Sampler initials
- Date and time of sample collection

A "Chain-of-Custody Record" form is filled out for each sample type at each sampling location. Each time the samples are transferred to another custodian or to the laboratory, the signatures of the people relinquishing the sample and receiving the sample, as well as the time and date, are documented. Labels will be filled out with an indelible, waterproof, marking pen.

A sample Chain-of-Custody Record is shown in Figure 1. The actual chain-of-custody record is a three part form. The original form is retained by the laboratory. The person relinquishing the samples keeps a copy of the form at the time of sample submittal. This form is then returned to the site manager or person in charge of data coordination.

The Chain-of-Custody Record will be placed in a Ziplock bag and placed inside of all shipping and transport containers. All samples will be hand delivered or shipped by Federal Express to the laboratory specified by the Sampling and Analytical Coordinator. Samples should be packed so that no breakage will occur.

CHAIN OF CUSTODY RECORD

Camp Dresser & McKee Inc. **CDM**

PROJECT NAME _____ PROJECT NUMBER _____

Field Log Book Reference No. _____

SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	SAMPLE TYPE	ANALYSES: EXTR. ORG.	ANALYSES: VOA	ANALYSES: PEST./PCB	ANALYSES: TRACE METALS	NUMBER OF CONTAINERS	LOG BOOK PG NO	REMARKS

SAMPLED BY (SIGN) _____ / _____ / _____

RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)	RELINQUISHED BY (SIGN)
① _____	② _____	_____	④ _____	⑤ _____
DATE/TIME (/)	DATE/TIME (/)	DATE/TIME (/)	DATE/TIME (/)	DATE/TIME (/)
RECEIVED BY (SIGN)	**RECEIVED BY (SIGN)**	**RECEIVED BY (SIGN)**	**RECEIVED BY (SIGN)**	**RECEIVED BY (SIGN)**
① _____	② _____	③ _____	④ _____	⑤ _____
DATE/TIME (/)	DATE/TIME (/)	DATE/TIME (/)	DATE/TIME (/)	DATE/TIME (/)

METHOD OF SHIPMENT	SHIPPED BY (SIGN)	RECEIVED FOR LABORATORY BY (SIGN)	DATE/TIME
_____	_____	_____	(/)

CHAIN-OF-CUSTODY RECORD
FIGURE 1

SOP-FL-006
FIELD QUALITY CONTROL SAMPLES

1.0 INTRODUCTION

In order to maintain quality assurance and quality control in both the field and the laboratory, additional samples such as trip blanks, duplicates, field blanks, split samples, performance evaluation samples and background samples will be collected. Each type of QA/QC sample is described below.

2.0 QUALITY CONTROL FOR SOIL SAMPLING

Approximately 10 percent of all soil samples analyzed should be QA/QC samples. The exact percentage will be specified in the QAP. These samples act as a verification of appropriate field and laboratory procedures. These samples should be recorded in the field book but should not be identified on the Chain-of-Custody (COC) form other than with an MD (Miscellaneous Discrete). All QA/QC samples should be numbered sequentially with other field samples on the soil log form. The following is a breakdown of types of QA/QC samples that are to be taken:

2.1 Duplicate Samples

Approximately ten percent of all soil samples analyzed should be duplicate samples. The exact percentage will be specified in the QAP. Soil duplicates shall be field-homogenized soils of UD, LD, or MD samples. To ensure laboratory "blind" analyses, duplicate samples will be recorded as MD samples on sample containers and the COC forms. The actual identification of the duplicate samples shall be recorded in the field book. Duplicate samples are collected from the same split spoon sampler, homogenized in the field and analyzed for the same compounds.

Soil Blanks

Approximately two percent of all soil samples analyzed should be soil blanks. The exact percentage will be specified in the QAP. Soil blanks consist of filling VOA jars with sand that has been certified to be free of all volatile organic compounds. Soil blanks are submitted as "blind" samples to the different laboratories for analysis of volatile organic compounds and will be recorded as MD samples on sample containers and the COC forms. The purpose of these samples is to detect additional sources of contamination that might potentially influence contaminant values reported in actual site samples.

2.2 Water

Rinsate Blanks

Approximately two percent of all soil samples analyzed should be rinsate blanks. The exact percentage will be specified in the QAP. Rinsate blanks are collected after a sample is taken and the equipment used (i.e., split spoon sampler) has been decontaminated. Distilled water is then poured over the decontaminated sampling equipment and collected in sample jars for analysis. It should be documented in the field book which soil sample preceded the rinsate blank and which soil sample followed the rinsate blank for the equipment used. To ensure laboratory "blind analyses", rinsate blanks will be recorded as GW (groundwater) samples on sample containers and the COC forms.

QA/QC Log Sheet

At the end of each day a QA/QC sample log sheet should be completed by the field supervisor and forwarded to the site manager. The laboratory does not receive a copy of this QA/QC sheet.

3.0 QUALITY CONTROL FOR GROUNDWATER SAMPLING

Approximately ten percent of all groundwater samples analyzed should be QA/QC samples. The exact percentage will be specified in the QAP. These samples act as a verification of appropriate field and laboratory procedures. These samples should be recorded in the field book but should not be identified on the COC form as a QA/QC sample. All QA/QC samples should be numbered sequentially with other field samples. The following is a breakdown of types of QA/QC samples that are to be taken:

3.1 Duplicate Samples

Approximately ten percent of all groundwater samples analyzed should be duplicate samples. The exact percentage will be specified in the QAP. To ensure laboratory "blind" analysis, duplicate samples will be recorded with the well I.D. number and the next sequential sample number on sample containers and the COC forms. Duplicate samples are collected from the same bailer and analyzed for the same compounds.

3.2 Trip Blanks

Approximately two percent of all groundwater samples analyzed should be trip blanks. The exact percentage will be specified in the QAP. Trip blanks are VOA vials filled with distilled water prior to going out in the field. These prefilled vials are to be carried with the sample bottles and samples and should remain sealed the entire time. It should be documented in the field book which groundwater samples were collected and transported with the trip blank.

3.3 Rinsate Blanks

Approximately two percent of all groundwater samples analyzed should be rinsate blanks. The exact percentage will be specified in the QAP. Rinsate blanks are collected after a sample is taken and the equipment used (i.e., bailer) has been decontaminated. Distilled water is then poured over the decontaminated sampling equipment and collected in sample jars for analysis. It should be documented in the field book which groundwater sample preceded the rinsate blank and which sample followed the rinsate blank for the equipment used.

4.0 CHAIN-OF-CUSTODY FORMS

The Chain-of-Custody (COC) forms are a paper trail system that follows the samples collected and indicates which laboratory analyses are to be performed on which samples. Each sample should be clearly labeled and listed on the COC. The laboratory will only perform analyses on samples indicated with a UD, UC, LD, or MD, all other samples should be indicated with a "HOLD" designation. By labeling a sample "HOLD", the laboratory will store the sample until further instruction is given. Do not check the request for analyses blocks on the COC for samples designated with "HOLD" Status. **Never indicate duplicate or blank samples on a COC.**

It is the responsibility of the field supervisor to coordinate COC forms and supply copies of all COC to the site manager for data management use.

SOP-FL-007
SOIL BORING LOGS

1.0 INTRODUCTION

Geological logging, as previously defined, includes keeping a detailed record of drilling (or excavating) and a geological description of materials on a prepared form. Geological logs are used for all types of drilling and exploratory excavations and include descriptions of both soil and rock. Accurate and consistent descriptions are imperative.

2.0 LOG FORM

When drilling in soils or unconsolidated deposits, the log should be kept on a standard Soil Boring Log Form (see Figure 1). The following basic information should be entered on the heading of each log sheet:

- Project name and number
- Boring or well number
- Location (approximate in relation to an identifiable landmark; will be surveyed)
- Elevation (approximate at the time; will be surveyed)
- Name of drilling contractor
- Drilling method and equipment
- Water level
- Start and finish (time and date)
- Name of logger

The following technical information is recorded on the logs:

- Depth of sample below surface
- Sample interval
- Sample type and number
- Length of sample recovered
- Standard penetration test (ASTM-D1586) results if applicable
- Soil description and classification
- Graphic soil symbols
- HNu/OVA/OVM readings

In addition to the items listed above, all pertinent observations about drilling rate, equipment operation, or unusual conditions should be noted. Such information might include the following:

- Size of casing used and method of installation
- Rig reactions such as chatter, rod drops, and bouncing
- Drilling rate changes
- Depth and percentage of fluid losses
- Changes in fluid color or consistency
- Material changes
- Zones of caving or heaving

FIGURE 1

SOIL BORING LOG FORM

CDM Camp Dresser & McKee

Boring / Well No. _____

Sample Log
Well Installation and Completion Data

Program Area _____ Design Package _____ Parcel No. _____ Job No. _____
Date Drilled _____ Boring Co. _____ Screen Length _____ Total Depth _____
Boring Method Used _____ Well Casing Size & Type _____
Field Geologist _____ Organic Vapor Instrument(s) Used _____ Water Table Depth _____

Depth (feet)	Samp. No.	Sample Interval	Adv./ Recov.	Org. Vap. - PPM	Compos./ Discreet	Sample I.D.	Stratum	Remarks/ Well Construction Info.

3.0 SOIL CLASSIFICATION

Description of soils (well logging) should be done in accordance with the Unified Soil Classification System (USCS) as described in ASTM D2487-69 (1975): Test Method for Classification of Soils for Engineering Purposes. The approach and format should generally conform to ASTM D2488-69 (1975): Recommended Practice of Description of Soils (Visual-Manual Procedure). Alternatively, the Burmeister system of soil description may be used. Because the Burmeister system relies heavily on handling the soil, it should not be used in areas of severe soil contamination.

The soil description should be concise and should stress major constituents and characteristics. Soil descriptions should be given in a consistent order and format. The following order is as given in ASTM D2488:

- Soil name. The basic name of the predominant constituent and a single-word modifier indicating the major subordinate constituent.
- Gradation or plasticity. For granular soil (sands or gravels) that should be described as well-graded, poorly graded, uniform, or gap-graded, depending on the gradation of the minus 3-inch fraction. Cohesive soil (silts or clays) should be described as nonplastic, slightly plastic, moderately plastic, or highly plastic, depending on the results of the manual evaluation for plasticity as described in ASTM D2488.
- Particle size distribution. An estimate of the percentage and grain-size range of each of the soil's subordinate constituents with emphasis on clay-particle constituents. This description may also include a description of angularity. This parameter is critical for assessing hydrogeology of the site and should be carefully and fully documented.
- Color. The color of the soil using Munsell notation.
- Moisture content. The amount of soil moisture, described as dry, moist, or wet.
- Relative density or consistency. An estimate of density of a granular soil or consistency of a cohesive soil, usually based on standard penetration test results (see Table 1).
- Soil texture and structure. Description of particle size distribution, arrangement of particles into aggregates, and their structure. This description includes joints, fissures, slicken-sides, bedding, veins, root holes, debris, organic content, and residual or relic structure, as well as other characteristics that may influence the movement or retention of water or contaminants.
- Relative permeability. An estimate of the permeability based on visual examination of materials (e.g., high permeability for coarse sand and gravel versus low permeability for silty clay). The estimate should address presence and condition of fractures (open, iron-stand, calcite-filled, open but clay-lined, etc.), as well as fracture density and orientation.

TABLE 1

RELATIVE DENSITY OF NONCOHESIVE SOIL

Blows/Ft	Relative Density	Field Test
0-4	Very loose	Easily penetrated with 1/2-inch steel rod pushed by hand
5-10	Loose	Easily penetrated with 1/2-inch steel rod pushed by hand
11-30	Medium	Easily penetrated with 1/2-inch steel rod driven with 5-lb hammer
31-50	Dense	Penetrated a foot with 1/2-inch steel rod driven with 5-lb hammer
>50	Very dense	Penetrated only a few inches with 1/2-inch steel rod driven with 5-lb hammer

CONSISTENCY OF COHESIVE SOIL

Blows/Ft	Consistency	Pocket Penetrometer (TSF)*	Torvane (TSF)	Field Test
<2	Very soft	<0.25	<0.12	Easily penetrated several inches by fist
2-4	soft	0.25-0.8	0.12-0.25	Easily penetrated several inches by thumb
5-8	Firm	0.50-1.0	0.25-0.5	Can be penetrated several inches by thumb with moderate effort
9-15	Stiff	1.0-2.0	0.5-1.0	Readily indented by thumb but penetrated only with great effort
16-30	Very stiff	2.0-4.0	1.0-2.0	Readily indented by thumbnail
>30	Hard	>4.0	>2.0	Indented with difficulty by thumbnail

*TSF -- Tons per square foot.

- Local geologic name. Any specific local name or a generic name (i.e., alluvium, loess). Also use of Unified Soil Classification System of symbols.

The soil logs should also include a complete description of any tests run in the borehole; placement and construction details of piezometers, wells, and other monitoring equipment; abandonment records; geophysical logging techniques used; and notes on readings obtained by air monitoring instruments.

4.0 ROCK CORE LOGGING

The procedure to properly record core logging includes:

- Record the depth of the top and the bottom of the core run.
- Record the core recovery (CR) of each run. The percentage of core recovered is:

$$CR = \frac{\text{Total length of core recovered}}{\text{Total length of core drilled}} \times 100$$

- Designate areas of suspected core loss based on drill behavior and rock quality. Core loss is often indicated by: fragmented core, polishing, circular core ends, rounded edges on core pieces, or immediately beneath hard fragments in soft rock. Routinely placing core loss at the top or bottom of the core run can lead to significant errors during evaluation. Note the reason for core loss, i.e., soft rock - washed away hard rock ground up by drilling, or malfunction of equipment during drilling - mislatch.
- Often a length of core is left at the bottom of the hole and recovered during the next core run. Unless properly handled, this condition may lead to significant errors. The preferred method to correct this situation is to carefully inspect the upper part of the recovered core for marks made by the core catcher or drill bit during the previous run. If they are identified, break the core and insert the run marker at proper location.
- Log the core in as much detail as possible depending upon the local geology and project requirements. The description should include:
  - Rock type
  - Color
  - Grain size
  - Mineralogy
  - Bedding thickness, dip and type (i.e., stylolitic or shale partings)
  - Natural joints and fractures including frequency, dip, second, any coatings or fillings. A graphical representation of these features may also be desirable.

- Additional data in sedimentary rocks includes:
    - Sorting
    - Cementation
    - Density or compaction
    - Rounding

The core should be logged as quickly as possible after removal from the hole. Some materials may degrade rapidly upon exposure, resulting in apparently poor rock, which was not actually present in the subsurface.
Check carefully each core end and try to determine if the fracture is natural or mechanical in origin. Mechanical fractures often can be identified by their orientation, the absence of secondary coatings or filling and slickensides, and its fit with the adjacent core piece. If doubt exists, consider it a natural fracture. If it is determined that the fracture is mechanical, ignore it and consider the two pieces of core as a single piece.

SOP-FL-008
MONITORING WELL INSTALLATION

1.0 INTRODUCTION

This SOP discusses the aspects of installing monitoring wells. It provides the reader with the methodology for siting monitoring well locations for the standard operating procedures (SAP). It provides procedures for well design and well construction to aid in the development of drilling subcontracts. Drilling operation and well development guidelines are presented to aid the reader in the oversight of the installation of monitoring wells. Additionally, slug test procedures have been outlined in SOP-FL-004 to perform insitu permeability tests on a monitoring well.

The principal reason that monitoring wells are constructed is to collect groundwater samples that, upon analysis, can be used to delineate a contaminant plume and track movement of specific chemical or biological constituents. A secondary consideration is the determination of the physical characteristics of the groundwater flow system to establish flow direction, transmissivity, quantity, etc. The spatial and vertical locations of monitoring wells are important. Of equal importance are the design and construction of monitoring wells that will provide easily obtainable samples and yield reliable, defensible, meaningful information. In general, monitoring well design and construction follows production well design and construction techniques. However, emphasis is placed on the effect these practices may have on the chemistry of the water samples being collected rather than on maximizing well efficiency.

From this emphasis, it follows that an understanding of the chemistry of the suspected pollutants and of the geologic setting in which the monitoring wells are constructed plays a major role in determining the drilling technique and materials used.

2.0 WELL SITING

The following procedures should be followed:

- Review and familiarize oneself with pertinent proposal sections and specifications. Review and familiarize oneself with subcontractors contracts. Review and familiarize oneself with any regulations governing how, where or when the well is drilled. Review and familiarize oneself with data (supplied by the Client, or any other data available) used for program planning.

- Identify well site on a topo map or other suitable project base map. Contact landowner at the beginning of well siting. Inquire whether the proposed drill locations will interfere with the landowner's established land use. Unless the property is wholly owned by the client, then the landowner is always contacted before entering the property, even if he is leasing back the property from the client.

- Check route to insure a drill rig can access the proposed well site. Plan routes which require the least disturbance of natural vegetation or natural countryside conditions and which would not require grading or other types of work by i.e., backhoes, etc.

- The well site should be reasonably level and absent of large boulders or other hazardous obstructions.

- Check to insure absence of buried high pressure gas, or oil or water lines. If any lines are present relocate the well site a safe distance away from them. Be sure to check with the driller to insure his agreement.

- Check to insure absence of overhead power transmission lines. If any overhead power lines are present, relocate the well site a safe distance away from them. Be sure to check with the driller to insure his agreement.

- If practical, make arrangements to have any necessary earthen mud pits excavated prior to setting the rig over the well location. This needs some input by the driller and greatly reduces (in some cases) set up and starting time.

- Stake the well location with a 1/4" x 1" lath marked with the well number and, if known, or if necessary, the total depth (T.D.).

- Pre-drilling (on-site) meeting with drilling and logging contractors. Brief the contractors on access routes to well site locations, numbering sequence, any potential access problems and general T.D. estimates. Establish a chain of command and responsibility for personnel involved. Review project objectives and procedures with contractors.

- Consult landowner about water source and access, then notify the driller of these decisions.

- Explain to the driller the need for care and accurate retrieval of drill cuttings and, if necessary, placement and accounting of materials during well completion. Explain to the geophysical truck operator any specific needs you have or results you require from his equipment such as an expanded natural gamma scale or reduced sensitivity on the spontaneous potential (S.P.) log, etc.

3.0 WELL DESIGN

The following procedures should be followed:

- Examine the geophysical log and determine the exact interval(s) and depth(s) of the completion zone(s). Calculate the quantity of slotted casing or screen, blank casing, sealing materials, gravel pack and cement necessary to complete the well.

- Use a cementing company handbook (e.g., Halliburton or Dowell) to calculate the quantities of gravel pack, sealing materials and cement. If one of these is not available then figuring the volume of the bore hole (r_B2 x L) minus the volume of the casing (r_C2 x L) will yield volume per linear foot.

  A cubic foot of silica sand weighs 100 pounds. Frequently silica sand is packaged in 100 pound sacks but should be purchased and delivered in bulk quantities. A five gallon bucket is equal to 0.67 cubic feet. Dividing the determined or calculated volume between the well bore and the outside of the casing(s) into 0.67 cubic feet per bucket will yield approximately the number of feet per bucket of silica sand. Dividing the total interval of the intended gravel pack by the number of feet per bucket of gravel pack will yield approximately how many buckets of gravel will be required. This same method can be used if the silica sand arrives in 1-cubic foot sacks (100 lbs) except the final value is approximately the number of feet per sack of silica sand.

  Cement usually comes in 94 pound sacks and can be mixed in the field to obtain volumes between 0.88 cubic feet per sack to 1.50 cubic foot per sack. See the table on the next page for the most common cement slurry mixtures.

  The calculation to determine the amount of cement needed for seals, caps or plugs is governed by the volume of mixture per sack desired. This volume should be specified either in the project proposal or the drillers' contract.. If there is any doubt, then consult the hydrogeologist in charge. Determine the amount of cement in the same manner as the silica sand calculation for the gravel pack.

  Clay seals are routinely placed in a well completion above the gravel or filter pack and below the cement or grout cap or plug. The clay seals are generally a bentonite clay and before swelling (in the bore hole) has the form of 1/4" to 1/2" tablets. A common type of bentonite tablets are American Colloid Volclay Tablets. The tablets generally come in plastic containers of 20 and 50 pounds but can also arrive in boxes or cloth sacks.

Water-Cement Ratio (gals. water per sack)	Weight per Gallon of Slurry (lbs)	Volume of Mixture per sack (cu. ft.)
7 1/2	14.1	1.50
7	14.4	1.43
6 1/2	14.7	1.35
6	15.0	1.28
5 1/2	15.4	1.21
5	15.8	1.14
4 1/2	16.25	1.08
4	16.50	1.00
3 1/2	17.35	0.95
3	18.1	0.88

The volume of the bentonite tablets needed for a specific seal thickness can is calculated in the same manner as was done for the gravel pack and cement requirements.

These methods of estimating the quantity of materials to be used in any specific well completion are crude at best. There may exist portions of the bore hole that are of a larger diameter, due to erosion during drilling, or sections of a somewhat smaller diameter due to swelling conditions; the estimated quantities seem always to be either too little or too much.

Note: Rig stand-by time, while waiting on supplies, is paid at an hourly rate as is well completion. The more quickly the completion is done the lower the cost per foot for the well.

Measure all materials twice during the well construction. First, when estimating the quantity of supplies needed for the completion, second, during well construction. Keep the first estimate in the daily log book record the actual (second measurement) intervals (tops and bottoms), quantity and type of materials placed in the well recorded on the appropriate forms

4.0 WELL CONSTRUCTION

The following procedures should be followed:

4.1 Final Design of Casing - Screen/Slotted Casing String(s)

If there is any doubt about the final design of the casing string, based on data from the pilot hole or the individual drill holes scheduled for completion, verify the design with the hydrogeologist in charge.

It is the rig hydrogeologist's responsibility to insure adequate supplies are maintained at each well site even though it may be the contractors responsibility for supplying the materials.

4.2 Installing Casing (Slotted/Screen Casing String(s))

1) Plastic or Polyvinylchloride (PVC) Casing -

Join all 10 foot lengths of casing (blank and screen) by flush-joint threading. All pipe is to be cut with a pipe cutting tool which leaves a smooth, square end. Sawing is not permitted.

2) Steel Welded or Standard Threaded - Coupled (STC) Casing -

The steel welded casing-slotted/screen casing string(s) are joined at a smooth, flat joint and welded. Accomplish alignment using both a carpenters level (or other suitable level) and a casing-alignment clamp. If the steel casing is the threaded and coupled-type casing then alignment is insured by not cross-threading the couple and the pipe. Lubricate the joint with a suitable grease and tighten with pipe wrenches, chain tongs or power tongs until the string is screwed together tight enough to prevent unscrewing or shearing out of the threaded joint.

3) A complete casing-slotted/screen casing string tally is kept by both the hydrogeologist and the contractor. Seal the bottom on the casing-slotted/screen casing string with a cap, glued and screwed permanently in place.

4.3 Installing Filter Material (Gravel Pack)

1) Place the filter material downhole using a tremie pipe. The length of pipe should end no more than 20 feet above the bottom of the hole, or the bottom of the interval to receive the filter pack. Gradually lift removing sections of pipe, as the filter material being placed in the hole rises. Check the height of the filter material periodically with the tremie pipe.

2) Mix clean water with the filter material to facilitate its downward movement and to help prevent clogging up the tremie pipe.

3) Place the filter material continuously at a rate which prevents bridging either in the tremie pipe in the bore hole.

4) The filter material shall be installed to levels pre-determined by the hydrogeologist. The exact depth for each well is determined from the final well design. However, generally the top of the filter material will be 5 feet above the top of the highest slotted/screened interval.

5) Following placement of the filter material "sound" or "tag" this depth with the tremie pipe to insure it is at the prescribed level.

4.4 Installing Bentonite Pellet Seals (Blanket)

Following the installation of the filter material place a bentonite pellet blanket seal on top of the filter material to prevent contamination of the filter pack by the grout.

1) The actual amount of the annulus which is filled with bentonite pellets may vary from completion to completion but a minimum of 6 inches of the annulus should be filled with bentonite by gravity feed from the surface. The tremie pipe remains in the bore hold during gravity feed of the bentonite pellets. Calculate the exact volume of pellets needing placement.

2) Following placement of the bentonite pellets the depth is tagged with the tremie pipe to insure they are at the desired level. This is done carefully to prevent plugging of the tremie pipe.

4.5 Grouting

1) Grout the annular space above the bentonite pellets as directed by the hydrogeologist.

2) The grouted volume of annular space will vary from completion to completion, and sometimes within the same completion. Generally, if the annular space exceeds approximately 20 feet then the grouting is done in more than one stage. Take care to insure that the grout does not displace the bentonite seal or exceed (in weight) the collapse strength of the casing.

3) The methods of mixing grout in the field are numerous. The first concern is that the slurry mixture is fluid enough for placement by tremie pipe and heavy enough to give the desired strength and sealing properties required. Reference to the table from Halliburton Cementing Tables, 1979 or some other suitable source for the amount of water per sack, and then measure accurately into a large tub (water trough) or steel pit. Mix the correct number of bags of cement with the water at a rate which prevents, clotting or settling out of dry, unmixed cement. Usually this procedure is accomplished with a portable pump which sucks the water or cement mixture in and then expels it under pressure through a hose which is used in a jetting fashion at the opposite end of the tank, pit or trough.

   Grout also can be mixed using a shovel or hoe. Generally, the grout is placed on the side of the tub, the bag is ruptured, and the cement is slowly added to the water. If the cement has hard spots place on a screen of approximately 1/4" mesh attached to some type of frame which is placed across the mixing tub. The cement is then "filtered" for the larger; hard pieces or blocks.

4) Add, near the end of the mixing stage, approximately 2 to 4 percent calcium chloride. The calcium chloride reduces the curing time for the grout. Less than 2 percent is of little use and in excess of 4 percent will not decrease the curing time beyond an optimum period. However, an excess (greater than 4 percent) will not harm the system either. Sometimes it is also desirable to mix approximately 2 percent Bentonite with the cement. This percentage of bentonite offsets shrinkage in the grout when it hardens.

5) Pumping or Pouring Grout

Place the mixed grout above the bentonite pellets. The time between placement of the bentonite pellets and the grout should not be less than 15 to 20 minutes. This allows the pellets to settle to the top of the gravel pack and to begin to swell, while not allowing the grout to harden.

a) The grout can either be pumped down the tremie pipe by same pump used for jetting or it can be poured by buckets through a funnel into the tremie pipe. Displacement of the bore hole fluid is almost certain because the grout slurry weighs more than the residual borehole fluid (10 or 11 pounds per gallon for the mud versus 14 to 18 pounds per gallon for the grout).

b) Except under rare circumstances, grout is never poured from the surface nor is it ever poured into standing water.

c) Following pumping, or placement, of the grout seal, rinse the pipe with clear water and remove. Rinsing is accomplished by pouring clear water behind the grout prior to pulling the tremie.

d) Grout the remainder of the hole by gravity feed from the surface as directed by the hydrogeologist. The quantity of grout placed from the surface should not exceed the collapse strength of the casing and should not be initiated prior to the curing of the grout seal above the bentonite pellets.

e) The best documentation of well construction is to geophysically log the completed well using Density and Natural Gamma techniques. These curves will allow depth-verification of gravel pack, bentonite and grouted intervals in addition to the actual depth to the protective cap at the bottom of the casing-slotted/screen casing string. This technique is limited to materials other than steel casing strings and to budget constraints.

5.0 DRILLING OPERATIONS

5.1 Drilling

If the drill hole was initially drilled as a pilot hole or core hole then it may need reaming to a larger diameter to facilitate construction as a production/monitoring well. The diameter will depend on several factors and may vary from project to project. The ultimate responsibility for hole diameter is a combination of the needs of the hydrogeologist in charge and rig capabilities.

At the onset of reaming record starting time and date on the well construction form or diagram. Then continue documenting the logging and well completion.

5.2 Documentation

Documentation is imperative when drilling. Drilling data is recorded on the soil boring log form. Daily activities of the drill crew and supervisor are essential for keeping within cost guidelines and to identify potential completion problems. Record daily field activities in the field log book. (Problems encountered while drilling are usually charged at the hourly rig rate so that accurate records are necessary. Drilling is generally paid by the foot. Recording the time of start-up and completion as well as total hole depth is mandatory.)

Record rig activities during the drilling of the well. The following:

1) Start-up and shut-down time for the day and visitors at the site.

2) Problems encountered during the day (e.g. slow drilling, thunder storms, down time due to maintenance, waiting on water, injuries and important conversations, decisions made during the day, or any other item which slows or stops drilling).

3) Penetration rate and problems with swelling clays or caving sand or gravel.

4) Type of bit(s) and materials used (bentonite, foam, etc.) and quantity used during drilling (Identify zones where circulation was lost or where water production is observed (or increases) when drilling with air).

5) Sampling of drill cuttings is often performed by one of the drill crew. Ask the crew to collect cuttings samples approximately every five feet unless otherwise specified. Capture samples utilizing a screen-type strainer placed in the path of the discharging mud as it emanates from the borehole. When drilling with air injection, collect cuttings samples near the run of the deflector shield. (Do not wash samples extruded with air injection). Insure that the samples (when drilling with mud) are carefully washed, using clear water, prior to describing them. After description, label each bag completely and place in sequence (of increasing depth) in cuttings' boxes. Sample bags labels should have following minimum information:

   - The sample interval
   - Well number
   - Project name and number
   - Name of investigator

6) Additional data listed below is included on a separate form or forms, but should always be recorded and filed with the hole's drilling history:

   - Hole size
   - Type of drilling
   - Drilling fluid
   - Penetrating rate
   - Circulation losses or gains
   - Drill behavior
   - Drillers observations
   - Sampling intervals
   - Caving, swelling or squeezing intervals

7) Record lithologic character versus depth data as completely and as accurately as possible as the material changes. These descriptions typically include:

- Rock type
- Color
- Mineralogy, including secondary mineralizations

8) Additional data in sedimentary rocks includes:

- Sorting
- Cementation
- Density or compaction
- Rounding

9) During logging relate materials to geologic origin, if possible, i.e., glacial till, stream terrace, buried channel, Fort Union Formation, etc., including:

- Rock type
- Color
- Grain size
- Mineralogy
- Bedding thickness, dip and type (i.e., stylolitic or shale partings).
- Natural joints and fractures including frequency, dip, second, any coatings or fillings. A graphical representation of these features may also be desirable.

10) Additional notes to be recorded include:

Log the core or cuttings as quickly as possible after removal from the hole. Some materials may degrade rapidly upon exposure, resulting in apparently poor rock, which was not actually present in the subsurface.

Check carefully, if logging core, each core end and try to determine if the fracture is natural or mechanical in origin. Mechanical fractures often can be identified by their orientation, the absence of secondary coatings or filling and slickensides, and its fit with the adjacent core piece. If doubt exists, consider it a natural fracture. If it is determined that the fracture is mechanical, ignore it and consider the two pieces of core as a single piece.

Wet samples are contained in sealable plastic bags. Double bag each sample putting the sample tag between the first and second bag.

11) Description of drill cuttings will contain at least the following parameters:

- Rock type
- Color
- Grain size
- Sorting
- Cementation
- Density or compaction

- Rounding
- Mineralogy
- The Total Depth (TD) of the drill hole should be determined and conveyed to the driller as early as possible - preferably before drilling begins. However, this is not always the case and every effort should be made to determine TD as soon as practicable.

5.2 Cleaning

Circulating to clean the drill hole out prior to removing the drill pipe is imperative. Once TD is determined and the depth is obtained, the driller should pull the drill up a short distance (1/4 - 2 feet) from the TD and continue to circulate with whatever fluid the hole was drilled with for a reasonable length of time. This action is to remove any drill cuttings which may have remained in suspension, or were in trans, at the time TD was obtained. Significant accumulation of drill cuttings may occur on the bottom of the drill hole if circulation is not accomplished. This can prevent logging the lower portion of a zone, which could be an important part of the well construction, or may be important for correlation purposes.

Use the sample screen to quickly check the amount of drill cuttings which are being removed during the circulation period. A small amount of cuttings are acceptable. Usually for shallow holes, 150-250 feet in depth, a circulation period of 10 to 15 minutes is adequate. This brief period of circulation insures that both the geophysical logging and completion of the hole as a production or monitoring well is consummated without delay. Circulation precludes delays caused by running the drill pipe back into the drill hole to remove sloughing or other fill at the bottom of the hole. Other problems may also occur, such as hanging the geophysical tool up or wedging in several hundred feet of well casing which can prove to be very costly in either retrieval attempts or redrilling of the hole.

SOP-FL-009
MONITORING WELL DEVELOPMENT

1.0 INTRODUCTION

All completed wells, whether the production or monitoring type, must be developed in order to facilitate unobstructed and continuous groundwater flow into the well. Well development is the process of cleaning the fines from the face of the borehole and the formation near the well screen. During any drilling process the side of the borehole becomes smeared with drilling mud, clays or other fines. This plugging action substantially reduces the permeability and retards the movement of water into the well screen. If these fines are not removed, especially in formations having low permeability, it then becomes difficult and time consuming to remove sufficient water from the well before obtaining a fresh groundwater sample because the water cannot flow easily into the well.

In the construction of high-capacity production type water wells, the development process is an important step to assure maximum hydraulic efficiency. Even though hydraulic efficiency is not a prime consideration in the construction of monitoring wells, nevertheless, development should be performed.

Development is required for the following reasons:

- To restore the natural permeability of the formation adjacent to the borehole to permit the water to flow easily into the screened zone
- To remove the clay, silt and other fines from the formation so that during subsequent sampling the water will not be turbid or contain suspended matter which can easily interfere with chemical analysis

The development process is best accomplished for monitoring wells by causing the natural formation water inside the well screen to move vigorously in and out through the screen in order to agitate the clay and silt, and move these fines into the screen. The use of water other than the natural formation water is not recommended.

2.0 PROCEDURES

1) Compressed air pumped down a pipe inside the well casing can be used to blow water out of the monitoring well. If air is applied to the well intermittently and for short periods then the water is only raised inside the casing rather than blown out and will fall back down the casing causing the desired back washing action. Also, blowing the water out will remove the fines brought into the screen by the agitating action.

2) Considerable care must be exercised to avoid injecting air into the well screen. Such air can become trapped in the formation outside the well screen and alter subsequent chemical analyses of water samples. For this reason, the bottom of the air pipe should never intercept the screen.

3) Another restriction on the use of air is the submergence factor. Submergence is the feet of water above the bottom of the air pipe while pumping (blowing water out) divided by the total length of the air pipe. Submergence should be on the order of at least 70 percent, which may be difficult to achieve with many shallow monitoring wells.

3.0 ALTERNATIVE METHODS

Alternative well development methods may be used including:

- Surge Block - A surge block is a round plunger with pliable edges such as belting that will not catch on the well screen. Moving the surge block forcefully up and down inside the well screen causes the water to surge in and out through the screen accomplishing the desired cleaning action. Surge blocks are commonly used with cable-tool drilling rigs, but are not easily used by other types of drilling rigs.

- Bailer - A bailer sufficiently heavy that it will sink rapidly through the water can be raised and lowered through the well screen. The resulting agitating action of the water is similar to that caused by a surge block. The bailer, however, has the added advantage of removing the fines each time it is brought to the surface and dumped. Bailers can be custom-made for small diameter wells, and can be hand-operated in shallow wells.

- Surging and Pumping - Starting and stopping a pump so that the water is alternately pulled into the well through the screen and backflushed through the screen is an effective development method. Periodically pumping to the surface will remove the fines from the well and permit checking the progress to assure that development is complete.

Well development should continue until the water becomes free of sediment or contains sediment in a lesser amount than was initially present. Conductivity, pH, temperature and turbidity (as measured by a turbidity meter) of the development water must all have stabilized prior to ceasing development. Disposal of development water is site specific and should be discussed in the Sampling and Analysis Plan or Work Plan.

SOP-FL-011
MONITORING WELL WATER LEVEL MEASUREMENT/EXTRACTION

1.0 INTRODUCTION

Water levels are measured for several key reasons. The most common is to provide the basis of understanding groundwater flow pathways, in terms of both horizontal and vertical gradients. Following level measurements, sampling proceeds in a specific order of activity.

2.0 EQUIPMENT

All equipment should be assembled, calibrated, and tested before arriving at the site. All items which potentially come in contact with the ground water samples should be pre-cleaned. Between sampling locations, all items which come in contact with sample water should be either disposed of or thoroughly cleaned. All apparatus, buffers, and samples should be kept out of direct sunlight to avoid temperature fluctuations, particularly pit buffers.

Lay out all equipment on the plastic drop cloth adjacent to the sampling location, to prevent contamination of or from the outside environment. A truck tailgate provides an excellent equipment bench, if the site is accessible to vehicles.

A list of equipment necessary for sampling of monitoring wells at hazardous waste sites is given below.

2.1 Well Evacuation and Sample Withdrawal

- Disposable chemically inert gloves (separate pair for each sampling location).
- A sampler apparatus (e.g., Kemmerer, Bailer) with a capacity to collect 750 to 1000 ml of sample per trip, including sample transfer tubing.
- A 500 foot or more length of steel cable marked in 5, 25, and 100 foot increments on a retrieval system for use with the Kemmerer or Bailer. (Nylon line can be used only if it is not used between wells and only if it can be shown the line will not cause sample contamination.)
- Pump and Power supply (if needed).

2.2 Field Measurements

- Tape measure marked in tenths and hundredths of feet.
- Calibrated M-scope or similar water level recording device.
- Dissolved oxygen meter with an accuracy of ± 0.1 mg/l, if needed.

- Thermometer or temperature measuring device calibrated in °C (degrees centigrade) with an accuracy of $\pm$1°C.
- pH meter with an accuracy of $\pm$0.1 pH units.
- At least two pH buffer standards with pH value below and pH value above the limits anticipated for the samples.
- Conductivity (specific conductance) meter preferably with the capacity to report conductivity (micromhos/cm) corrected to 25°C. Functional range of 0 to 50,000 umhos/cm.
- Beaker for field measurement of pH, conductivity, etc.
- Any additional project-specific sampling equipment as required.

2.3 Sample Preparation

- Field filter apparatus 0.45 micron membrane filters are used only for samples collected for dissolved inorganic analyses.
- A pressure-suction filtration apparatus capable of at least 250 ml volume filtration at any one time.
- Precleaned, capped sample containers containing the appropriate sample preservations, if necessary.
- Tightly capped, securely stored containers holding appropriate preservatives, if necessary.
- Pipet or "squeeze" bottle for preservative additions if such additions are needed.

2.4 Sample Containers

- Precleaned, capped sample containers.
- Ice chest(s) with lock-proof liner to hold collected water samples, and ice or "blue ice".
- Vermiclite.
- Leak-proof liners for ice-chest(s).
- Labeling and Shipping:
- Water resistance sample bottle labeling materials.
- Laboratory instructions.

- Shipping labels, including DOT labels, waste identification, and "This end up" labels, as appropriate.
- Shipping papers, as provided by carrier or regulatory agency.
- Packing tape.

2.5 Cleaning between Sampling Locations

- Laboratory (phosphate-free) detergent.
- Reagent-grade methanol (one to several gallons, depending on amount of equipment to be cleaned, number of sampling locations, and levels of contamination).
- Distilled water, generally about 2 gallons per sampling location.
- Buckets (sufficient for each cleaning liquid and for size of equipment to cleaned).
- Brushes for cleaning inside of bailer, beakers, etc.
- Handiwipes, disposable after each use.
- Plastic sheeting at least one large sheet for each sampling location, for clean layout of equipment.

2.6 Record-keeping

- Prepared field record-sheets for entering data collected in the field.
- Photographic record, if appropriate.
- Chain-of-custody.

3.0 EQUIPMENT CLEANING

All items which potentially come in contact with ground water at the sampling location should be pre-cleaned.

Between sites, sampler cleaning is to be performed immediately prior to sampling from any well. Any portion of the sampling device which contacts contaminated water shall be cleaned or disposed of between wells. Where pumps are used, short sections of sample tubing may be disposed of rather than cleaning. The other items which must be cleaned or disposed of between sampling locations include bailers, pumps, probes, beakers and gloves. Equipment must be cleaned following procedures specified in the Sampling and Analysis Plan. Considerations should be given to the following:

4.0 PROCEDURES

1) Prepare field record sheet and record all relevant data.

2) Check the well for above ground damage.

3) Remove the well cap (a wrench may be needed).

4) Lay out equipment on the plastic drop-cloth adjacent to the sampling location, to prevent contamination of or from the outside environment.

5) Measure and record the depth to water and the time of measurement.

6) Measure the total depth of the well.

7) Remeasure and record the depth of water after a lapse of 4 to 8 minutes following initial measurement and record the depth to water and time of measurement.

8) If successive measurements show essentially no difference, continue the sampling procedure. Where the level change is greater than 1/100th ft, delay the remaining procedures until the change observed and recorded is less than that figure.

9) Determine the volume of water in the well (depth of water x cross sectional area).

10) Purge the well. Evacuate water from the well until measurements of temperature and conductivity remain stable, or until 3-10 casing volumes of water are removed.

11) If soundings show sufficient level of recovery, prepare sampling system. If insufficient recovery is noted, allow additional time to collect samples on a periodic schedule which will allow recovery between samplings.

12) Perform any appropriate field testing of groundwater parameters.

13) Withdraw sample(s) according to the procedures for the sampling equipment used.

14) Collect volatile organic analysis samples first, if required.

15) Fill necessary sample bottles completely by allowing sampler discharge to flow gently down the side of bottle with minimal entry turbulence. Cap each bottle as filled.

16) Preserve and/or filter the sample if necessary as stated in the Sampling and Analysis Plan.

17) Check that a Teflon-liner is present in cap if required. Secure the cap tightly.

18) Label the sample bottle with an appropriate tag. Be sure to complete the the tag with all necessary information. Complete chain-of-custody documents and field log book.

19) Place the properly labeled sample bottle in an appropriate carrying container maintained at 4°C throughout the sampling and transportation period.

20) Between sampling locations, all items which come in contact with ground water such as bailers, pumps, cables, tubing, probes, gloves, and beakers must be either disposed of or thoroughly cleaned.

5.0 REFERENCES

Geotrans, Inc., 1983. RCRA Permit Writer's Manual: Ground Water Protection (40 CFR Part 264 Subpart F). EPA Contract No. 68-01-6464.

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SOP-FL-012
GROUNDWATER SAMPLING

1.0 INTRODUCTION

Low-flow purge and sampling is appropriate at locations where disturbance of the media around the well screen needs to be minimized. A common concern is turbidity in the monitoring wells and the consequent undesirable effects on metals sampling results.

2.0 LOW-FLOW PURGE AND SAMPLING

The low-flow purge and sample method creates less disturbance and agitation in the well, and therefore excess turbidity is not generated during the purging and sampling process. The result is a more rapid stabilization of turbidity and other parameters (pH, temperature, specific conductivity, dissolved oxygen, Eh), and a sample more representative of conditions in the formation is collected.

The low flow purge and sample method consists of using a submersible pump to purge the well at a very low flow rate (0.5 to 1.5 liter/minute). The pump intake is set approximately in the middle of the well screen, with a stagnant water column over the top of the pump. The well is purged at the low rate until the field parameters (temperature, pH, specific conductivity, turbidity, dissolved oxygen, Eh) have stabilized. The sample is then collected directly from the pump discharge at a low flow rate (see Section 2.2).

2.1 Equipment

The following equipment is required:

- Adjustable rate submersible pump (e.g., Grundfos Redi-Flo$_2$ with converter)
- Generator
- Teflon-lined polyethylene tubing
- Filtration apparatus with 0.45 um filter
- Polyethylene sheeting
- Monitoring instrument for measuring pH, turbidity, dissolved oxygen, conductivity, temperature (Horiba U-10 or equivalent)
- Eh (oxidation potential) meter (Orion or equivalent)
- Large, wide-mouth breakers for measuring field parameters
- Photoionization detector or equivalent (PID)
- Electronic water level indicator or equivalent (marked in 0.01 foot increments)

- Nylon stay-ties
- Logbook(s)
- Decontamination supplies specified in Section 2.3 of this SOP:
  - steam cleaner
  - three foot length, 3-4" diameter PVC pipe with end cap
  - (alternative) eight - 5 gallon buckets
  - (alternative) potable water supply
  - (alternative) alconox
  - (alternative) methanol
  - (alternative) de-ionized water
- Sample bottles and preservatives specified in the Quality Assurance Project Plan (QAP)
- Labels and shipping products specified in the QAP
- Personal protective equipment specified in Site Health and Safety Plan

2.2 Procedure

The following describes the sampling procedures for the low-flow sampling method. Equipment calibration, logbook documentation, sample bottle filling and preservation, and shipping will all be conducted in accordance with the procedures specified in the QAP. Personal protective equipment will be donned in accordance with the requirements of the Site Health and Safety Plan (HSP). Wells shall be sampled in the order of least contaminated to most contaminated.

1) Check and record the condition of the well for any damage or evidence of tampering.

2) Remove the well cap.

3) Measure well headspace with a PID and record the reading in the field logbook. For wells installed on a landfill, also measure the headspace with a combustible gas indicator.

4) Measure and record the depth to water with an electronic water level device and record the measurement in the field logbook. Do not measure he depth to the bottom of the well at this time (to avoid disturbing any sediment that may have accumulated). Obtain depth to bottom information from installation information in the field logbook or drilling logs. Calculate volume of the water column as: depth of water column x cross-sectional area of the well.

5) Lay out the polyethylene sheeting and place the monitoring, purging and sampling equipment on the sheeting. To avoid cross-contamination, do not let any downhole equipment touch the ground.

6) Re-check and record the depth to water after approximately 5 minutes. If the measurement has changed more than 1/100th of a foot, check and record the measurement again, then begin well purging.

7) Attach and secure the teflon-lined polyethylene tubing to the low-flow submersible pump. As the pump is lowered into the well, secure the safety drop cable, tubing, and electrical lines to each other using nylon stay-ties placed approximately 5 feet apart.

8) The pump should be set at approximately the middle of the screen. Be careful not to place intake less than 2 feet above the bottom of the well as this may cause mobilization of any sediment present in the bottom of the well. Start pumping the well at 0.5 to 1.5 liters per minute.

9) The water level in the well should be monitored during pumping, and ideally the pump rate should equal the well recharge rate with little or no water level drawdown in the well (the water level should stabilize for the pumping rate). There should be at lest 1 foot of water over the pump intake so there is no risk of the pump suction being broken, or entrainment of air in the sample. Record the pumping rate adjustments and depth(s) to water in the logbook. If the recharge rate of the well is slow and the well is purged dry, then wait until the well has recharged to a sufficient level and collect the appropriate volume of sample with the submersible pump.

10) The well should be purged at a low-flow rate (from 0.5 to 1.5 liters per minute). During purging, monitor the field parameters (temperature, pH, turbidity, specific conductance, dissolved oxygen and Eh) approximately every 3 to 5 minutes until the parameters have stabilized to within 10 percent (plus or minus 5 percent) over a minimum of three readings. Turbidity and dissolved oxygen are typically the last parameters to stabilize. Note: once turbidity readings get below 10 NTUs, then the stabilization range can be amended to 20 percent (plus or minus 10 percent) over a minimum of three readings.

    Readings should be taken in a clean container (preferably a less beaker) and the monitoring instrument allowed to stabilize before collection of the next sample. The Horiba instrument takes the readings consecutively and therefore the process to record all the measurements may take longer than five minutes. If so, measurements should be taken as often as practicable.

11) Once the field parameters have stabilized, collect the samples directly from the end of the tubing. Volatiles and analytes that degrade by aeration must be collected first. The bottles should be preserved and filled according to the procedures specified in the QAP. All sample bottles should be filled by allowing the pump discharge to flow gently down the inside of the bottle with minimal turbulence. Cap each bottle as it is filled.

12) The ratio of "filtered" to "unfiltered" metals will be decided upon based on site conditions and specified in the QAP. The filtered metals samples will be collected into an unpreserved bottle and then filtered with a 0.45 um filter and pumped into a pre-preserved bottle. Document all field procedures used and any pertinent field observations.

13) Samples shall be preserved, labelled, and placed immediately into a cooler and maintained at 4°C throughout the sampling and transportation period. Samples should be labeled, recorded on the chain-of-custody, and shipped according to the procedures specified in the QAP.

14) The pump assembly should be carefully removed from the well. The teflon-lined polyethylene tubing will be dedicated to each well. The tubing should be placed in a large plastic garbage bag, sealed, and labeled with the appropriate well identification number. The tubing will be stored on-site until the next round of sampling.

15) After sampling is complete, measure the total depth of the well.

16) Close and lock the well.

2.3 Decontamination

The pump (including support cable and electrical wires which are in contact with the sample) will be decontaminated by the following procedure:

1) Steam clean the outside of the submersible pump.

2) Pump alconox solution through the inside of the pump. Note: if gross VOC contamination is encountered in the well (e.g., LNAPLs or DNAPLs), then this procedure shall be amended to pumping either methanol, hexane or isopropyl alcohol through the inside of the pump.

3) Pump hot water from a steam cleaner through the inside of the pump. This can be accomplished by placing the pump inside 3 or 4 inch diameter PVC pipe with an end cap. Hot water form the steam cleaner jet will be directed inside the PVC pipe and the pump exterior will be cleaned. The hot water from the steam cleaner will then be pumped from the PVC pipe through the pump and collected into another container. Note: in order to utilize a steam cleaner jet, it must be certified that no additives or solutions have been added to the steam cleaner jet to prevent corrosion.

4) Pump distilled water through the inside of the pump.

All other equipment that comes in contact with contaminated groundwater, and the pump -- as an alternate method, can be decontaminated using the six-step procedure described below:

1) Flush the equipment/pump well with potable water
2) Flush with alconox solution
3) Flush equipment/pump again with potable water
4) Flush with methanol
5) Flush equipment/pump with de-ionized water
6) Allow equipment/pump to air dry.

If this procedure is used to decontaminate the pump, the duration of flushing with de-ionized water shall be sufficiently long to ensure that all methanol has been rinsed out.

Equipment blanks shall be collected at intervals to monitor the decontamination procedures. The specific percentage or number of blanks shall be defined in the QAP.

3.0 RESTRICTIONS/LIMITATIONS

Careful sampling for compound(s) that may be degraded by aeration is necessary to minimize sample disturbance and, hence, analyte loss. The representativeness of this sample, however, is difficult to determine because the collected sample represents a single point, is not homogenized and has been disturbed.

4.0 REFERENCES

Draft Sampling Operating Procedures (SOP) Low-Flow Groundwater Sampling for Volatile Oranics and Inorganics at the Davis Superfund Site, correspondence from Joe Lemay (USEPA Region I) to Jeanne Westervelt (Camp Dresser and McKee, Inc.), February 24, 1993.

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SOP-FL-013
FIELD SAMPLING EQUIPMENT DECONTAMINATION

1.0 GENERAL

In order to generate analytical data of known and defensible quality, adherence to established quality assurance protocol is necessary. This will ensure that samples obtained in the field are representative of the particular environment from which they have been collected and are of satisfactory quality and quantity to meet the project objectives. To achieve this goal, CDM has established the following protocols to maintain consistency in sample collection and handling during hazardous waste site investigations.

The importance of the environmental sample collection process and associated analytical data is demonstrated through integration of this information into the decision-making process. All phases of site remediation rely on the provision of accurate analytical data. These phases include an initial site evaluation, remedial investigation and design phases, human and environmental risk assessments, determination of treatment effectiveness, remedial alternative selection and cost/benefit analysis, and finally, monitoring the results of the remedial action selected.

The following quality assurance/quality control requirements have been established to maintain sample integrity to as great an extent as possible and are applicable for most hazardous site investigations. Their prime objective is maintaining the physical form and chemical composition of the sample and preventing contamination from other sources or changes in contaminant concentration. To meet this objective there must be a measure of control over all sample handling procedures beginning with sampling equipment decontamination procedures and ending with laboratory analysis. This section focuses on the first half of the control process; the procedures leading up to and ending with sample packaging and transport to the laboratory.

2.0 DECONTAMINATION PROCEDURES

In order to reduce risk of transfer of contaminants between sampling locations or to off-site areas, decontamination of personnel and equipment is required. The decontamination procedures shall be established for each site based on the degree of hazard associated with the site and the amount of possible contact with hazardous materials resulting from site work. Final decontamination procedures and layout for field personnel shall be reviewed and approved by the Site Safety and Health Officer.

2.1 Sampling Equipment

Decontamination of the downhole drilling equipment or excavation equipment, including split spoon samplers, augers, rods, backhoe brackets, and portable decontamination equipment (buckets, brushes, etc.) between boreholes shall be performed by steam cleaning equipment, on a decontamination pad, by the drilling or test pit contractor.

During drilling procedures, decontamination of the split-spoon sampler, and other equipment requiring decontamination, is the responsibility of the drilling or test pit contractor. The following is an outline of the procedure in which this is to be performed:

- Scrub all surface of "dirty" equipment with a brush that is consistently submerged in a bucket containing Alconox mixed with tap water. The equipment should be held directly over the bucket during decontamination so it captures all contamination that is adhered to the piece of equipment.
- Rinse the equipment with tap water contained in an adjacent bucket.
- Rinse the equipment with methanol.
- Rinse the equipment with distilled water.

Spoils and decontamination water collected shall be drummed by the drilling or test pit contractor and handled appropriately. Bailers used in groundwater sampling should be cleaned in a similar fashion as split-spoon samplers.

2.2 Equipment and Solutions

Decontamination equipment, materials and supplies are generally selected based on availability, ease of decontamination and disposability. Recommended decontamination equipment is listed in Table 1. Most equipment and supplies can be easily procured. For example, soft-bristle scrub brushes or long-handle brushes are used to remove contaminants. Water in buckets or garden sprayers are used for rinsing. Large galvanized wash tubs, stock tanks, or wading pools can hold wash and rinse solutions. Large plastic garbage cans or other similar containers lined with plastic bags can store contaminated clothing and equipment. Contaminated liquids can be stored temporarily in metal or plastic cans or drums. Other gear includes paper or cloth towels for drying protective clothing and equipment.

Personnel protective equipment, sampling tools, and other equipment are usually decontaminated by scrubbing with detergent-water such as Alconox using a soft-bristle brush followed by rinsing with copious amounts of water. Solvents are usually used with sampling gear, not protective gear. The appropriate decontamination solution must be selected in consultation with an experienced chemist. Clothing which is heavily contaminated or cannot be decontaminated should be properly disposed of.

Insofar as possible, measures should be taken to prevent contamination of monitoring equipment. Monitoring instruments, unless they are splashed, usually do not become contaminated. Once contaminated, instruments are difficult to clean without damaging them. Any delicate instrument which cannot be decontaminated easily should be protected while it is being used.

TABLE 1

RECOMMENDED DECONTAMINATION EQUIPMENT

Some Recommended Equipment for Decontamination Equipment

- Drop cloths of plastic or other suitable materials on which heavily contaminated equipment may be deposited.
- Collection containers, such as polyethylene lined drums for equipment that must be discarded.
- Lined box with absorbents for wiping or rinsing off gross contaminants and liquid contaminants.
- Large galvanized tubs, stock tanks, 5-gallon buckets, or children's wading pools to hold wash and rinse solutions.
- Wash solutions selected to remove contaminants and contaminated wash solutions.
- Rinse solutions selected to remove contaminants and contaminated wash solutions.
- Long-handled, soft-bristled brushes to help wash and rinse off contaminants.
- Paper or cloth towels for drying protective clothing and equipment.
- Metal or plastic cans or drums for contaminated wash and rinse solutions.
- Plastic sheeting, sealed pads with drains, or other appropriate methods for containing and collecting contaminated wash and rinse solutions spilled during decontamination.

Some Recommended Equipment for Heavy Equipment and Vehicle Decontamination

- Storage tanks of appropriate treat- systems for temporary storage and/ or treatment of contaminated wash wash and rinse solutions.
- Drains or pumps for collection of contaminated wash and rinse solutions.
- Long-handled brushes for general exterior cleaning.
- Wash solutions selected to remove and reduce the hazards associated with the contamination.
- Rinse solutions selected to remove contaminants and contaminated wash solutions.
- Pressurized sprayers for washing and rinsing, particularly hard-to-reach areas.
- Curtains, enclosures, or spray booth to contain splashes from pressurized sprays.
- Long-handled brushes, rods and shovels for dislodging contaminants and contaminated soil caught in tires tires and the undersides of vehicles and equipment.
- Containers to hold contaminants and contaminated soil removed from tires and the undersides of vehicles and equipment.
- Wash and rinse buckets for use in the decontamination of operator areas inside vehicles and equipment.

TABLE 1

RECOMMENDED DECONTAMINATION EQUIPMENT (Continued)

Some Recommended Equipment for Decontamination Equipment	Some Recommended Equipment for Heavy Equipment and Vehicle Decontamination
	• Containers for storage and disposal of contaminated wash and rinse solutions, damaged or heavily contaminated parts, and equipment to be discarded.

2.3 Disposal of Derived Waste

All contaminated equipment must be disposed of properly. Clothing, tools, buckets, brushes, and all other equipment that is contaminated must be secured in drums or other containers, labeled, and properly disposed of. Clothing and other equipment not completely decontaminated on-site should be secured in plastic bags before being removed from the site.

STANDARD OPERATING PROCEDURES

INSTRUMENTATION PROCEDURES

SOP-IN-001
PHOTOIONIZATION DETECTOR

1.0 INTRODUCTION

This Standard Operating Procedure (SOP) is specific to the HNu PI 101 and the Thermal Environmental Organic Vapor Monitor Photoionization Detectors (PID). These portable instruments are designed to measure the concentration of trace gases in ambient atmospheres at industrial and hazardous waste sites and are intrinsically safe. The analyzers employ photoionization detectors.

The PID sensor consist of a sealed ultraviolet light source that emits photons which are energetic enough to ionize many trace species (particularly organics) but do not ionize the major compounds of air such as O_2, N_2, CO, CO_2, or H_2O. An ionization chamber adjacent to the ultraviolet lamp source contains a pair of electrodes. When a positive potential is applied to one electrode, the field created drives any ions, formed by absorption of UV light, to the collector electrode where the currents (proportional to concentration) are measured. One major difference between a flame ionization detector (FID) and a PID is that the latter responds to inorganic compounds as well as non methane type organic compounds.

To assess whether the instrument will respond to a particular species, the ionization potential (IP) should be checked. If the IP is less than the lamp energy, or, in some cases, up to 0.2-0.3 electron volts (ev) higher than the lamp energy, instrument response should occur. For example, hydrogen sulfide (IP = 10.5 ev) may be detected with a 10.2 ev lamp, but butane (IP 10.6 ev) will not be detected.

2.0 CALIBRATION

Calibration of all CDM field equipment is performed by qualified personnel trained in calibration techniques for all field items. When a field instrument which requires calibration is obtained from the equipment room, the unit will display a calibration tag denoting the date when the instrument was last calibrated and/or maintained. All field instruments are calibrated each time they leave the equipment facility for a site. A maintenance file is kept for each calibrated field item.

PID and FID detector type instruments come with field calibration kits. A field calibration kit would be used if the instrument is to be kept out at the site for extended periods of time, or if the instrument endures prolonged environmental extremes. In either case, a calibration check standard could be introduced in the instrument to verify it's accuracy. If an instrument will not calibrate or shows improper field operation, it should be sent back to the office, and another instrument reissued. Field personnel should not try to maintain the instruments in the field. If long sampling program is required, be prepared to take more equipment for backup in case of instrument failure. Records and procedures of all calibration techniques are on file at the CDM equipment management facility in Ten Cambridge Center, Cambridge, Massachusetts.

With the instrument fully calibrated, it is now ready for use. Any results obtained should be reported as parts per millions (ppm) as isobutylene. If you need to convert these numbers based on a benzene standard, HNu offers a conversion table which is available from CDM. Important instrument specifications for each PID detector are listed as follows.

HNu PI 101 Performance	OVM Model 580A
range - 0.1 to 2000	0 - 2000
detection limit 0.1 ppm	0.1 ppm

HNu PI 101 Power Requirements	OVM Model 580A
- continuous use, battery >10 hours	8 hours
- recharge time, max >14 hours, 3 hours +	8 hours
- NiCd Battery	Gel Cell Battery

- Unit can be operated on battery charger.
- Both units provide protection circuitry for the battery. This prevents deep discharging of the battery and considerably extends the battery life.

3.0 HNU PI 101

3.1 Procedure

1) Before attaching the probe, check the function switch on the control panel to make sure it is in the off position. The 12 pin interface connector for the probe is located just below the span adjustment on the face of the instrument. Carefully match the slotted groove on the probe to the raise slot on the 12 pin connector on the control panel. Once in line, twist the outer ring on the 12 pin connector until it locks into position (a distinct snap noise will be felt when in place).

2) Turn the function switch to the battery check position. The needle on the meter should read within or above the green battery arc on the scaleplate. The battery, if needle falls below the green arc, should be recharged before any measurements are taken. If the read LED on the instrument panel should come on, the battery needs charging and the unit cannot be operated without a charger.

3) If the battery is functioning properly, turn the function switch to the STANDBY position. If the needle on the instrument does not read 0, then turn the knob on the instrument panel until the needle deflects to the zero point on the meter.

4) Once the zero is confirmed, turn the function switch to the 0-20 position. At this point, the needle will read approximately 0.5-ppm. This reading is normal background for ambient air. For CDM health and safety reasons, the HNU PI 101 should be operated on this range to insure maximum

sensitivity in the work area. The unit, however, has 2 other ranges (0-200), (0-2000) should monitoring be required for other purposes such as headspace analysis etc. where readings could exceed the 0-20 ppm range.

3.2 Limitations

1) AC power lines (high tension lines), or power transformers can interfere with the instruments performance. This situation can be confirmed by noting a deflection of the meter while in the STANDBY position.

2) Environmental factors such as humidity, rain and extreme cold can limit the instruments performance. To verify the "water sensitivity" condition, gently blow in the hole at the end of the probe. If the needle deflects positively (on the 0-20 position) by 2 ppm or more, a water sensitivity problem exists and the unit should be brought into the warehouse for service. HNU PI 101 should be kept out of the rain as much as possible or covered. This will insure longer operating times with less false positive readings.

3) Quenching the detector can limit the instruments performance. This occurs when a compound such as methane at a very high concentration is introduced to the detector. The concentration is so high that the unit does not respond at all or gives a negative reading.

4.0 **OVM 580A**

4.1 Procedures

1) With the unit being fully calibrated before receiving it, you are ready for operation. Located on the right hand side of the unit is a panel. Slide this panel off of the unit. Inside there is a switch which supplies power to the LCD portion of the instrument. Turn this switch on and replace the panel. On the top of the OVM, there is an instrument panel. Locate the on/off switch and turn the unit on. This switch activates the lamp as well as the pump. Turn this switch off when the instrument is not in use, but leave the internal switch on.

2) The unit is now in the operation mode with all readings shown on the LCD display. Options for the OVM 580A include automatic recording and alarm settings. Should any options be required, they can be set up before the instrument leaves the CDM equipment warehouse.

Warning signals associated with the OVM include a Low Battery signal. A flashing B will appear in the left hand corner of the bottom line of the display when the 580A is in the RUN mode. If a gas concentration >2000ppm is detected by the OVM, the top line of the display will show OVERRANGE. Once this occurs, the instrument will "lock out" until the unit is brought to a clean area. A clean area is described as an area where the concentration of organic vapors is below 20 ppm.

SOP-IN-002
FLAME IONIZATION DETECTOR

1.0 INTRODUCTION

The organic vapor analyzer (Foxboro Organic Vapor Analyzer 128) is a portable flame ionization detector package designed to monitor organic gases and vapors in the ambient air.

The instrument measures organic vapor concentration by producing a response to an unknown sample, which can be related to a gas standard used to calibrate the instrument. During instrument operation, a continuous sample is drawn into the probe and transmitted to the detector chamber by an internal pumping system. Inside the detector chamber, the sample is exposed to a hydrogen flame which ionizes the organic vapors. This burning of vapors leaves positively charged carbon-containing ions which are driven to a collecting electrode. A current is generated by this process and measured on an amplifier.

FID's are more sensitive for hydrocarbons than any other class of organic compounds. Compounds containing oxygen such as alcohols, esters, ethers, and aldehydes give lower responses. In general, the higher the proportion of carbon to oxygen the lower the effect of oxygen in lowering instrument response. This same rule applies to nitrogen containing compounds such as amines, nitrites, and halogenated compounds such as freons.

2.0 LIMITATIONS

The OVA 128 used in the survey mode in unknown atmospheres is strictly quantitative with the reading equivalent to methane. Due to this extreme sensitivity to methane, the unit is limited in any atmosphere that has toxic vapors mixed in with methane. This is why an OVA is not a practical instrument to use on a landfill, if you are looking for toxic vapors.

Moisture is still another limiting factor. The OVA model 128 cannot sample water directly, or any application which may force water vapors into the sample line. Too much water will damage the sample loop, as well as all the in line particle filters, and burner chamber.

The performance includes:

- Readout: 3 ranges 0 to 10, 0 to 100, 0 to 1000 ppm (linear)
- Sample Flow Rate: 1 1/2 to 2 1/2 liters per minute at 22°C
- Response Time: Approximately 2 seconds for 90% of final reading
- Minimal Detectable Limit: 0.2 ppm

3.0 PROCEDURES

3.1 Operations

1) Attach the probe to the main instrument package being careful to properly line-up the electronic jack and sample line to the side pack assembly. Only hand tighten the 1/8 inch sample line nut onto the unit. Move the pump switch to on, and check the battery condition by moving the instrument switch to the battery check position. The needle should deflect past the white line on the probe. If it does not, do not use the instrument. Place the unit on charge.

2) Move the instrument switch to on and allow 2 minutes to warm up.

3) Move the pump switch to the on position and then place the instrument panel in the vertical position. Check the sample flow rate to be sure its 1 1/2 to 2 1/2 LPM.

4) Set the calibrate switch to X1 position and use the calibrate knob and set the meter to read 0 or 1 ppm.

5) Open the hydrogen tank valve all the way, and the hydrogen supply valve 1 and 1/2 turns. The hydrogen supply valve gauge should read between 8 and 12 psi. A full tank of hydrogen (approximately 2000 psi on the tank supply), should last at least 8 hours.

6) After one minute, depress the igniter button until the burner lights. This is indicated by a positive deflection of the meter and a slight popping sound. The meter will slowly come down if unit is lit. Do not depress the igniter button for more than six seconds. If the flame does not light, which is indicated by a slowly rising positive deflection of the meter, wait for one minute and try again.

7) After the detectors flame is lit, use the calibrate knob to zero out the ambient background. For maximum sensitivity below 10ppm, set the calibrate switch to X1 and readjust the zero on the meter. To avoid a false flame-out alarm indication, set the meter to 1ppm with the calibrate knob, and make differential readings from there.

8) When using the OVA in the survey mode, ensure that the sample inject valve remains in the full "out" position and that the backflush valve is either full "in" or full "out". This is only for OVA 128 equipped with the GC accessory.

9) Health and safety reasons, use the OVA on the 0-10ppm range, with the zero established before you enter the site area. Switch to higher ranges as conditions dictate. While taking care not to permit the OVA to be exposed to excessive moisture, dirt, or other contamination, monitor the work as specified in the site Health and Safety Plan. At the end of the day, clean the outside of the instrument with a damp disposable towel.

3.2 Shut-down

1) Close the hydrogen supply valve and the hydrogen tank valve. Do not overtighten these valves, they are easily damaged.

2) Move the instrument switch to off.

3) Wait a few seconds and then move pump switch to off. The instrument is now in a shut down configuration.

4) If possible, immediately place the instrument on charge.

3.3 Hydrogen Refilling

The OVA 128 is filled with Hydrogen prior to being issued from the equipment room. Should on-site H_2 filling be required, the following steps should be taken.

1) In a well ventilated area, away from any source of flame or spark, attach the hydrogen filling hose securely to a cylinder of extra dry hydrogen (less than 2ppm total hydrocarbons).

2) Attach the filling hose to the instrument fill connection and turn on the hydrogen valve making sure the other end of hose is set on off.

3) Turn the fill/bleed valve slowly to bleed and purge the hose for ten seconds.

4) Turn the fill/bleed valve to the close position. Open the refill valve on the instrument and turn the fill/bleed valve to fill.

5) Close the refill valve on the instrument. Close the fill/bleed valve, then close the hydrogen tank valve.

6) Bleed the filling hose completely and disconnect it from the instrument, and the hydrogen tank.

SOP-IN-003
COMBUSTIBLE GAS INDICATOR

1.0 INTRODUCTION

The combustible gas indicator (CGI) is used to determine the concentration of flammable vapors, gases and atmospheric oxygen/deficiency. This information issued to assess explosive potential, and the presence of asphyxiant gases/vapors. The reading is quantitative only.

The CGI can detect and indicate gas concentrations up to the lower explosive limit, and actuate a characteristic audible signal if concentration exceeds a present level. Simultaneously, the unit will analyze for oxygen over a range of 0 to 25% and actuates a different audible signal if O_2 concentration drops below a present level.

The Model 1314 utilizes two detectors. For combustible gas, the combustible components are burned on the platinum filament. This raises the temperature and the electrical resistance of the filament. The decreased electrical current is measured by a potentiometer, which is translated into a reading on the instrument. For O_2, the oxygen in the sample reacts with an electrolyte in the detector cell, generating an electrical current. Another potentiometer translates the increased current into a meter reading. Combustible gas is measured in 0-100% of the LEL (Lower Explosion Limit), while oxygen is measured in percent.

2.0 LIMITATIONS

The limitations for the combustible gas detector are:

- Volatile heavy metals i.e., tetraethyl lead
- High humidity
- Selenium, silicon, and arsenic

For the oxygen detector, these limitations are:

- Temperature and pressure
- Oxidizers (cause elevated readings)
- CO_2 (reduces sensor sensitivity/shortens sensor life)

3.0 PROCEDURES

1) Insert hose coupling into fitting on front of instrument.

2) In an area known to be free of combustible gas, push the instrument power button in the meter will rise upscale and a pulsing alarm will sound. Allow the instrument to warm up 2 minutes.

3) Keep the LEL button and O_2 button in the OUT position.

4) On the instrument panel (on side), turn the PPM/LEL zero knob to adjust the needle to read zero.

5) With both buttons on the instrument panel out, you are monitoring LEL.

6) Press BATT CK button and note meter reading. If reading is close to or below BATT CHECK mark on meter, recharge batteries.

7) Put OXY/LEL switch in the OXY (IN) position, so that orange indicator shows. Turn OXY CAL knob to bring meter to the O_2 CAL mark (21%).

8) As a quick check, allow the instrument to sample expired air, by holding hose inlet loosely between the teeth while breathing out through the mouth. The reading should come down to about 16, and alarm should sound at 19%. Allow it to return to 21, then put switch back in LEL position. Instrument will automatically test for oxygen, whenever it is used, and will give pulsed audible and amber light alarm if oxygen content drops to 19.5%. It is not necessary to use the instrument with the switch in the OXY position unless oxygen measurements are of primary interest. If both abnormal gas conditions exist simultaneously, both lights will blink in their normal pattern, but the buzzer will sound continuously.

9) For reading in the 0-100% LEL range, hold hose inlet at the point to be monitored. Watch the meter and record any readings.

10) Monitor the work activity as specified in the site Health and Safety Plan (HSP).

SOP-IN-004
RADIATION SURVEY METER

1.0 INTRODUCTION

Radioactivity is the property of the nucleus of an atom to spontaneously emit energy in the form of radiation. Excessive nuclear energy emitted in the form of high energy electromagnetic waves or particles, is radiation.

Nuclear radiation is a process that accompanies the transformation of atoms from unstable to stable states. Alpha, beta, and gamma radiation are the three main hazards of concern:

- Alpha particles - Particles consisting of two protons and two neutrons bound together with an electrical charge of +2. Identical to helium nuclei. Through emission of an alpha particle, uranium becomes thorium, and radium becomes radon.

- Beta particles - Particles with a single electrical charge. When negatively charge, identical to electrons.

- Gamma rays - High energy, short wavelength electromagnetic radiation. Other types of electromagnetic radiation includes visible light, ultraviolet, and radar.

The various types of radiation differ in their ability to penetrate matter. The energy of radiation (1 MeV) is as follows:

Type of Radiation	Distance Traveled in Air	Ion-Pairs in 1 cm of Air	Shielding Required
Alpha	Less than 1 inch	Hundreds of thousands	A sheet of paper
Beta	Inches	Hundreds	1/16 inch of aluminum foil
Gamma	Hundreds of feet	1-2	2 feet of aluminum foil

2.0 METER TYPES

CDM utilizes radiation survey meters to determine the presence and levels of radiation. The information gathered is used to establish control measures to reduce or prevent exposure. The Ludlum Model 3 is a waterproof, portable survey instrument that operates on two standard "D" cell flashlight batteries. The instrument features a regulated high-voltage. The power supply is adjustable from 400 to 1500 volts and provides a 4-linear range from 0-200 MR/Hr (the scale multiples are X0.1, X1, X10, X100).

The Ludlum Model 3 is factory calibrated annually. CDM equipment room offers three probes for use with the Ludlum Model 3. The probes are a thin wall Geiger-Mueller Probe, Pancale Geiger-Mueller Probe and an Alpha Scintillation Probe. Contact the CDM equipment room prior to going out on site in order to attain the proper probe for your application.

3.0 PROCEDURE

Specific operating procedures for the Model 3 are as follows:

1) In order to obtain appropriate background readings, the unit should be checked out and switched on approximately 1 mile before entering the suspected site area.

2) Attach the probe cable to both the probe and the unit by turning the BNC connector on either end.

3) Rotate the selector switch to BAT position. (If needle does not reach the proper location, replace the 2 D cell batteries inside.)

4) Rotate selector switch to scale, and select the appropriate range.

5) Turn audio switch on or off as desired.

6) Set F/S switch to fast or slow needle response.

7) Monitor the site following the site Health and Safety Plan (HSP).

8) Turn the instrument off when not in use.

SOP-IN-005
DRAEGER PUMP

1.0 INTRODUCTION

The Model 31 bellows pump is designed together with the proper detection tube, to offer quick and accurate evaluation of hazardous situations. This gas detection system enables the user to make a methodical determination of the particular gases, or vapors present, as well as concentration levels of the contaminants.

This hand held pump draws 100 cubic centimeters of sample gas through a detector tube with each pump stroke. The mode of operation is that of a dosage pump as it carries out both the suction process and volume measurement simultaneously.

If the specific contaminant is known, the proper draeger tube can be purchased for the job. The CDM equipment room will have all the information needed regarding Draeger tube selection. Draeger supplies most all of the sampling tubes we use in the hazardous waste field.

The potential problems which contribute to poor accuracy are:

- Leak in the pump
- Insufficient pump strokes/operator error
- High humidity/temperature
- Interferences from other compounds
- Improperly stored tubes
- Tubes which expired stamp date

Be aware of approximate sample concentrations at the specific location that will be monitored. Order the Draeger tube which sufficiently covers the range of concentration making sure to keep within the range you pick without compromising sensitivity.

2.0 PROCEDURE

1) Break off both ends of the Draeger tube on the breakoff eyelet located on the front cover plate.

2) Insert the opened tube into the pump head with the arrow on the tube pointing towards the pump.

3) Hold the pump in your hand with the holding plate between the thumb and the base of the index finger, and the front cover plate contacting the fingers.

4) Compress the bellows completely with a squeezing motion, assuring that the total volume of the bellows is used.

5) Release the grip and allow the bellows to expand until the chain is taught.

6) Complete steps D and E as many times as the indicator tube instructions state.

7) Look at the tube when completed step F and record the results immediately.

8) Complete steps D and E as many times as the indicator tube instructions state.

SOP-IN-006
PARTICULATE MONITOR

1.0 INTRODUCTION

Aerosol Monitors are used in order to determine the relative concentrations of airborne particulates which may cause a respiratory hazard, such as dusts, fumes, smokes, and fogs. The information gathered by this equipment is used to establish levels of protection, and other control measures such as action levels.

CDM has a Model PDM-3 miniature real-time aerosol monitor. This unit uses a pulsed gallium arsenide light emitting diode source. The radiation scattered by airborne particles is sensed by a silicon-photovoltaic hybrid detector. A filter is incorporated to screen out any light whose wavelength differs from that of the pulsed source. The instrument continuously senses the combined scattering from the population of particles present within its sensing volume (approximately 1 cubic cm). These dimensions are large compared with the average separation between the individual airborne particles.

Air surrounding the PDM-3 passes freely through the open aerosol sensing chamber as a result of air transport caused by convection, circulation, ventilation and personnel motion. No pump is required for this operation. The sensor ranges particle sizes from 0.1 to 10 micrometers. The following controls are located on the front of the miniram PDM-3 as well as their individual functions:

MEAS - Starts the monitoring operation. Instrument will run up to 8.3 hours and will then shut down.

OFF - Stops any operation the instrument was performing.

TIME - Displays the elapsed time from the start of the measurement run. When pressed at the same time as the MEAS control, the instrument will operate continuously and <u>will not</u> automatically shut down.

TWA - Displays the time Weighted Average concentration in mg/cm^3 since the start of the run.

SA - Displays an 8 hour TWA.

PBK - With the instrument in the OFF mode, displays its stored data. If pressed for less than one second, the information will relayed through the digital output jack for printout.

ZERO - While operating, displays the stored zero value. To rezero the instrument, press OFF and the press ZERO. The next four consecutive ten second measurements are average and stored as the zero reference value. Wait until the display reads OFF before continuing measurements.

ID - Displays the instrument identification number.

The instrument is factory calibrated once a year against a filter gravimetric reference, using a standard test dust (Arizona road dust).

2.0 PROCEDURE

1) In a known dust free area, press OFF.

2) Depress zero and wait for the display to read OFF.

3) If the display is blank, press OFF and wait for the display to read OFF.

4) Press MEAS to begin measurement cycle. The first reading displayed will be GO followed by the last reading or 0.0.

5) After 36 seconds, the first new 10 second-average reading will be displayed.

6) Readings of 0.00 to 9.99 milligrams per cubic meter range. (If the ten second average exceeds 9.99 milligrams/cubic meter the LCD display will shift to range 0.0 to 99.9 milligrams per cubic meter.

7) Monitor the work activity as specified in the CA/T Site Health and Safety Plan.

8) The reading displayed on the instrument is updated every ten seconds.

9) At the end of the activity or day, press OFF.

There are 3 bar indicators on the face of the PDM-3, identified as OVR, ID and Batt. If the OVR bar is displayed at any time during operation in the measurement mode, the detection circuit is overloaded. This is caused by an object being inserted into the sensing chamber or sudden exposure to the chamber by sunlight. If either problem is eliminated, the bar will disappear during the next 10 second display period (If the problem is fixed in <1.5 minutes). If not, the OVR bar will remain on for the remainder of the run. This can be corrected by turning the unit off and wait 5 minutes ensuring all the conditions are correct, then press MEAS. A normal cycle should then occur, if not, bring the unit back to the CDM equipment warehouse. Always keep the instrument in its protective case when not being used and charge the instrument after use.

Other error codes include:

- 01: low battery condition
- 02: RAM (digital processing)
- 03: A/D (signal) overload

SOP-IN-007
AIR SAMPLING PUMP

1.0 INTRODUCTION

The purpose of a detailed air quality survey is to qualitatively and quantitatively examine the chemical composition of the vapors, gases, and particulates being released into the environment. The utilization of direct reading instrumentation during the walk-over survey provides some information regarding the presence of a hazardous emissions at the site. However, these field instruments are in general not "specific" for individual hazardous substances and therefore provide little information regarding the actual chemical composition of the airborne emissions at the waste site.

The identification of chemical specific hazardous emissions can only be completed through a program comprised of field collection, and subsequent laboratory analysis of individual samples. Samples are collected at known flow rates for a specified time interval and this information is combined with the laboratory analysis to establish the ambient air concentrations for individual hazardous materials.

CDM uses an SKC series 224 sampling pump to monitor ambient air through specific detector tubes. These pumps are set up to operate in the breathing zone in order to monitor for Health & Safety protocol. The series 224 sampling pump is a dual diaphragm design, driven by a high efficiency DC motor. The diaphragm pump is combined with special low pressure, positive acting values. The pump mechanism is sealed to prevent dirt from entering. The DC motor operates from rechargeable NiCd batteries.

The flow system is controlled to give an even, constant flow. This flow rate is maintained even if back pressure increases. Should the pump flow become obstructed, the unit will automatically shut itself down. When pump shutdown occurs, a fault light is displayed as well as the time the shutdown occurred.

Before calibration is performed, a specific detector tube filter should be chosen to collect the required sample. Along with this, a specific flow rate will be needed as well as a sampling period. This information can be obtained from the laboratory performing the analysis.

After the pump is calibrated to required specifications, it is ready for operation.

2.0 PROCEDURE

1) Charge the unit for a minimum of 12 hours prior to use.

2) Connect the sample tube, or filter to the tube leading to the pump.

3) With the pump off, use a small screwdriver to set the timers. The left dial set 100 minute increments, and the right dial sets 10 minute increments. For example, if the operator desires the pump to operate for 8 hours, it should be set for 480 minutes. Set the left dial at 4 and the right dial at 8. (Note: If the timer has not been used for some time, rotate the dial several times to clear the contacts. If you are not going to use the timer, set the left dial to 9.

4) When the set time is reached, the pump will shut down. Pressing the "Press-to-Test" button will indicate the exact running time.

5) Turn on the pump. Remember never to set the timer while the pump is operating or else the "Time Out" will occur at the previous setting.

6) Press the "Press-to-Test" button to determine the battery charge condition. The light should light or flicker indicating a full charge.

7) After the pump has shut down, verify that the required amount of minutes have been run (Press-to-Test" button)

8) Remove the tube or filter from the end of the sample line and cap both ends.

SOP-IN-008
DISSOLVED OXYGEN METER

1.0 INTRODUCTION

The dissolved oxygen meter is used to give continuous DO readings in water, wastewater, and certain other liquids. The DO probe uses a polarographic sensor with built in thermistors for temperature measurement, and compensation. A thin, permeable membrane stretched over the sensor isolates the sensor elements from the environment but allows oxygen to enter. When voltage is applied across the sensor, oxygen that has passed through the membrane reacts at the cathode causing a current to flow. The membrane passes oxygen at a rate proportional to the pressure difference across it. Since oxygen is rapidly consumed at the cathode, it can be assumed that the oxygen pressure inside the membrane is zero. Hence, the force causing the oxygen to diffuse through the membrane is proportional to the absolute pressure of oxygen outside the membrane. If the oxygen pressure increases, more oxygen diffuses through the membrane, and more current flows through the sensor. A lower pressure results in less current.

Limiting factors includes dissolved organic material and dissolved inorganic salts, which interfere in the DO probe output. Reactive type compounds such as H_2S and chlorine interfere with the probe.

2.0 CALIBRATION

All DO meters should be calibrated in the field using the following procedures:

1) Attach the probe to the face of the instrument (line up groove and tighten).

2) Turn on the instrument and allow 15 minute warm-up period to ensure probe stabilization.

3) Keep the probe tip in the plastic container that covers the membrane assembly. This chamber is moist and assumes 100% humidity. Ensure that this cap has moist clean kimwipes inside of it, and that the membrane is not placed in direct contact with the moist paper.

4) Zero the instrument by using the zero knob on the front of the meter.

5) Switch to TEMPERATURE and read. Refer to the chart on the back of the YSI meter.

6) Determine the altitude you're working in and check on the table on the back of the YSI for corresponding correction factor.

7) Multiply (if necessary) the calibration value by the correction factor. Write down this number.

8) Switch the unit to the appropriate mg/l range. The DO range goes 0-5, 0-10, 0-20 mg/l. Set the salinity knob to zero and adjust the CALIBRATE knob until the meter reads the correct value determined in step E. Wait 2 minutes to verify the correct setting.

9) The probe is calibrated and ready to use.

3.0 PROCEDURE

With the DO meter calibrated, remove the plastic cover on the tip of the probe. Place the probe in the sample and slowly raise and lower it in the sample. Adjust the salinity knob to the salinity of the sample. Allow about two minutes for the probe to stabilize to sample temperature and dissolved oxygen, and read the dissolved oxygen level.

If the DO probe has torn or damaged membrane, return it to the CDM equipment room where a new probe will be issued. Air bubbles can form under the membrane, check daily for this occurrence. The membrane, if bubbles are found, should be replaced.

If the DO meter is being used, an extended amount of time, the user can take spare membranes and filling solution to the site. The DO manual has a step by step instruction on the replacement of DO membranes.

SOP-IN-009
pH METER

1.0 INTRODUCTION

pH is the negative logarithm of the effective hydrogen ion concentration (or activity) in gram equivalents per liter used. This expresses both acidity, and alkalinity on a scale whose valves run from 0 to 14. Number 7 represents neutrality, and numbers greater than 7 indicate increasing alkalinity while numbers less than 7 indicate increasing acidity. pH is one of the most commonly analyzed parameters. Water supply treatment such as neutralization, softening, disinfection and corrosion control are all pH dependent. CDM has a variety of pH monitoring instruments in the equipment warehouse.

2.0 ORION SA 250 pH PROCEDURES

With the instrument fully calibrated, it is now ready for use. Follow the check out procedures:

1) Slide power switch to on position. Attach BNC shorting plug to BNC connector on top of meter.

2) If LO BAT indicator on LCD remains on, the battery must be replaced.

3) Slide mode switch to mv. Display should read $0 \pm .3$.

4) Slide mode switch to TEMP. Display should red 25.0. If 25.0 is not displayed, scroll using, and X10 keys, until 25.0 is displayed and press enter.

5) Slide mode switch to pH .01. Press iso. Display should read the letters ISO, then a value of 7.000. If 7.000 is not displayed, scroll until 7.00 is displayed and press enter.

6) Press slope. Display should read the letters SLP, then a value of 100.0. If 100.0 is not displayed, scroll until 100.0 is displayed and press enter.

7) Press sample. Observe the letters pH, then a steady reading of 7.00, $\pm$0.02 should be obtained. If not, press CAL and scroll until 200 is displayed and press enter. Press sample and observe a reading of 7.00.

8) Remove the shorting plug. After completing these steps, the meter is ready to use with an electrode.

9) Attach electrodes with BNC connectors to sensor input by sliding the connector onto the input, pushing down and turning clockwise to lock into position. Connect reference electrodes with pin tip connectors by pushing connector straight into reference input.

10) Put the temperature probe in the sample and let it stabilize.

11) Once temperature is stable, set the unit to read pH (by 0.1 or 0.01) and take a reading in the aqueous sample. (Remembering first to remove the cap on the end of the pH probe.)

3.0 MODEL TRIPAR ANALYZER PROCEDURES

With the instrument fully calibrated, it is now ready for use:

1) Connect the pH probe's BNC input connector to the front of the Tripar.
2) Put the pH/mv switch on the pH position.
3) Turn the parameter display selection switch to TEMP.
4) Plug in the gray temperature plug jack in the input temperature sensor connector.
5) Put end of temperature probe in the sample.
6) Allow the temperature to stabilize.
7) Turn the temperature compensation knob to the temperature shown.
8) Turn the parameter display selection switch to pH.
9) Put pH probe in the aqueous sample (remembering first to remove the cap on the end of the probe). Let it stabilize and record the reading.

SOP-IN-010
CONDUCTIVITY METER

1.0 INTRODUCTION

Conductivity is a numerical expression of the ability of an aqueous solution to carry an electrical current. This ability depends on the presence of ions in the solution, and their total concentration. Factors such as mobility valence, relative concentration, and temperature also combine to create this occurrence. Solutions of most inorganic acids, bases and salts are relatively good conductors. Organic compounds in aqueous solutions are not good conductors. For example, freshly distilled water has conductivity reading of .5 to 2 mhos/cm and increases with time. This increase is caused by absorption of atmospheric carbon dioxide, and to a lesser extent ammonia. While industrial type wastes have conductivity readings of 10,000 $\pm$mhos/cm.

2.0 MODEL SCT PROCEDURES

The model 33 SCT has 3 conductivity scales of 0-500, 0-5000, and 0-50,000 mhos/cm. Salinity is scaled 0-40 parts per thousand in a temperature range of -2 to +45°C. Temperature is scaled -2° to +5°C.

With the instruments calibration verified, the unit is now ready for use. The model 33 S-C-T meter face is scaled and calibrated to give an accurate reading of the conductivity of a water sample by measuring the amount of current flow between two fixed electrodes in the probe. The unit also measures salinity in a special range conductivity circuit, which includes a user-adjusted temperature compensator. A precision thermistor in the probe measures temperature by changing its resistance in relation to the temperature of the water.

The start-up procedure is as follows:

1) Plug the probe plug receptacle in the side of the meter.

2) With the mode select in the OFF position, check to see that the meter needle is centered at the zero mark on the conductivity scale and adjust if necessary.

3) Turn the mode control switch to Red Line position.

4) Adjust the Red Line control knob so the meter needle lines up with the red line on the meter face. If this cannot be accomplished, replace the batteries. If battery replacement is necessary, use only alkaline "D" cells as regular carbon zinc batteries will cause errors.

5) Place the probe into the solution to be measured.

6) Set the mode control to TEMPERATURE. Read the temperature on the bottom scale of the meter in °C. Allow time for the probe temperature to come to equilibrium before taking a reading.

7) With the probe in the solution to be tested, adjust the conductivity scale until the meter reading is on scale. (Multiply the reading by the correction on the calibration sticker on the instrument).

8) When using the X10 and X100 scales, depress the CELL TEST button. If the reading on the dial moves $\pm$2%, the electrode is fouled and needs to be cleaned. Repeat the measurement on another instrument.

9) Store the probe in distilled water when not in use.

SOP-IN-011
PHOTOVAC PORTABLE GAS CHROMATOGRAPH

1.0 INTRODUCTION

The Photovac portable gas chromatograph (GC) can provide for accurate and specific identification of volatile organic compounds in a field control laboratory.

2.0 EQUIPMENT PREPARATION

1) The Photovac portable gas chromatograph should be set up in a sheltered area and, if possible, within a climate controlled area to minimize temperature changes. Do not place the GC near any equipment that causes vibration. A flat table, large enough to accommodate the GC, the printer, a lab size oven, and electrical power packs for the GC should be utilized during operation.

2) Fill the GC with carrier gas being sure not to pressurize the GC with more than 1500 psi of carrier gas. Check to ensure the pressure of the air feed to the GC column is 40 psi. The carrier gas should contain no more than 2.0 ppmv of total hydrocarbons and not less than 0.1 ppmv of total hydrocarbons. The lower the hydrocarbon concentration the lower the baseline of the GC. A lower baseline minimizes interference of compound identification.

3) Install a new Teflon septa in the injection port being utilized. The septa should be replaced at the start of each day and after every twenty injections.

3.0 CALIBRATION PROCEDURES AND FREQUENCY

The Photovac portable gas chromatograph will be calibrated at the beginning of each day prior to sample analysis.

- Gas Standards

  Gas standards used to calibrate the GC will be obtained from certified compressed gas cylinders of known concentration. CDM stocks two compressed gas standard cylinders containing the following gases and concentrations:

- Cylinder 1

  Benzene - 10 ppmv
  Toluene - 10 ppmv
  Ethyl Benzene - 10 ppmv
  M-xylene - 10 ppmv
  O-xylene - 10 ppmv
  P-xylene - 10 ppmv

- Cylinder 2

  Trans 1,2 Dichloroethylene - 1.05 ppmv
  1,1,1 Trichloroethane - 19.3 ppmv
  Trichloroethylene - 1.13 ppmv

These gas cylinders were purchased from Scott Specialty Gas Corporation and are certified by Scott to be traceable to NBS standards.

The calibration procedure using these cylinders is as follows:

1) A two stage pressure regulator (CGA 350) is attached to the standard gas cylinder to be used.

2) A 250 ml glass sampling bulb, determined clean by injecting a volume of air obtained from the bulb onto the GC (described later), is labeled and attached to the effluent port of the second stage of the gas regulator. The Teflon stopcocks of the sampling bulb are opened.

3) The sample cylinder valve is opened and the first stage of the regulator is pressurized.

4) Slowly the diaphragm valve controlling the gas flow entering the second stage is opened until the pressure reads 2 psig.

5) The valve allowing the gas to exit the second stage of the regulator is opened until the gas can be heard escaping from the regulator and passing through the glass sample bulb. Purge the bulb for approximately ten seconds. Close the Teflon stopcock located at the discharge end of the sampling bulb, then, the stopcock closest to the regulator. In this way the calibration gas is collected at the same pressure as the delivery pressure of the second stage of the regulator.

6) Using a gas tight 1 ml syringe, extract approximately 500 ul of the calibration gas from the glass bulb and purge the volume of gas into the atmosphere. Repeat this step.

7) Place the syringe needle in the glass bulb. Pull the syringe plunger back so approximately 500 ul of calibration gas enters the syringe barrel. Without removing the syringe from the glass bulb depress the plunger. Pump the syringe in this manner several times.

8) Extract the syringe from the glass bulb with approximately 500 ul of calibration gas present. Carefully depress the plunger until 300 ul of calibration gas is present in the syringe barrel. Immediately inject this gas volume into the Photovac gas chromatograph.

9) A response factor for each analyte is obtained as the ratio of the known gas concentration injected and the area under the peak produced by that injection. This integration is performed automatically by the internal Photovac data processor and stored in the library.

10) The procedure to obtain a calibration gas sample is repeated and the gas volume is injected into the GC. The GC will identify the compounds in the sample stream that have retention times within +/- 20% of the retention times of the compounds in the library. The area of these identified peaks will be compared to the response factor of the compounds stored in the library and integrate a corresponding concentration.

11) If the calibration check concentration does not equal +/- 15% of the library concentration, a new calibration check is performed. If this check fails, a new library is created.

4.0 SAMPLE ANALYSES

The following procedure will be followed when performing analysis of samples.

1) The Photovac portable GC is set as described above. The GC function and application file is loaded into memory. This includes all previously established calibration data and retention time information.

2) 300 ul of sample are obtained from the sample source and injected into the GC. Samples will be injected as soon as possible after it is collected.

3) Immediately after injection the GC is started.

4) Each chromatograph run will run for a minimum of 5 minutes. At this time the run will be stopped and the results obtained.

5) Following completion of the run, the Photovac GC will produce a hard copy printout of the results. This printout will include the sample identification, time of analysis, and appropriate operating parameters.

This procedure will be followed for all sample runs.

5.0 METHOD BLANKS AND DUPLICATES

Prior to any calibration or sample injections, the integrity and level of contamination of each syringe used for injections will be verified.

1) Plungers will be removed from the barrel of the syringe and placed into a laboratory oven for 5 minutes. The temperature of the oven should not be above 150 degrees F or below 120 degrees F.

2) The syringes will be removed from the oven, cooled, and reassembled.

3) Pump the syringe plunger several times, purging the syringe with ambient air.

4) Collect approximately 500 ul of ambient air in the syringe and carefully depress the plunger to 300 ul. Immediately inject the gas volume into the GC.

5) Detection of the target compounds above the detection limit (50 ppbv for most compounds) will require another decontamination procedure before additional analyses.

6) Blanks will be performed after every sample and calibration injection. Blanks will not be performed between duplicate sample injections.

7) Duplicate samples will be performed at a minimum of 1 every 10 sample injections.

STANDARD OPERATING PROCEDURES

LABORATORY PROCEDURES

SOP-LA-001
LABORATORY DATA QUALITY ASSESSMENT

1.0 INTRODUCTION

The term "data quality" refers to the level of uncertainty associated with a particular data set. The data quality associated with environmental measurement data is a function of the sampling plan rationale and procedures used to collect the samples as well as the analytical methods and instrumentation used in making the measurements. Each component has its own potential sources of error and biases that can effect the overall measurement process.

Sources of error that can be traced to the sampling component of environmental data collection are poor sampling plan design, inconsistent use of standard operating procedures, sample handling, and transportation. The most common sources of error that can be traced to the analytical component of the total measurement system are calibration and contamination problems. It is recognized that by far the largest component of the total uncertainty associated with environmental data collection originates from the sampling process. All sampling programs initiated in support of this project will stress forward planning and be well conceived and reviewed prior to the collection of any samples as a way to minimize this major source of potential error.

Uncertainty cannot be eliminated from environmental measurement data. The amount of uncertainty that can be tolerated depends on the objective of the sampling program and the intended use of the data collected. The purpose of the project's quality assurance program is to assure that the data quality of all data collected be of known and ascertainable value.

2.0 DATA QUALITY CRITERIA

Data quality will be assessed in terms of its precision, accuracy, representativeness, completeness, and comparability. Although not a data quality parameter per se, analytical method detection limits will also be discussed in this section. Each parameter will now be discussed individually.

2.1 Precision

Precision is a measure of the reproducibility of analyses under a given set of conditions. The overall precision of a sampling event is a mixture of sampling and analytical factors. The precision of data collected in support of this project will be assessed on two different levels:

- by calculating the relative percent difference (RPD) of laboratory matrix spike duplicates and/or laboratory replicate samples (a measure of analytical precision)

- by calculating the RPD of field duplicates samples submitted to laboratory "blind" (a measure of the precision of the entire measurement system, including sampling)

Relative percent difference will be calculated according to the following equation:

$$RPD = \frac{|A - B|}{(A + B)/2} \times 100\%$$

where: A = Sample Result
B = Replicate Sample Result

2.2 Accuracy

Accuracy is a measurement of the amount of bias that exists in a measurement system. This can be thought of as the degree that the reported value agrees with the supposed "true value". The accuracy of data collected in support of this project will be assessed in the following ways:

- by calculating the percent recovery (%R) of laboratory matrix spikes and/or laboratory control standards
- by documenting the level of contamination that exists (if any) in laboratory method blanks
- by documenting the level of contamination that exists (if any) in field and/or trip blanks submitted to the laboratory "blind" for analysis
- Percent recovery will be calculated according to the following equation:

$$\%R = \frac{SSR - SR}{SC} \times 100$$

where: SSR = Spiked Sample Result
SR = Sample Result
SA = Spike Concentration

2.3 Representativeness

Unlike the previous two criteria which can be expressed in quantitative terms, representativeness is a qualitative parameter. However, in terms of overall data quality, representativeness may be the most important parameter of all.

The representativeness criterion is concerned with the degree to which a sample reflects (represents) a characteristic of a population, parameter variations at a specific location or an environmental condition. Sample representativeness will be addressed in support of this project through a detailed sampling plan design and rationale and through the proper use of the appropriate sampling standard operating procedures, depending on sample matrix and the parameters to be analyzed.

Composite samples will be collected in situations conducive to compositing techniques (particularly samples collected along the vertical extent of a borehole). The use of composite samples tends to maximize the representativeness of a sampling round because more information is provided about a much broader area than a single grab sample. This is especially true in situations where the objective of sampling is to determine where gross contamination exits on site and the location of any "hot spots". In these cases, broad coverage of the area to be sampled is more important than obtaining the lowest possible detection limits.

2.4 Completeness

The completeness criterion is a measure of whether all the information necessary for a valid scientific study has been collected. It is evaluated by comparing the project objectives with the amount of data collected to determine if any data "short falls" exist. Missing data can result from many occurrences, from sample acquisition and accessibility problems to sample breakage and data rejected because of quality control deficiencies.

The critical sample concept is important part of the completeness criterion. Critical data points are sample locations for which valid data must be obtained in order for the sampling event to be considered complete. If a sampling location is determined to be a critical data point, it will be denoted as such in the sampling and analytical plan and in the project field logbooks.

2.5 Comparability

The comparability criterion is a quality characteristic which is an expression of the confidence with which one data set can be compared with another. Comparability issues are of importance at two different levels of a sampling program. The primary comparability issues are concerned with whether the field sampling techniques, analytical procedures, and concentration units of one data set can be compared with another.

The comparability criterion also applies to the environmental conditions/ considerations present at the time of the sampling. Temporal and/or seasonal variations may make data collected from the same location at different times of the year incomparable, or comparable in a relative sense only, for example.

Comparability is a prime concern when existing data is being integrated into an on-going project's data base. Special attention will be given in this regard whenever existing data is being used in support of this project.

2.6 Method Detection Limits

Whenever environmental measurement data is to be used in comparison with predetermined "action levels" or other regulatory requirements, the reported method detection limits of the analytical data is of prime importance. Analytical methods specified in support of this project should have a reported detection limit at least 50% below the required action level to assure that measurements made in the vicinity of the action level are of high quality. In circumstances concerning extremely low action levels or regulatory requirements where analytical techniques will have to be pushed to their limits, every effort will be made to select the most appropriate analytical procedures.

It is recognized that analytical detection limits are sample specific and are affected by sample volumes as well as the need for sample concentration or dilution. These circumstances will be accounted for in the review and interpretation of the analytical results.

3.0 QUALITY CONTROL

Two separate levels of quality control exist for all samples collected in support of this project, internal laboratory quality control and program generated quality control.

3.1 Internal Laboratory Quality Control

Internal laboratory quality control is a function of the individual laboratory's Quality Assurance/Quality Control (QA/QC) Plan. A laboratory's QA/QC plan contains specific criteria governing the manner in which analyses are conducted and provide information on the laboratory's performance and control of the sources of error that exist within the lab. Included in the plan are requirements for the type and frequency of quality control check samples that are to be analyzed on a routine basis.

All laboratory analysis conducted in support of this project must include the following quality control check samples:

- Surrogate spikes (where appropriate)
- Matrix spike/matrix spike duplicate or laboratory duplicates and laboratory control samples (where appropriate)
- Method blanks

The laboratory may adhere to the analysis frequency specified in their QA/QC plan for these check samples provided that the specified frequency is equal-to or greater-than the frequency specified in Table 1 or as modified/specified by the QAP.

3.2 Program Generated Quality Control

Program generated quality control consists of quality control check samples that are submitted to the laboratory for analysis "blind" along with actual environmental samples. These samples provide quality control information for the entire sampling event, from the actual sampling and handling through laboratory analysis. As such, they can provide the best overall estimate of the total uncertainty associated with the sampling round.

TABLE 1

LABORATORY SAMPLE FREQUENCY

QC Check Sample	Frequency of Analysis
Method Blanks	One per analytical batch or one per every twenty samples
Matrix Spike/Matrix[1]	One per analytical batch or one per every twenty samples
Spike Duplicate (MS/MSD)	Same
Surrogate Spikes	One per every trace organic analysis

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[1] The combination of laboratory duplicates and laboratory control samples may be substituted for MS/MSD analysis for parameters where they are more appropriate.

Program generated quality control samples collected in support of this project are:

- Field replicated samples
- Field blanks
- Trip blanks
- Rinsate blanks
- Background samples

Each report should have a cover page that references the CDM task number. The cover page also provides an opportunity to describe in a narrative format any unusual problems or interferences encountered during analysis. In addition, all results should be reported on a dry weight basis for soils and at dilution-corrected concentrations for all samples.

3.2 QC Deliverables Package

The following quality control data is required to be reported. For "priority pollutant" type analysis, the following quality control data is required per sample batch:

- **Method Blanks** associated with each analytical procedure.
- **Surrogate Spike Recoveries** for volatile organics, PCBs, semi-volatiles and polynuclear aromatic hydrocarbons.
- **Matrix Spike/Matrix Spike Duplicates** for all priority pollutant parameters. One MS/MSD should be run for every 20 samples.

For non-priority pollutant parameters, the following quality control data is required per sample batch:

- **Method Blanks**
- **Laboratory Duplicates** -- One duplicate analysis should be performed at a frequency of one per twenty samples.

No specific acceptance criteria for blanks and spike recoveries will be set forth here, however, all labs are expected to conform to standard EPA quality control specifications. CDM expects laboratories to reanalyze samples if quality control samples fail to meet EPA specifications.

The quality control data may be presented as a quality control section within the report or it may be integrated among the results.

3.4 Minimum Detection Limits

Tables 2 to 7 present the water and soil detection limits required for projects. Detection limits for soil were derived based on the amount of soil required for each analysis in EPA SW846 and the projected average moisture content for soils encountered during this project. These soil MDLs are target limits and should be adhered to as closely as possible.

TABLE 2

DETECTION LIMITS FOR VOLATILE ORGANIC COMPOUNDS

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
Benzene	1.0	3.0
Bromodichloromethane	1.0	3.0
Bromoform	1.0	3.0
Bromomethane	5.0	15
Carbon tetrachloride	1.0	3.0
Chlorobenzene	1.0	3.0
Chloroethane	5.0	15
2-Chloroethyl vinyl ether	5.0	15
Chloroform	1.0	3.0
Dichloromethane	5.0	15
Dibromochloromethane	1.0	3.0
Dichlorodifluoromethane	1.0	3.0
1,2-Dichlorobenzene(V)	1.0	3.0
1,3-Dichlorobenzene(V)	1.0	3.0
1,4-Dichlorobenzene(V)	1.0	3.0
1,1-Dichloroethane	1.0	3.0
1,2-Dichloroethane	1.0	3.0
1,1-Dichloroethene	1.0	3.0
cis-1,2-Dichloroethene	1.0	3.0
trans-1,2-Dichloroethene	1.0	3.0
1,2-Cichloropropane	1.0	3.0
cis-1,3-Dichloropropene	1.0	3.0
Ethylbenzene	1.0	3.0
Chloromethane	1.0	3.0
1,1,2,2-Tetrachloroethane	1.0	3.0
Tetrachloroethene	1.0	3.0
Toluene	1.0	3.0
1,1,1-Trichloroethane	1.0	3.0
1,1,2-Trichloroethane	1.0	3.0
Trichloroethene	1.0	3.0
Trichlorofluoromethane	1.0	3.0
Vinyl chloride	5.0	15
Carbon disulfide	1.0	3.0
Acetone	2.0	6.0
vinyl acetate	2.0	6.0
Methyl ethyl ketone	2.0	6.0

TABLE 2

DETECTION LIMITS FOR VOLATILE ORGANIC COMPOUNDS (Continued)

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
Isopropylacetone	2.0	6.0
2-Hexanone	2.0	6.0
Styrene	1.0	3.0
Xylenes	1.0	3.0

Notes:

(1) Reporting limits expressed refer to a "best case" scenario. High target and non-target concentrations may require analytical dilutions resulting in elevated reporting limits.

(2) Detection limits for solid matrices (soils, sludges) based on sample aliquot size specified by method with approximately 25% moisture content. Matrix interferences and high moisture soils may result in elevated reporting limits.

TABLE 3

DETECTION LIMITS FOR SEMI-VOLATILE ORGANIC COMPOUNDS

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
Aniline	10	300
Benzyl alcohol	20	600
Bis(2-chloroethyl)ether	10	300
Bis(2-chloroisopropyl)ether	10	300
2-Chlorophenol	10	300
1,3-Dichlorobenzene(A)	10	300
1,4-Dichlorobenzene(A)	10	300
1,2-Dichlorobenzene(A)	10	300
Hexachloroethane	10	300
2-Methyl phenol	10	300
4-Methyl phenol	10	300
N-Nitrosodimethylamine	10	300
N-Nitrosodi-N-propylamine	10	300
Phenols	10	300
Benzoic acid	50	1500
Bis(w-chloroethoxy)methane	10	300
4-chloroaniline	10	300
4-Chloro-3-methylphenol	10	300
2-4-Dichlorophenol	10	300
2,4-Dimethylphenol	10	300
Hexachlorobutadiene	10	300
Isophorone	10	300
2-Methylnaphthalene	10	300
Naphthalene	10	300
Nitrobenzene	10	300
1,2,4-Trichlorobenzene	10	300
Acenaphthene	10	300
Acenaphthylene	10	300
2-Chloronaphthalene	10	300
4-Chlorophenyl phenyl ether	10	300
Dibenzofuran	10	300
Diethyl phthalate	10	300
Dimethyl phthalate	10	300
2,4-Dinitrophenol	50	1500

Notes:

(1) Reporting limits expressed refer to a "best case" scenario. High target and non-target concentrations may require analytical dilutions resulting in elevated reporting limits.

(2) Detection limits for solid matrices (soils, sludges) based on sample aliquot size specified by method with approximately 25% moisture content. Matrix interferences and high moisture soils may result in elevated reporting limits.

TABLE 4

DETECTION LIMITS FOR ABN-EXTRACTABLE ORGANICS

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
2,4-Dinitrotoluene	10	300
2,6-Dinitrotoluene	10	300
Fluorene	10	300
Hexachlorocyclopentadiene	10	300
2-Nitroanaline	50	1500
3-Nitroaniline	50	1500
4-Nitroaniline	50	1500
4-Nitrophenol	50	1500
2,4,6-Trichlorophenol	10	300
2,4,5-Trichlorophenol	10	300
Anthracene	10	300
4-Bromophynyl phenyl ether	10	300
Di-n-butyl phenyl ether	10	300
Di-n-butyl phthalate	10	300
2-Methyl-4,6-dinitrophenol	10	300
diphenylhydrazines	10	300
Fluoranthene	10	300
Hexachlorobenzene	10	300
N-Nitrosodiphenylamines	10	300
Pentachlorophenol	50	1500
Phenanthrene	10	300
Benzidine	20	600
Benzo(a)anthracene	10	300
Di(2-ethylhexyl)phthalate (DEHP)	10	300
Butyl benzyl phthalate	10	300
Chrysene	10	300
3,3'-Dichlorobenzidene	20	600
Pyrene	10	300
Benzo(b)fluoranthene	10	300
Benzo(k)fluoranthene	10	300
Benzo(ghi)pyrene	10	300
Dibenzo(a,h)anthracene	10	300
Di-n-octyl phthalate	10	300
Indeno(1,2,3,-c,d)pyrene	10	300

Notes:

(1) Reporting limits expressed refer to a "best case" scenario. High target and non-target concentrations may require analytical dilutions resulting in elevated reporting limits.

(2) Detection limits for solid matrices (soils, sludges) based on sample aliquot size specified by method with approximately 25% moisture content. Matrix interferences and high moisture soils may result in elevated reporting limits.

TABLE 5

DETECTION LIMITS FOR PCBs

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
Aroclor 1221	0.5	0.05
Aroclor 1232	0.5	0.05
Aroclor 1242/1016	0.5	0.05
Aroclor 1248	0.5	0.05
Aroclor 1254	0.5	0.05
Aroclor 1260	0.5	0.05

Notes:

(1) Reporting limits expressed refer to a "best case" scenario. High target and non-target concentrations may require analytical dilutions resulting in elevated reporting limits.

(2) Detection limits for solid matrices (soils, sludges) based on sample aliquot size specified by method with approximately 25% moisture content. Matrix interferences and high moisture soils may result in elevated reporting limits.

TABLE 6

DETECTION LIMITS FOR PESTICIDES

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
Methoxychlor	0.2	0.02
Chlordane	0.5	0.50
Toxaphene	1.0	0.10

Notes:

(1) Reporting limits expressed refer to a "best case" scenario. High target and non-target concentrations may require analytical dilutions resulting in elevated reporting limits.

(2) Detection limits for solid matrices (soils, sludges) based on sample aliquot size specified by method with approximately 25% moisture content. Matrix interferences and high moisture soils may result in elevated reporting limits.

TABLE 7

DETECTION LIMITS FOR TRACE METALS

Parameter	Matrix: Aqueous (ug/L)	Matrix: Solid (ug/kg dry)
Antimony	60	6.0
Arsenic	5	0.5
Beryllium	10	1.0
Cadmium	10	1.0
Chromium	20	2.0
Copper	20	2.0
Lead	50	5.0
Mercury	0.5	0.3
Nickel	20	2.0
Selenium	10	1.0
Silver	20	2.0
Thallium	75	10
Zinc	20	2.0

Notes:

(1) Reporting limits expressed refer to a "best case" scenario. High target and non-target concentrations may require analytical dilutions resulting in elevated reporting limits.

(2) Detection limits for solid matrices (soils, sludges) based on sample aliquot size specified by method with approximately 25% moisture content. Matrix interferences and high moisture soils may result in elevated reporting limits.

4.0 DATA QUALITY REQUIREMENTS

Taking into consideration a project's overall objective and intended use of the data, it should be considered that analyses be conducted in accordance with SW-846, Test Methods for Evaluating Solid Waste, Third Edition procedures. In cases where additional procedures are required, other EPA approved laboratory methods will be used. The specific method reference for a given sampling round will be provided in the site specific SAP or QAP. The precision goals for field duplicates, accuracy goals for laboratory matrix spikes and/or laboratory control samples and completeness goals will also be specified in the SAP or QAP.

Appendix B

RIDEM Guidelines
for the
Management of Investigative Derived Waste

State of Rhode Island
Department of Environmental Management
Division of Site Remediation

Policy Memo 95-01

Guidelines for the Management of Investigation Derived Wastes

1.0 Purpose

The purpose of this policy memo is to provide guidance regarding the management of potentially contaminated materials generated during environmental site investigations, pilot tests, and interim remedial actions (hereafter referred to as investigatory activities) conducted on property in Rhode Island. It is the intent of the Department that the management of investigation derived wastes (IDW) be:

- protective of human health and the environment, and accordingly result in no additional site related risks than existed prior to investigation activities;
- cost effective, consider the likely site remedy and consider waste minimization techniques; and
- done in a manner consistent with all applicable or relevant and appropriate requirements to the extent practicable.

The management of IDW should recognize that investigatory activities are not considered comprehensive remedial actions, and therefore final management of most materials encountered during these activities should be postponed to the extent feasible until a final site remedy has been determined.

The potential problems of managing IDW should be a factor in choosing an investigative method. Project managers should strive to minimize the generation of IDW to reduce the need for special storage or disposal requirements that may result in substantial additional costs yet provide little or no reduction in site risks relative to the final remedial actions.

It is important to note that for all investigatory activities in areas which have the potential to encounter a listed hazardous waste stream, all IDW originating from the area of concern must be managed in accordance with the Department's Rules and Regulations for Hazardous Waste Management.

The regulated community may use the management and storage methods outlined in this memo or submit, for review and approval, alternative IDW management proposals on a site specific basis. The Division reserves the right to require additional IDW handling procedures as it deems necessary.

2.0 Classes of IDW

For the purposes of this policy memo IDW are separated into the following four classes:

A. Solid - includes unsaturated soil, soil saturated with water, and pre-existing solid waste;

B. Liquid - includes groundwater, drilling water and decontamination rinsate;

C. Liquid Wastes and Associated Saturated Solids, and Buried Containers

- includes liquid wastes, any solids saturated with liquid waste (i.e., a matrix containing greater than 1% liquid waste), and buried containers such as drums, electrical transformers, electrical capacitors, unexploded ordnance and any other type of container which could potentially contain a hazardous substance; and

D. Personnel Equipment

- includes equipment and supplies which are not reusable upon completion of current site activities (such as personal protective equipment and disposable sampling equipment).

3.0 IDW Management Guidelines

The Department recommends the following management guidelines (arranged by IDW class) for initial handling, segregating, storage and disposal of IDW.

3.1 Solid

These guidelines pertain to any investigatory activities which generate solid IDW, including but not limited to excavations such as boreholes, trenches and test pits.

A. All intrusive investigatory activities should be observed for evidence of buried containers or liquid waste saturated solids.

B. The preferable management alternative for all solids extracted from a site is replacement back into the same excavation from which it originated, however, consideration should be given to the likely site remedy prior to taking this action.

C. Upon excavation, all solid IDW should be placed on low permeability synthetic sheeting of thickness no less than 10 mils. No material should be stored on synthetic sheeting for a period greater than 48 hours without receiving prior Division approval. All solids stored on synthetic sheeting should be covered with similar material during all periods when excavation work is not being conducted in that area of concern.

D. When refilling excavations, the original stratigraphy of the area should be maintained to the extent feasible. If the excavation is such that it is not possible to entirely refill the excavation, as in the case of a monitoring well placement, the excess solids should be managed in accordance with Sections 3.1(C) and (E) of this policy memo unless an alternative management plan has been approved. Under no circumstances shall solid IDW from one area of concern be disposed of in a different area of concern without prior Division approval.

E. Long term storage of solids (typically periods greater than 48 hours) should be in secure containers which are suitable for potential off-site disposal (for example: roll-off dumpsters or 55 gallon drums). The contents of the containers should be characterized to determine the appropriate treatment or disposal method in a manner approved by the Division and consistent with the contaminants of concern at the site. This characterization can utilize either site investigation samples or samples whose sole purpose is to characterize the IDW.

3.2 Liquid

The following guidelines pertain to any investigatory activities which generate liquid IDW; including, but not limited to, groundwater monitoring well development and sampling, and decontamination procedures. Aquifer pump tests are beyond the scope of this policy memo and require specific Department review and approval.

A. All liquid IDW which has been extracted from a site must be stored in a secure container suitable for off-site disposal, and its contents properly characterized by Division approved laboratory analysis methods for all contaminants of concern at the site to determine the appropriate treatment or disposal method. These analysis methods should be consistent with those proposed for the site investigation work plan. This characterization can utilize either site investigation samples or samples whose sole purpose is to characterize the IDW.

B. Storage of all liquid IDW should be in a segregated manner (liquid which has been taken from the site, by area of concern, from decontamination liquid).

C. All non-decontamination liquid IDW that meets the groundwater quality standards for the

subject property's groundwater classification, as stated in the Department's Rules and Regulations for Groundwater Quality may be disposed of on-site. Liquid which exceeds these criteria shall be handled on a case by case basis. If it is anticipated that there will be exceedances of any groundwater quality standards at a site, the investigation work plan should contain a proposed management plan for this IDW.

D. The disposal criteria for all non-decontamination liquid IDW containing contaminants for which there are no RIDEM groundwater quality standards must be proposed and approved on a case by case basis. Alternative criteria for each contaminant may be proposed as concentrations of individual contaminants or groups of contaminants (i.e., total concentration of volatile organic compounds) below which there will be no demonstrated additional adverse risk to human health or the environment.

E. The preferred alternative for all liquid IDW generated as a result of decontamination procedures is disposal on site.

F. Liquid IDW which, in accordance with this memo, can be disposed of on-site should be spread uniformly over a relatively level uncontaminated portion of the site. The on-site disposal of liquid IDW may not lead to increased migration of contaminants from the site nor impact a surface water body, wetland or neighboring property to any degree, and must infiltrate the ground surface. If the volume of liquid IDW generated during a single investigation is expected to exceed 250 gallons, Division approval is required prior to any on-site disposal.

3.3 Liquid Wastes and Associated Saturated Solids, and Buried Containers

The following guidelines pertain to any investigatory activities which could potentially generate liquid wastes and associated saturated solids, or encounter buried containers, including but not limited to excavations such as boreholes, trenches and test pits.

A. Investigations in areas which are likely to encounter liquid wastes and associated saturated solids or buried containers should include a contingency plan for proper handling and disposal of these wastes in the investigation work plan.

B. The Division of Site Remediation should be contacted immediately upon the discovery of liquid wastes and associated saturated solids or buried containers for all projects which do not have a Division approved contingency plan addressing this class of IDW.

C. All liquid wastes and associated saturated solids extracted from a site should be stored in secure containers suitable for potential off-site disposal, and managed in accordance with the Department's Rules and Regulations for Hazardous Waste Management and/or the Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases as appropriate. Liquid wastes and associated saturated solids extracted from a site must be properly characterized by Division approved laboratory analysis methods for all contaminants of concern, and as necessary to determine the proper treatment or

disposal method. Under no circumstances shall liquid wastes and associated saturated solids from one area of concern be disposed of in a different area of concern without prior Division approval.

D. All buried container IDW should be extracted from its excavation upon Division approval. This approval may take the form of an approved contingency plan or an incident specific approval by Division personnel. Following extraction, buried containers should be stored in a manner which provides secondary containment for 110% of the container's volume, and managed in accordance with the Department's Rules and Regulations for Solid Waste Management Facilities, and/or the Department's Rules and Regulations for Hazardous Waste Management as appropriate. The contents of any buried containers must be properly characterized by Division approved laboratory analysis methods for all contaminants of concern, and as necessary to determine the proper treatment or disposal method. Under no circumstances should an extracted container nor its contents be disposed of on site.

E. Unexploded ordnance encountered and/or extracted from a site must be managed on a site specific basis under the direction of personnel from the State Fire Marshal's Office, the appropriate municipal Fire Department, and the Division of Site Remediation.

3.4 Personnel Equipment

All personnel equipment IDW should be ultimately disposed of off- site and must be managed in accordance with the Department's Rules and Regulations for Solid Waste Management Facilities or the Department's Rules and Regulations for Hazardous Waste Management, as appropriate. Under no circumstances should personnel equipment IDW be disposed of on site.

4.0 IDW Storage Guidelines

The investigation work plan must include provisions for the proper storage and security of IDW in the time period between the generation of the material and the determination of the appropriate treatment or disposal method. The Department recommends the following procedures for the management and storage of IDW.

A. All IDW which is determined to be a hazardous waste must be managed in accordance with the Department's Rules and Regulations for Hazardous Waste Management.

B. For investigatory activities which are likely to require storage of IDW, the site investigation work plan must include the following:

1. selected containment methods

2. the designated secure storage area

3. a schedule for IDW disposal

4. a point of contact responsible for IDW management

C. All non-hazardous waste IDW storage containers must be labelled with the following information:

1. class of IDW

2. source area

3. date of generation

4. generator name, address and phone number

D. The period of storage of non-hazardous waste IDW should logically correspond with ongoing site investigative or remedial work and be completely disposed of within 30 days of the end of that phase of site work.

Terrence Gray, Chief
Division of Site Remediation

4-18-95
Date

Appendix C

ASTM and CDM Guidelines for Soil Gas Monitoring

Designation: D 5314 – 93

Standard Guide for Soil Gas Monitoring in the Vadose Zone[1]

This standard is issued under the fixed designation D 5314; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers information pertaining to a broad spectrum of practices and applications of soil atmosphere sampling, including sample recovery and handling, sample analysis, data interpretation, and data reporting. This guide can increase the awareness of soil gas monitoring practitioners concerning important aspects of the behavior of the soil-water-gas-contaminant system in which this monitoring is performed, as well as inform them of the variety of available techniques of each aspect of the practice. Appropriate applications of soil gas monitoring are identified, as are the purposes of the various applications. Emphasis is placed on soil gas contaminant determinations in certain application examples.

1.2 This guide suggests a variety of approaches useful to successfully monitor vadose zone contaminants with instructions that offer direction to those who generate and use soil gas data.

1.3 This guide does not recommend a standard practice to follow in all cases nor does it recommend definite courses of action. The success of any one soil gas monitoring methodology is strongly dependent upon the environment in which it is applied.

1.4 Concerns of practitioner liability or protection from or release from such liability, or both, are not addressed by this guide.

1.5 This guide is organized into the following sections and subsections that address specific segments of the practice of monitoring soil gas:

Section	
4	Summary of Practice
4.1	Basic principles, including partitioning theory, migration and emplacement processes, and contaminant degradation
4.7	Summary Procedure
5	Significance and Use
6	Approach and Procedure
6.1	Sampling Methodology
6.5	Sample Handling and Transport
6.6	Analysis of Soil Gas Samples
6.7	Data Interpretation
7	Reporting

1.6 *This guide does not purport to set standard levels of acceptable risk. Use of this guide for purposes of risk assessment is wholly the responsibility of the user.*

1.7 The values stated in either inch-pound or SI units are to be regarded separately as the standard. The values given in parentheses are for information only.

1.8 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 653 Terminology Related to Soil, Rock, and Contained Fluids[2]

D 1356 Terminology Relating to Atmospheric Sampling and Analysis[3]

D 1357 Practice for Planning the Sampling of the Ambient Atmosphere[3]

D 1452 Practice for Soil Investigation and Sampling by Auger Borings[2]

D 1605 Practices for Sampling Atmospheres for Analysis of Gases and Vapors[3]

D 1914 Practice for Conversion Units and Factors Relating to Atmospheric Analysis[3]

D 2652 Definitions of Terms Relating to Activated Carbon[4]

D 2820 Test Method for C_1 Through C_5 Hydrocarbons in the Atmosphere by Gas Chromatography[3]

D 3249 Practice for General Ambient Air Analyzer Procedures[3]

D 3416 Test Method for Total Hydrocarbons, Methane, and Carbon Monoxide (Gas Chromatographic Method) in the Atmosphere[3]

D 3584 Practice for Indexing Papers and Reports on Soil and Rock for Engineering Purposes[2]

D 3614 Guide for Laboratories Engaged in Sampling and Analysis of Atmospheres and Emissions[3]

D 3670 Guide for Determination of Precision and Bias of Methods of Committee D-22[3]

D 3686 Practice for Sampling Atmospheres to Collect Organic Compound Vapors (Activated Charcoal Tube Adsorption Method)[3]

D 3687 Practice for Analysis of Organic Compound Vapors Collected by the Activated Charcoal Tube Adsorption Method[3]

D 4220 Practices for Preserving and Transporting Soil Samples[2]

D 4490 Practice for Measuring the Concentration of Toxic Gases or Vapors Using Detector Tubes[3]

[1] This guide is under the jurisdiction of ASTM Committee D-18 on Soil and Rock and is the direct responsibility of Subcommittee D18.21 on Ground Water and Vadose Zone Investigations.

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[2] *Annual Book of ASTM Standards*, Vol 04.08.

[3] *Annual Book of ASTM Standards*, Vol 11.03.

[4] *Annual Book of ASTM Standards*, Vol 15.01.

D 4597 Practice for Sampling Workplace Atmospheres to Collect Organic Gases or Vapors with Activated Charcoal Diffusional Samplers[3]
D 4696 Guide for Pore-Liquid Sampling from the Vadose Zone[2]
D 4700 Guide for Soil Core Sampling from the Vadose Zone[2]
D 5088 Practice for the Decontamination of Field Equipment Used at Non Radioactive Waste Sites
E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods[5]
E 260 Practice for Packed Column Gas Chromatography[6]
E 355 Practice for Gas Chromatogaphy Terms and Relationships[6]
E 594 Practice for Testing Flame Ionization Detectors Used in Gas Chromatography[6]
E 697 Practice for Use of Electron-Capture Detectors in Gas Chromatography[6]

3. Terminology

3.1 *Descriptions of Terms Specific to This Standard:*

3.1.1 *capillary fringe*—the basal region of the vadose zone comprising sediments that are saturated, or nearly saturated, near the water table, gradually decreasing in water content with increasing elevation above the water table. Also see Terminology D 653.

3.1.2 *contaminant*—substances not normally found in an environment at the observed concentration.

3.1.3 *emplacement*—the establishment of contaminant residence in the vadose zone in a particular phase.

3.1.4 *free product*—liquid phase contaminants released into the environment.

3.1.5 *free vapor phase*—a condition of contaminant residence in which volatilized contaminants occur in porosity that is effective to free and open gaseous flow and exchange, such porosity generally being macroporosity.

3.1.6 *liquid phase*—contaminant residing as a liquid in vadose zone pore space, often referred to as "free product."

3.1.7 *macroporosity*—large intergranular porosity with large pore throats, including soil cracks, moldic porosity, animal burrows and other significant void space.

3.1.8 *microporosity*—intragranular porosity and microscopic intergranular porosity with submicroscopic pore throats.

3.1.9 *occluded vapor phase*—condition of contaminant residence in which volatilized contaminants occur in porosity that is ineffective to free and open gaseous flow and exchange, such porosity generally being microporosity; frequently termed dead-end pore space.

3.1.10 *partitioning*—the act of movement of contaminants from one soil residence phase to another.

3.1.11 *soil gas*—vadose zone atmosphere.

3.1.12 *solute phase*—a condition of contaminant residence in which contaminants are dissolved in ground water in either the saturated or the vadose zone.

3.1.13 *sorbed phase*—a condition of contaminant residence in which contaminants are adsorbed onto the surface of soil particles or absorbed by soil organic matter.

3.1.14 *vadose zone*—the hydrogeological region extending from the soil surface to the top of the principal water table.

4. Summary of Guide

4.1 Soil gas monitoring in the vadose zone is a method used to directly measure characteristics of the soil atmosphere that are frequently utilized as an indirect indicator of processes occurring in and below a sampling horizon. Soil gas monitoring is used as a method to suggest the presence, composition, and origin of contaminants in and below the vadose zone. Among other applications, this method is also employed in the exploration for natural resources, including petroleum, natural gas and precious metals. Soil gas monitoring is a valuable screening method for detection of volatile organic contaminants, the most abundant analytical group of ground-water contaminant compounds (1).[7]

4.2 *Basic Theoretical Principles*—The processes indicated by the soil gas monitoring method are partitioning, migration, emplacement and degradation. Partitioning represents a group of processes that control contaminant movement from one physical phase to another, these phases being liquid, free vapor (that is, through-flowing air (2)), occluded vapor (that is, locally accessible air and trapped air (2)), solute and sorbed. Migration refers to contaminant movement over distance with any vertical, horizontal or temporal component. Emplacement refers to establishment of contaminant residence in any phase within any residence opportunity. Degradation is the process whereby contaminants are attenuated by oxidation or reduction in the vadose zone, either through biogenic or abiogenic processes. Soil gas monitoring measures the result of the interaction of these processes in a dynamic equilibrium. Measurement of these processes in static equilibrium is unrealistic.

4.3 The following subsections provide detailed information on partitioning, migration, emplacement and degradation. Subsection 4.4 provides a summary procedure for soil gas sampling. Users of this guide who do not wish to study details of partitioning, migration, emplacement and degradation at this time may skip to 4.4.

4.3.1 Partitioning is the initial step by which contaminants begin to move away from their source. Partitioning occurs in water saturated and unsaturated environments. This group of processes is complex and difficult to quantify when considered in the vadose zone due to the unique makeup of the vadose matrix, i.e. air-filled porosity (microporous and macroporous), pore water, free product, solid-phase soil organic matter, clay and discrete inorganic soil particles. Important individual processes of partitioning are dissolution, volatilization, air-water partitioning, soil-water partitioning and soil-air partitioning (3).

4.3.2 Dissolution is the process whereby volatile contaminants move between the liquid phase (free product) and the solute phase (dissolved in water). At equilibrium, the product of the mole fraction of a particular compound in the liquid phase and the activity coefficient of that compound in the liquid phase is equal to the product of the mole fraction of

[5] *Annual Book of ASTM Standards*, Vol 14.02.
[6] *Annual Book of ASTM Standards*, Vol 14.01.
[7] The boldface numbers given in parentheses refer to a list of references at the end of the text.

that compound in the solute phase and the activity coefficient of that compound in the solute phase. This process is more clearly described by the following expression:

$$X^L_I \Gamma^L_I = X^W_I \Gamma^W_I \quad (1)$$

where:

X^L_I = the mole fraction of compound (I) in the liquid (L) phase (free product),

X^W_I = the mole fraction of compound (I) in the solute (W) phase (dissolved in water),

Γ^L_I = the activity coefficient of compound (I) in the liquid (L) phase (free product), and

Γ^W_I = the activity coefficient of compound (I) in the solute (W) phase (dissolved in water).

Dissolution equilibrium is therefore influenced by concentration of the subject compound in both the free product contaminant mixture and water. The most common practical application of expression Eq (1) in soil gas monitoring is in hydrocarbon detection. Simplification of Eq (1) is achieved by the following:

assume:

$$\Gamma^W_I = 1/S_I,$$

where:

S = the solubility of compound (I) in water

and:

$\Gamma^L_I = 1$, acceptable for hydrocarbons (3),

then:

$$X^W_I = X^L_I S_I \quad (2)$$

4.3.2.1 Dissolution equilibrium is impacted by the presence of liquid phase cosolvents, such as gasoline additives, at low concentrations in liquid phase mixtures. This change in dissolution equilibrium can enhance the solubility of certain liquid phase components in water beyond what is indicated by partitioning coefficient data generated in the laboratory. This can have significant impact on downstream concentrations of the contaminant(s) in the soil atmosphere.

4.3.2.2 The effects of temperature upon dissolution equilibrium are generally insignificant for aliphatic hydrocarbons between 15 and 50°C (4), the temperature range from which most soil gas samples are recovered. However, temperature effects upon dissolution equilibrium can be significant for other common families of contaminant compounds within similar temperature ranges (5). These effects must be considered when planning or interpreting the results of a soil gas survey.

4.3.2.3 Dissolution equilibrium is altered by changes in water salinity. Modest decreases in the solubility of contaminants in water are to be expected with increases in salinity of the solution.

4.3.2.4 The rate of dissolution is strongly dependent upon the partitioning coefficient of the particular contaminant of interest and the amount of mixing of the liquid phase and water (3). For example, partitioning of a particular contaminant into ground water is accelerated by frequent water level fluctuations within a contaminated capillary fringe. The downstream implications for subsequent partitioning of the contaminant from the solute to the vapor phase for eventual soil gas recovery are obvious.

4.3.3 Volatilization is the process during which volatile contaminants move between the liquid phase (free product) or solute phase and a vapor phase, either the free vapor phase or the occluded vapor phase or both. Contaminant mixtures can contain compounds with a considerable range of vapor pressures that can contribute contaminants to the soil atmosphere by volatilization. This atmosphere will exhibit a composition similar to that of the parent contaminant but lacking in those constituents with the lowest vapor pressures. The likelihood of the presence of a particular contaminant introduced into the soil atmosphere by volatilization can be estimated by considering the partial pressure of that contaminant in a vapor phase. This partial pressure is equal to the product of the mole fraction concentration of the subject component in the liquid contaminant solution, the activity coefficient of the subject component and the vapor pressure of the pure component. This concept is more clearly expressed as follows:

$$P = X_I \Gamma_I P^o \quad (3)$$

where:

P = the partial pressure of the subject contaminant compound in the vapor phase,

X_I = the mole fraction concentration of contaminant (I) in the liquid contaminant solution,

Γ_I = the activity coefficient of the subject contaminant in the liquid contaminant solution, and

P^o = the vapor pressure of the pure component.

4.3.3.1 The quantity of contaminant volatilized into a vapor phase and the rate of that process is strongly dependent upon temperature. Rate of volatilization is also controlled by the rate of transport of contaminant vapors from the liquid phase-vapor phase interface (3). This rate is probably higher when macroporous flow paths are available for vapor phase transport, and is promoted by a number of driving forces. These are concentration gradient, density gradient between soil atmosphere and contaminant-saturated soil atmosphere, convection currents related to temperature gradient, barometric pressure pumping and introduction of water onto the liquid phase-vapor phase interface.

4.3.4 Air-water partitioning is the process by which volatile contaminants move between the solute phase and a vapor phase, either the free vapor phase or the occluded vapor phase or both. For dilute solutions, air-water partitioning is controlled by Henry's Law, which states that the vapor pressure of a volatile compound above a dilute aqueous solution of that compound is equal to the product of the Henry's Law constant and the mole fraction of that compound in the aqueous solution. Henry's Law may be represented as:

$$P_I = kX_{I(aq)} \quad (4)$$

where:

P_I = vapor pressure of compound (I) above a dilute aqueous solution of (I),

k = the Henry's Law constant for compound (I) at a given temperature, and

$X_{I(aq)}$ = the mole fraction of the subject contaminant compound in the aqueous solution.

Care must be exercised in using Henry's Law to approximate contaminant vapor pressures because of unknowns related to the concentration of contaminants in solution and the contribution of other partitioning processes. Some available literature pertaining to soil gas surveying places emphasis on

Henry's Law constant at 25°C and atmospheric pressure as a primary controlling factor in determining the suitability of a particular volatile contaminant to the soil gas monitoring method. Such emphasis may be inappropriate when, for example, free product is the source of contaminant vapors or when contaminants have not reached ground water. Care must also be exercised in noting the units in which Henry's Law constants are expressed, as these vary from source to source. Volatile but very highly water soluble compounds behaving according to Henry's Law may not be detectable in soil gas because of their persistence for residence in the solute phase (6).

4.3.5 Soil-water partitioning is the process by which volatile contaminants move between the sorbed phase and the solute phase. This process is generally underestimated in its importance to the success or failure of contaminant recovery by soil gas sampling, especially when utilizing the majority of active soil gas sampling techniques generally available to field personnel.[8] There is uncertainty with respect to factors controlling soil-water partitioning, creating doubt as to the reliability of soil sorption data in most applications. Problems with soil sorption data include variability in measurement protocols, the variable nature of organic matter in soils, the effect of dissolved organic matter, unusual pH effects and the effect of salinity, among others (3).

4.3.5.1 The contribution of soil-water partitioning to contaminant phase residence equilibria is strongly controlled by sorbed contaminant concentration in soil, soil makeup, vadose zone pore water content, and soil porosity configuration. Important variables in soil makeup are the quantity, type and distribution of clay in soil and the quantity, type and distribution of soil organic matter. These variables impact the surface area available to sorptive processes, that is, the storage capacity of the soil for contaminants in the sorbed phase, and the pH of the sorption environment. Variations in vadose zone pore water content directly affect the storage capacity of the soil for contaminants in the solute phase. Soil porosity configuration, principally microporosity versus macroporosity, is critical to the rate of soil-water partitioning due to the contrast in surface area between micropores and macropores and the related storage capacity of this porosity for both pore water and sorbed contaminants.

4.3.6 Soil-air partitioning is the process by which volatile contaminants move between the sorbed phase and a vapor phase, either the free vapor phase or the occluded vapor phase or both. Like soil-water partitioning, this process is underestimated in its importance to the recoverability of contaminants by many soil gas sampling techniques. In vadose zone horizons with very low pore water contents, soil-air partitioning can yield vapor phase contaminant composition that differs from free product composition. In vadose zone horizons with higher pore water content, the responsibility for this compositional inconsistency is shared, largely with soil-water partitioning. In wet soil conditions, threshold soil water content values exist for trapped soil atmosphere content to become significant (7), suggesting that responsibility for this compositional inconsistency can b largely attributed to occluded phase residence. Additiona important variables are soil clay content, type and distribu tion, and soil organic matter content, type and distribution Studies have demonstrated significant impact of soil organi matter and clay content on volatile organic compoun emissions from soils (8). Due to the strong control on vapo phase contaminant content by the soil-air partitioning pro cess, it is unreasonable to expect soil contaminants with high affinity for sorption to be efficiently recovered by most soi gas sampling techniques.

4.4 Migration of contaminants in the vadose zone, that is unsaturated flow, is highly complex and is controlled by soi characteristics, contaminant composition and contaminan phase (9). Migration through unsaturated matrix can occu through a variety of diffusion, dispersion and mass transpor mechanisms which behave in a manner unique to saturate flow.

4.4.1 A major division in migratory behavior of contami nants is defined by their solubility or immiscibility in wate Contaminants are often introduced into the soil as liqui mixtures, the components of which immediately begin t partition into other phases upon soil entry. Contaminant that establish soil residence behind a migratory front chang in composition with distance from their point of entry. A contaminant migration continues, pathways for individua components can become divergent, such that the composi tion of the liquid mixture continues to change as migratio proceeds. Eventually, migration of liquid mixtures ma reach ground water. This can be retarded if the contaminant partition into other phases before reaching ground water an if contaminant vapor is less dense than the uncontaminate soil atmosphere. Transport of contaminants by downwar percolation of meteoric waters and upward movement o ground water accelerate the contact of contaminants wit ground water. When these contaminants do reach groun water, a radically different set of migration mechanism begins to govern contaminant transport via saturated flow Further divergence of contaminant pathways is dependen upon the tendency of each component of the contaminan mixture to float on ground water, become dissolved i ground water or sink to an impermeable layer within th aquifer. Detailed descriptions of these phenomena are avail able in the literature (10).

4.4.2 The impact of migration processes on soil gas measurement is significant. Although it is impractical to estimate actual migration mechanisms by modelling prior to most soil gas monitoring efforts, a rudimentary knowledge of site characteristics can guide investigators to realistic inter pretations of soil gas data expressing unusual or highly variable compositions. More thorough knowledge of relevant site characteristics, such as the presence or absence of barriers to vertical or horizontal migration, that is, founda tions, buried pavement, or perched ground water, as well as preferential pathways for contaminant migration, that is backfill rubble, utility vaults, storm sewers or soil cracks, can assist investigators to assess the migration impact on soil gas survey design.

4.5 The vadose zone is a highly complex soil-air-water-hydrocarbon system with abundant opportunity to store contaminants in all phases. Contaminants partition ac

[8] See 6.2 for a discussion of active soil gas sampling techniques.

cording to their physical properties and the residence opportunity presented to them along their migratory path. This process has been described as an in-situ chromatographic-like separation of contaminants (11). Emplacement, or the establishment of contaminant residence, is a highly dynamic process. Contaminants move from one phase to another as changes occur in both chemical and physical equilibria. Important changes impacting phase residence change include temporal variations in moisture content, soil temperature and level of microbial activity.

4.5.1 One interesting example of disruption in equilibrium conditions is the act of sampling soil gas. Many soil gas sampling systems rely on large volume recovery of soil gas to provide a sample that is believed to be representative of the soil atmosphere in situ. Movement of this soil gas by convective flow through unsaturated soils can cause upward changes in vapor phase contaminant concentration at the expense of other phases.

4.5.2 In natural systems, temporal increases in soil moisture cause gradual increases in solute phase emplacement at the expense of other phases. It is unrealistic to attempt to characterize a static soil gas equilibrium in the vadose zone because this equilibrium is never achieved. For this reason, soil gas data sets based on specific contaminant concentrations and generated at different times are usually not comparable for the absolute values generated by each temporal sampling event. Qualitative comparison of data generated by the same soil gas method and performed at different times is permissible. Generation of a single data set by reconnaissance soil gas sampling and subsequent infilling of data to form a single data set is strongly discouraged.

4.5.3 Attempts to compensate for temporal variations in phase equilibria have been attempted by collecting samples that approximate replicates at known locations and adjusting succeeding data up or down to compensate for observed changes. This procedure is also strongly discouraged, because the number of variables affecting observed changes are too great. Moreover, the ability or willingness of most investigators to determine the most significant effects upon phase equilibria is insufficient to be of use.

4.5.4 Data sets generated by different soil gas sampling techniques may not be comparable as a direct result of differences in efficiency of recovery of contaminants from specific phases. Not only can these data sets differ in measured contaminant concentration, but they can vary substantially in composition as well.

4.6 Degradation of contaminants occurs in the vadose zone through oxidation or reduction reactions that can be biogenic or abiogenic in nature. This process can occur both aerobically and anaerobically to mitigate contaminant levels. Degradation is most often recognized in shallow, permeable soils where favorable conditions exist for oxidation of labile compounds, however other vadose environments can be conducive to degradation. Specific environmental conditions are required for degradation processes to occur. For abiogenic degradation, redox potential and soil pH can be rate controlling factors. For biodegradation, necessary environmental conditions include the presence of microorganisms capable of adaptation to the contaminant as substrate, conditions favorable to population increases of these microorganisms and migration pathways for contaminants to come in contact with these microorganisms. Most soils contain naturally occurring populations of various microorganisms that can degrade petroleum products (12). Contaminant biodegradation is known to occur in groundwater (13) and in soils (14) prior to contaminant partitioning into a vapor phase. Contaminant biodegradation rates for some compounds are highly variable and are controlled by a number of kinetic factors influencing the distribution of microorganisms responsible for degradation. These include aerobic versus anaerobic environments, contaminant type and temperature (15, 16).

4.6.1 Degradation rate can approach, equal or periodically exceed the rate of contaminant emplacement into the vadose zone, such that contaminants are not detectable by soil gas monitoring. This mechanism can result in soil gas data which are not representative of an underlying contaminated condition (17).

4.6.2 Labile contaminants can be degraded to compounds that may or may not be detectable in soil gas. Aerobic degradation can produce carbon dioxide which can be monitored as an indirect indicator of the presence of contaminants (18), or organic acids and phenols (13) that are not routinely detectable in active whole air soil gas samples. In alternative to whole air methods, use of an appropriate adsorption medium may facilitate recovery of such compounds for analysis by desorption and gas chromatography-mass spectroscopy. Anaerobic degradation can produce compounds including methane, ethylene, propylene, acetylene, and vinyl chloride which also can be monitored as an indirect indicator of the presence of contaminants. Caution must be used in attributing elevated levels of these compounds to biodegradation, because competitive processes can confuse the interpretation of absolute concentration values and potential sources.

4.6.3 Biodegradation of contaminants in the vadose zone can proceed naturally by adaptation of indigenous microbial populations to metabolize contaminants as primary substrate, or by introduction of foreign populations which have been preconditioned to metabolize contaminants of interest. Case histories demonstrate the absence of certain compounds in soil gas contaminant suites for which biodegradation has been named as the responsible process (17, 19, 20). Such cases address the attenuation or complete absence of simple aromatic hydrocarbons, some of which are halogenated, in soil gas. This phenomenon may be controlled by the availability of oxygen as has been demonstrated in the laboratory (13). Other compound classes can exhibit similar effects.

4.6.4 Other processes may share responsibility for the actual or apparent absence or attenuation of some contaminants in soil gas sample sets. In some cases where attenuation of contaminant concentration is attributed to degradation, combinations of high soil clay, organic matter and pore water content can reduce the recovery efficiency of certain soil gas sampling techniques for certain contaminants such that contaminant concentrations fall below detection limits. Care must be exercised in attributing a lack of contaminants in soil gas samples to degradation.

4.7 *Summary Procedure for Soil Gas Sampling*—Vadose zone monitoring methods have a set of procedures, both general and specific, that must be consistently followed in

order to provide maximum data quality and usefulness. Soil gas monitoring is no exception, with six primary procedures common to all soil gas monitoring techniques. The procedures are a planning and preparation step including definition of data quality objectives, the act of sampling soil gas in the field, handling and transporting the sample, sample analysis, interpretation of the results of analysis, and preparation of a report of findings.

4.7.1 The planning and preparation step begins with the formulation of project objectives, including purpose of the survey, appropriate application of the data to be collected and data quality objectives.

4.7.2 Data can vary in quality due to sampling methodology, sample preparation, analytical procedures, laboratory quality control, and available documentation. Quality assurance programs include all of the activities necessary to provide measurement data at a requisite precision and bias (see Practice 1357). Quality assurance objectives for soil gas monitoring are similar to those for atmospheric air monitoring. The overall quality assurance objective for measurement data is to ensure that data of known and acceptable quality are provided. In order to meet these objectives, data quality objectives should be defined for data measurements in support of the soil gas data interpretation. These are comparability, completeness, representativeness, bias and precision. The comparability of the data collected refers to the ability to interpret the results in light of previous data collection efforts. Completeness refers to the number of samples collected and analyzed compared to the planned number of samples. Representativeness is a measure of the degree to which analytical results reflect true field conditions. Field contamination and sampling intensity are two factors affecting representativeness. Bias is a generic concept of exactness related to the closeness of agreement between the average of one or more test results and an accepted reference value (see Practice E 177). The precision of a measurement process is a generic concept related to the closeness of agreement between test results obtained under prescribed like conditions from the measurement process being evaluated. Overall precision and bias targets for chemical contaminant measurements can be set at 10 % allowable deviation with 90 % confidence limits. In all of these quality assurance activities one must take into consideration that factors including geophysical conditions and definition of sampling volume in the vadose zone often have higher variability than analytical equipment calibration procedures.

4.7.3 Table 1 provides suggested quantitative limits for data quality objectives.

4.7.4 The planning and preparation step continues with the evaluation of available information already gathered for the project area. These efforts culminate in the selection of an appropriate soil gas monitoring method and a survey design which best fits the project objectives within budgetary constraints. Prior to actual field work, investigators must obtain the necessary permits and landowner permission for property access. When a survey area is pending sale, investigators should obtain written permission to conduct the survey from both the buyer and the seller. Moreover, when a soil gas survey is being performed as a service, no work should proceed on the survey without a fully executed consulting agreement between the investigator and the client for whom the survey is being conducted.

TABLE 1 Suggested Quantitative Limits for Data Quality Objectives

QA/QC Objective	Measure	Formula	Limit
Accuracy	Laboratory standard	Standard recovery	90 to 110 %
Precision	Field replicate	Relative standard deviation	< 20 %
	Laboratory replicate	Relative standard deviation	< 20 %
Representativeness	Air blank	Bias	< 10 %
	Cross contam. blank	Bias	< 10 %
Completeness	Completion (%)	Relative compl.	> 90 %
Comparability	Prof. judgment	NA	NA

4.7.5 Actual field work consists of recovery of soil gas samples. The method selected should be based upon site specific factors and dictated by the project objectives. A detailed discussion of soil gas sampling methods is provided in 6.1.

4.7.6 As samples are being recovered, they must be handled and transported in such a way as to assure preservation prior to analysis. A detailed discussion of sampling and transport is located in 6.5.

4.7.7 The presence of contaminants is determined through analysis of the soil gas samples. This step is controlled to a large degree by the QA/QC objectives of the survey. A discussion of sample analysis is provided as 6.6.

4.7.8 Data interpretation is largely an iterative process of review of the raw soil gas data out of context, a review of the soil gas data in context of other site characteristics and the formulation of conclusions based upon all known information. A discussion of soil gas data interpretation is located in 6.7.

4.7.9 Finally, a report of findings is generated in a format that is selected to be appropriate to the requirements of the end users. Section 7 provides options that can be addressed in reporting as well as recommendations of topics that should be included in all soil gas summations.

5. Significance and Use

5.1 *Application of Soil Gas Monitoring*—Soil gas monitoring is an extremely versatile method in that it can be adapted to conform to the requirements of dissimilar industries for a wide variety of applications. A number of soil gas techniques have been utilized in the agricultural (21), petroleum (22, 23) and minerals (24) industries. Certain applications have been exercised for well over 50 years. Soil gas monitoring has been utilized in research efforts, including the monitoring of underground coal gasification retorts (25). Application to the environmental industry is comparably recent but very effective as a rapid and relatively inexpensive method of detecting volatile contaminants in the vadose zone. Field screening, of which soil gas monitoring is a basic component, has been demonstrated to be effective for selection of suitable and representative samples for other more costly and definitive monitoring methods (26). Soil gas monitoring is useful to assess the extent of ground water contamination for certain contaminants and field environments (27). Soil gas monitoring is also a viable method of monitoring subsurface contaminant discharges from underground storage tanks (28). New applications of the soil gas

monitoring are periodically developed and published in the referenced literature. The method may be useful in the study of unsaturated flow. In most instances, the method can make use of very light-weight, portable and inexpensive tools made from commonly available materials. Soil gas monitoring has become a widely accepted method for locating subsequent environmental monitoring and remediation activities such as ground water monitoring wells, contaminant product recovery wells or excavations to recover contaminated soil. Soil gas monitoring has made a significant contribution to ground water monitoring and remedial planning on sites that fall under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (29). This method is highly useful at the initiation of Phase II environmental assessment action in determining the presence of volatile organic contamination of real property in a pending sale.

5.1.1 In any application, soil gas monitoring can be performed over a wide range of both spatial and temporal designs. Spatial designs include soil gas sampling in profiles or grid patterns at a single depth or multiple depths. Multiple depth sampling is particularly useful for contaminant determinations in cases with complex soil type distribution and multiple sources. Depth profiling can also be useful in the determination of the most appropriate depth(s) at which to monitor soil gas, as well as the demonstration of migration and degradation processes in the vadose zone. Temporal designs include the long-term monitoring of the vadose zone for the appearance of volatile organic contaminants from known potential sources such as underground storage tanks and solid waste landfills. Temporal designs are especially useful in monitoring the effectiveness of contaminant remediation efforts.

5.1.2 Soil gas monitoring in the vadose zone is an ideal reconnaissance tool and screening technique in most applications. However, site specific and contaminant specific limitations can cause this technique to be unsuccessful in meeting project objectives. Caveats exist in all soil gas monitoring procedures that can frustrate efforts to successfully apply the method to any application.

5.2 *Limitations*—The most significant limitation on soil gas monitoring is the inability to utilize the method as a stand alone technique. Soil gas monitoring does not provide repeatable quantitative information over time due primarily to the dynamic nature of phase equilibria in the vadose zone and secondarily to unavoidable inconsistencies in sampling practice. As a result of geologic variability in the vadose zone and the multitude of unique sampling devices currently being used in the field, quality assurance and quality control protocol, discussed in 6.4, cannot provide the rigor required as in a test method. For these reasons, soil gas data in itself cannot be used to provide definitive answers about the location or absence of buried contaminants. Moreover, the success of any soil gas monitoring method is strongly dependent upon effects related to geologic variation and moisture content in the sampling horizon as well as the physical properties of the target contaminants.

5.2.1 False negative results can occur as a direct result of the incompatibility of a specific procedure with the properties of the sampling horizon or the target contaminants, or both. Soil gas data cannot be used to establish bulk volume or the commerciality of buried petroleum, natural gas, or ore bodies.

5.2.2 With the necessary analytical procedures, soil gas can be examined for compositional anomalies, a very useful technique for multiple source problems. In some instances, contaminant occurrences are limited to single species (compounds, mercury, etc.), however more often than not the contaminant source is a mixture of organic chemicals that have a unique chemical compositional character consisting of both normally evaluated priority pollutants and non-priority pollutant chemicals that may be overlooked. By identifying and using compositional information, many problematic site situations such as degradation can be minimized by targeting the more refractory compounds associated with the contaminant occurrence. This interpretive method is impossible to model for an industry wide application due to variation in methods and technique.

5.2.3 A basic limitation of the technique is that due to the ease of procurement and use of soil gas sampling devices, there is a tendency for inexperienced personnel to oversimplify any and all aspects of the method. Investigators must consider the experience level and technical ability of personnel who acquire soil gas samples and attempt to interpret the results. Certain procedural facets are not trivial, as discussed in Section 6. The results of certain techniques tend to be affected by minor variations in procedure despite apparent adherence to a "Standard Operating Procedure."

5.2.4 Atmospheric air contamination is not a trivial problem corrected by simple device-oriented field practice. Many sampling systems recover very large volumes of "soil gas" that may actually represent a mixture of soil gas and atmospheric air. This mixing occurs through the introduction of ambient air adjacent to the sampling device and through macroporous pathways in the soil which are far from the sampling device. Some environmental investigators avoid the impact of this problem by reasoning that contaminant quantities in the soil are so great that they are detected despite atmospheric mixing. For qualitative approaches with non-rigorous quality assurance/quality control (QA/QC) objectives this mixing problem can be insignificant. For detection of compounds that exhibit only marginal partitioning preference for the free vapor phase, the mixing problem can be a fatal flaw in procedure. Moreover, contaminant concentration and composition investigations can be rendered useless by variations in the magnitude of mixing at various sample locations and depths in a survey area.

5.3 *Comments on Limitations of Soil Gas Monitoring*—Many investigators believe that soil gas monitoring is not an effective vadose zone monitoring method for certain volatile organic applications, in certain geographic regions or during certain seasons of the year, or both. The applicability of soil gas monitoring is controlled by physical and chemical properties and processes in the subsurface and not by factors that are obvious at or above the surface. For example, one common misconception is that soil gas monitoring is not effective during the winter season. The impacts upon soil gas measurement of elevated soil pore water content, reduced vadose zone temperature and the presence of frost, typical of numerous regions in winter, are obvious for many facets of most soil gas monitoring methods. Modification of standard operating procedure, such as an increase in sampling depth,

or selection of another soil gas monitoring method altogether can minimize the negative impacts of seasonal field conditions. It is important to understand that the responsibility for success or failure in soil gas monitoring can reside as much in the planning phase of a survey, including the method chosen, as in factors controlling the chemical and physical processes at work in the subsurface. Even with apparently ideal field conditions and with a carefully planned survey, soil gas monitoring can succeed or fail due to unknown factors controlling contaminant migration and emplacement. Soil gas monitoring is no different than any other measurement method, in that investigators must maximize effort in planning and implementation of procedure to maximize the likelihood of success.

6. Approach

6.1 *Sampling Methodology*—Soil gas sampling methodology has evolved over time and through practice in several industries. The equipment with which to perform this monitoring technique is highly varied, although it may be categorized into basic types (see 6.2.2). The literature provides numerous discussions about the design of some of this equipment (**10, 30, 31, 32, 33**). The selection of a soil gas sampling method involves consideration of three primary issues. These are the type of sampling system, the methodology of application of that sampling system and the rigor of the field QA/QC protocol. Each of these issues is discussed in this guide, however, no single method or procedure is recommended to the reader due to the variation in site specific factors. As many as one hundred unique soil gas sampling systems exist that arise from variations or combinations, or both, of the many facets described in this guide. Some systems are highly versatile for numerous applications. Others are functional for more limited or specific applications. Informed investigators must assume the responsibility of selecting the technique most appropriate to the subject application, whether that technique is commercially available from contractors or equipment suppliers, or reliant upon the ingenuity of the investigator in the field utilizing commonly available materials. Success in choosing an appropriate sampling device or an entire sampling system is dependent upon the investigator's level of understanding of vadose zone processes, contaminant properties and appropriate applicability of the soil gas method.

6.1.1 The application of any of these methods must be controlled by strict adherence to a standard operating procedure. Occasional deviations as dictated by unusual field conditions should be recorded in the project field notebook. Inadvertent minor deviations in field procedure can result in misinterpretation of the data acquired.

6.2 *Sampling Systems*—Six basic sampling systems exist. These are based upon the collection of soil gas by a whole-air or sorbent method in an active or passive approach, or upon the principle of collection of a soil or water sample for subsequent sampling of a contained headspace atmosphere. Contained atmosphere methods do not yield samples representative of in situ vadose zone atmospheres.

6.2.1 Whole-air methods sample the soil atmosphere as a mixture of gases, including contaminant and non-contaminant vapors. Sorbent methods sample contaminants adsorbed onto a collection medium exposed to a whole-air sample stream. Active methods are those that obtain a soil gas sample by positioning a sampling device in the subsurface and the withdrawal of soil atmosphere through the device from the sampling horizon. Passive methods are those that obtain a soil gas sample by placing a collection device in the soil or on the soil surface, and allowing the atmosphere within the device to come into compositional equilibrium with the soil atmosphere. Four of the six basic sampling systems arise from these approaches, namely the whole air-active approach, the sorbed contaminants-active approach, the whole air-passive approach, and the sorbed contaminants-passive approach. Two additional systems exist that are based respectively upon the collection of a soil or water sample for subsequent sampling of a small volume headspace atmosphere.

6.2.2 *Whole Air-Active Approach*—This method of soil gas sample collection involves the forced movement of bulk soil atmosphere from the sampling horizon to a collection or contaminant device through a probe or other similar apparatus (**10, 34**). Contained samples of soil atmosphere are then transported to a laboratory for analysis, or the sampling device is directly coupled to an analytical system. Whole air-active sampling is best suited to soil gas monitoring efforts where contaminant concentrations are expected to be high and the vadose zone is highly permeable to vapor. Probes exist that must utilize pre-existing holes or that can penetrate the vadose zone by driven means. These devices can be very simple and light-weight for low cost mobilization (**35**), or they can be affixed to vehicle mounted drills or hammers useful for larger, more complex surveys at a higher cost of mobilization. The whole air-active technique can be combined with other monitoring methods such as soil monitoring for engineering purposes (**36**) in some survey environments. The success of this practice can be highly site-specific.

6.2.2.1 Ground probes can be of small to large internal volume. The development of sampling devices with smaller internal volumes equating to smaller purge volumes is a significant improvement, providing samples which are more representative of soil atmosphere, and a greater ease of equipment decontamination between usages. Sample size can vary from a few millilitres to many tens of litres depending upon the sample rate through the probe, the vapor storage capacity of the soil and the ability of the soil to deliver vapor to a probe under vacuum.

6.2.2.2 The success of the active approach is strongly dependent upon soil clay, organic matter and moisture content. Driven probes tend to destroy natural soil permeability around the body of the probe due to soil compaction concurrent with insertion. This can be a severe limitation in moist, heavy clay soils. In very dry, cemented soils, driven probes can create radial fractures that can enhance soil permeability to vapor concurrent with insertion. These fractures can communicate atmospheric air with soil atmosphere, a limiting factor for obtaining representative, large-volume soil gas samples. The effect can be so severe as to lower recovered contaminant concentrations in the soil gas sample below the limits of analytical detection. This is especially true for highly sorptive or water soluble compounds, or both. Some investigators have attributed the poor

recoveries of these compounds exclusively to other processes, that is, degradation (21, 37).

6.2.2.3 Methods requiring a pre-existing hole for probe insertion (38) made with a commercially available "slam bar" can provide supportable contaminant data where contaminant concentrations and soil permeability to vapor are high, however the act of making a hole with a "slam bar" and subsequent removal of the "slam bar" can encourage soil contaminant venting and lower sample representativeness. Insertion of the sampling probe into this hole further degrades representativeness by additional venting of contaminants as the probe displaces the atmosphere in the hole upon insertion. Purging of the probe prior to sampling under conditions of low soil permeability and low contaminant concentration may lower contaminant levels below the limits of analytical detection. Methods requiring a pre-existing hole for probe insertion are not recommended for soil gas sampling from soils with high clay and moisture contents.

6.2.2.4 Excellent discussions of numerous whole air-active sampling systems may be found in the literature (10, 21, 37, 39). Investigators must consider the caveats and limitations of the whole air-active approach when selecting a certain method for a specific application.

6.2.3 *Sorbed Contaminants-Active Approach*—The sorbed contaminants-active method of soil gas sample collection also involves the forced movement of bulk soil atmosphere from the sampling horizon through a probe or other similar apparatus, but to a collection device designed to extract and trap sample stream contaminants by adsorption (40, 41). This system is well suited to sites where the soil may be highly permeable to vapor and where the contaminant concentration may be lower than required for successful whole-air surveys. Sorbent devices are designed to concentrate the components of interest and remove some of the soil gas components known to interfere with sample analysis.

6.2.3.1 Contaminant trapping is accomplished by use of an adsorbent collection medium such as charcoal or a carbonized molecular sieve adsorbent (43, 44), as well as porous polymers, silica gel and activated alumina (10). This approach is especially amenable to the detection of nonpolar volatile organic compounds. Organic compounds that are reactive, oxygenated or are gaseous at room temperature are either not adsorbed by or are not efficiently desorbed (42) from charcoal. Sorbent collection devices are commercially available or can be specially prepared with an appropriate sorbent material that concentrates desired compounds for future analysis. Colorimetric detector tubes are available which will provide an indication of the presence of target compounds at the time of sampling. These devices are limited in application by the high concentration requirements for many compounds and the compound-specific nature of these tubes.

6.2.3.2 The effectiveness of the sorbed contaminants-active approach can be limited by high vadose zone clay and water content, reducing the ability of the soil to transmit vapor through the sorbent trap. Commercially available sorbent traps come with information suggesting maximum, minimum and optimum sampling rate through the trap. Soil characteristics can limit flow rate to a point below the minimum recommended rate, affecting the performance of the trap and the reproducibility of adjacent samples. Interaction of the sorption media with target compounds during desorption in the laboratory can form artifacts, restricting the interpretive value of the data. Some sorption media are prone to irreversible adsorption (see Definitions D 2652). Some may be affected by high soil gas relative humidity. Humidity greater than 60 % (very common for soil gas) can reduce the adsorptive capacity of activated charcoal to 50 % for some chemicals. Presence of condensed water in the sample tube will indicate a suspect sample (see Practice D 3686). Anticipation of these problems is recommended for all sorbent techniques, and a thorough quality control plan should be designed and implemented as is discussed in 6.4 of this guide.

6.2.3.3 Special sample preparation is required for samples adsorbed onto a trapping medium. This preparation step consists of the thermal or solvent desorption of the contaminants from the trapping medium. Proper practice will promote needed accuracy and precision in the determination of contaminant concentrations above specified values (see Practice D 3687).

6.2.4 *Whole Air-Passive Approach*—This method of soil gas sample collection involves the entry of bulk soil atmosphere or soil atmosphere components from a near-surface sampling horizon to a collection or containment device through a flux chamber or other similar apparatus (30). Enclosure devices sample vaporous emissions from a known soil surface area capped by a chamber. The volume of the chamber is continuously swept by injection of a gas of known composition, and the resultant carrier gas-contaminant mixture is collected for analysis. The rate of emission or "flux" of contaminants can be calculated if flow rate of injected gas and contaminant concentration in the sample are determined.

6.2.4.1 The whole air-passive approach is useful to some very specific applications. This method may be used, for example, to monitor contaminant emissions from soil or water to assess the health hazard risk of such emissions to the general public. Determination of the extent of contamination by volatile organic compounds has been performed with whole air-passive devices, however the application of other types of systems is far more common.

6.2.4.2 A key to successful operation of a whole air-passive system is that the system is able to recover volatile compounds as they are emitted from the vadose zone. The effects of changes in barometric pressure, soil temperature and soil moisture content are not quantifiable from site to site due to site specific variables controlling vapor phase contaminant migration and the rate of contaminant partitioning into the vapor phase. The presence of contaminants or naturally occurring organic matter floating on surface water may impact the rate of entry of certain vapor phase contaminants into the chamber.

6.2.4.3 The whole air-passive method is limited in application primarily due to the great degree of dilution of contaminants in the sample stream by injected gas. This can decrease method sensitivity by lowering contaminant concentrations to levels below the detection limits of the analysis method chosen. Further decrease in method sensitivity results from the fact that soil gas contaminant concentrations are generally lower at the surface than even at nominal depths. Soil characteristics such as high water saturation, soil

cements, clay content and organic matter content will negatively impact results of these systems by restricting the rate of contaminant flux to the chamber.

6.2.4.4 Additional limitations exist. Certain devices limit flux rates into the chamber due to aspects of design. Soil macroporosity such as desiccation cracks extending beyond the collecting device will vent soil vapors to the atmosphere that will not be collected by flux chambers unless monitoring locations are biased to include these features.

6.2.5 *Sorbed Contaminants-Passive Approach*—This method of soil gas sample collection involves the passive movement of contaminants in soil to a sorbent collection device over time. Passive samplers that have been applied to sampling soil gases of environmental concern include occupational health volatile organic compound monitors (**44**) and a sampler originally developed for detecting the presence of hydrocarbons in petroleum exploration (**33, 46**). Both devices use charcoal as a sorbent; the former as a flat film and the latter coated on a wire. Passive samplers are housed in containers up to several inches in diameter, depending upon the design. They are placed open end down in holes that are usually less than 5 ft (1.5 m) deep, that are then backfilled (**32**). These monitors are generally left in place from two to ten days, although certain passive collectors can be left in place for a period of 30 days or more for certain applications. For at least one device, exposure efficiency can be determined.

6.2.5.1 The sorbed contaminants-passive approach can be employed in a wide range of geological conditions. Frozen ground and high water saturation may not limit the ability of the monitors to collect contaminants (**46**), although the composition of the contaminant suite may be impacted by related alterations in partitioning equilibria.

6.2.5.2 The sorbed contaminants-passive approach depends upon the ability of contaminants to move through the vadose zone to the passive collection device. Numerous adsorption media can be used to collect contaminants (see 6.2.4). The principle of passive-sorbent monitors relies on adsorbent reduction of the equilibrium concentration of contaminants around the monitor over time, therefore creating a concentration sink, that is, a continuous state of disequilibrium, in the vicinity of the monitor. This can encourage continued migration of contaminants toward the monitor when conditions for contaminant partitioning into the vapor phase are favorable. Migration of contaminants in the vadose zone toward a passive-sorbent device is strongly controlled by vadose zone character and the chemical and physical properties of the subject contaminants. Contaminants may move from a few feet to thousands of feet, or not at all.

6.2.5.3 Many investigators attribute the principle mechanism of contaminant migration to a passive-sorbent device to diffusion, that is, the movement of organic vapor or gas molecules from a region of high concentration to a region of low concentration as described by Fick's law (see Practice D 4597). Fick's law of diffusion states that for a constant concentration gradient, the mass of material transferred to the sampling layer can be expressed as:

$$M = \{DA(C - C_o)t\}/L \quad (5)$$

where:

M = mass of the material, ng,
D = diffusion coefficient, cm^2/min,
A = cross sectional area of diffusion cavitie(s), cm^2,
L = length of diffusion path, cm,
C = concentration at face of sampler, ng/cm^3,
C_o = concentration at adsorbing layer surface, ng/cm^3, and
t = exposure time, min.

6.2.5.4 The cross sectional area of a diffusion cavity, the length of the diffusion path and the quantity $(C - C_o)$ are impossible to accurately measure for soil gas contaminants interacting with a passive-sorbent sampler. There is some debate as to whether passive samplers measure flux or total contaminant concentration (**32**) in the vicinity of the trap. Due to the fact that the mass of the material transferred to the sampler by diffusion, a key measurement, cannot be determined, the debate will no doubt continue. It is reasonable to assume that a combination of processes is responsible for contaminant migration to sorbent traps, including diffusion, dispersion and mass transfer. All migration processes are impacted by partitioning equilibria.

6.2.5.5 Ambient air represents an atmospheric contaminant concentration sink that encourages a strong vertical vector of contaminant migration. This prevailing upward movement of contaminants from sources at depth results in contaminant concentration gradients throughout the vadose zone. The sorbed contaminants-passive method makes use of this contaminant flux (see 6.2.4) to collect long-term, nondisruptive samples of volatile contaminants. The method can collect contaminants which are compositionally representative of the contaminant mixture favoring the vapor phase. The quantity of volatile organic compounds trapped by these devices is proportional to the concentration gradients of contaminants present near the collection device and the affinity of the contaminant(s) for the collection medium.

6.2.5.6 As with active sampling protocols, specific issues exist affecting the function and calibration of passive monitors. Soil gas, even in the drier climates, will be at a relatively high humidity condition. This humidity can affect the collection efficiency of the adsorbent media. In soils of low permeability, contaminants commonly move very slowly. This can create a condition of near-zero contaminant concentration in the soils immediately adjacent to the monitor if the sorptive potential of the monitor is higher than that of the soil. When soil contaminant concentrations are rapidly depleted, that is, as the result of invasion of the sampling horizon by meteoric water, the passive monitor can source contaminants back to the soil.

6.2.5.7 The sorbed contaminant-passive approach to soil gas monitoring is not immune to the migration, emplacement and degradation factors affecting all soil gas monitoring techniques. It is not possible to measure the efficiency of passive-sorbent monitoring devices because the bulk volume of soil gas affected by the sorbent trap cannot be measured. Care must be taken not to contaminate the sorbent samples during installation or by backfilling with contaminated soil. Such care is comparable to potential problems for any measurement method in which a contaminated layer is penetrated.

6.2.6 *Soil Sampling for Subsequent Headspace Atmosphere or Extraction Sampling*—This method examines contaminants that are present in a headspace atmosphere

above a contained soil sample. Note well that this headspace atmosphere is not true soil gas (see 3.1.11), but is an artificial atmosphere formed above a potential contaminant source, that is, the soil sample. Contained atmosphere methods do not yield samples representative of in situ vadose zone atmospheres. Headspace atmospheres differ from in situ vadose zone atmospheres in that large percentages of vapor phase and moderate percentages of solute and sorbed phase contaminants can be lost in the act of soil sampling. This method is not generally recommended for a broad spectrum of cases due to numerous limitations and caveats. In comparison to other methods described in this guide, soil sampling for subsequent headspace atmosphere or extraction sampling can be a relatively poor method for determining many of the more volatile contaminants. Headspace atmospheres contain residual sorbed and solute phase contaminants that have partitioned to the vapor phase in the contained environment; most headspace approaches are reasonably efficient in recovery of some fraction of sorbed and solute phase contaminants. Contaminants in these phases in situ are recovered from a headspace after they have partitioned into the vapor phase. Recovery efficiency of contaminants in the vapor phase in situ ranges from moderate to poor.

6.2.6.1 Important criteria exist to consider when selecting a device that will provide suitable samples (see Guide D 4700). The equipment required is simple and readily available. Some commonly used augers are not suitable for soil sampling in support of subsequent headspace atmosphere sampling due to soil disturbance. Depths of auger investigations are limited by ground water conditions, soil characteristics and the equipment used (see Practice D 1452). Suitable procedures for some methods are described in the literature (47, 48). Current soil preservation practice may not apply (see Practice D 4220).

6.2.6.2 Limitations and special procedures exist for the application of soil sampling for subsequent headspace gas analysis. Filling head space with solvent can support a subsequent solvent extraction procedure. Some investigators minimize the effects of devolatilization by rapidly recovering small soil core plugs with polypropylene syringes which have been modified to accommodate recovery of soil plugs. Investigators also attempt to maximize partitioning of contaminants into the vapor phase by adding buffering solutions or sodium sulphate and phosphoric acid to the vial prior to sealing, in order to shift the activity coefficients of the subject contaminants to favor the vapor phase. Aqueous suspensions of solvent slurries of soil can be ineffective for the determination of high molecular weight labile compounds. Their persistence in soil is the result of physical entrapment in soil microporosity (49). Recovery efficiency of contaminants in soil headspace can be greatly enhanced by pulverization of the soil (50) in a ball mill or other similar apparatus. The method is biased toward recovery of contaminants in the sorbed, solute and occluded phases in situ due to the loss of pore space gas in preference to contaminants adsorbed onto the soil particles or trapped in soil micropores. Contaminant degradation, especially biodegradation, in the container is encouraged by the creation of an aerobic, moist environment during sample handling and transport prior to analysis. However, a simple method to minimize the effects of biodegradation can be achieved by storing samples, when necessary, at approximately 4°C in the dark.

6.2.6.3 Acid extraction of volatile organic compounds is widely used in geochemical exploration for petroleum and natural gas. Soil samples are placed in a closed vessel, heated and evacuated to remove vapor phase contaminants. The addition of acid to the evacuated chamber causes release of hydrocarbons believed to be bound to the soils by carbonates (22). Hydrocarbons are determined by analysis of resulting vessel atmospheres. Refinements to this method have been developed (48), however the method is designed not to determine compounds in the vapor, sorbed, or solute phases. Method sensitivity is therefore greatly reduced.

6.2.7 *Soil Pore Liquid Headspace Gas Approach*—In the vadose zone, soil gas monitoring can be accomplished in combination with soil pore liquid sampling through the use of a suction lysimeter, a pan lysimeter or a free drainage glass block sampler. The suction lysimeter installed in the vadose zone is most commonly employed for this purpose. Temporally designed surveys are ideally suited to this method.

6.2.7.1 After a lysimeter has been installed for some period of time, initial aliquots of vapor sampled from a soil pore liquid sampler will be in compositional equilibrium with solute phase contaminants when pore liquid tensions are within the operating range of the lysimeter and if pore sizes are not so great as to cause loss of hydraulic contact between the soil and the porous segment of the lysimeter. Subsequent aliquots of soil gas may compositionally resemble soil vapor in situ if soil atmosphere enters the porous segment of the sampling device. When the lysimeter cannot recover a pore liquid sample, the soil gas recovered will be compositionally similar to soil vapor in situ.

6.2.7.2 The most common effort to recover soil gas from a suction lysimeter occurs when polytetrafluoroethylene (PTFE) porous segments are employed in sampling environments with high soil moisture tensions (low moisture contents). At tensions above 60 to 80 centibars, soil pore liquid samples cannot be collected (see Guide D 4696). However, soil gas can be recovered through the porous segment and collected at the surface. This alternative sampling effort can monitor soil vapor contaminants utilizing an otherwise unsuccessful procedure until soil moisture contents increase or until an alternative soil pore liquid sampler can be installed.

6.2.7.3 This technique is limited by the relative expense and complexity of installation of the sampling devices as a primary soil gas sampling method. The completeness criterion for quality assurance is difficult to satisfy due to the inability to anticipate the performance of the soil pore liquid sampler with respect to vapor recovery. Moreover, compositional bias toward solute phase contaminants and contaminants volatilized from free product is likely in soil gas samples recovered concurrently with soil pore liquid samples.

6.3 *Methodology in Application of a Sampling Technique*—The likelihood of success of the soil gas sampling technique selected is controlled in part by the methodology in application of that sampling technique. This methodology should be guided by the objectives of the subject project and the perceived spatial and temporal array of the potential sampling targets.

6.3.1 *Grids*—Many problems suitable for soil gas monitoring are best solved by obtaining data distributed over a geographic area. Sampling in grid patterns of variable design and spacing can be a very effective way to provide data coverage over a large area for a very low cost of acquisition. Common applications of soil gas grid sampling are environmental contaminant assessments, exploration for natural resources and the siting of locations for other monitoring or exploratory techniques. Compositional analyses in conjunction with properly designed grid systems are often fundamental to successful evaluation of soil gas monitoring.

6.3.1.1 Grid spacing provides for the location of soil gas samples in grid cells. The selection of grid cell size is strongly dependent upon the relationship between project confidence level requirements and cost budget. Small survey targets and complex vadose zone geology require decreased spacing between soil gas sample locations for grid methodology to be successful. Some applications, for example, defining the boundaries of contaminated soil or ground-water contaminant plumes, may require the grid cell area to be as small as 100 to 400 ft^2 (9 to 37 m^2). Most applications to natural resource exploration monitor naturally occurring volatile compounds in soil atmospheres, requiring closely spaced grids to increase the signal to noise ratio. However, a closely spaced exploratory grid equates to a broadly spaced grid for environmental application in most situations. Common petroleum exploration grid spacing utilizes a grid cell area of approximately 250 000 ft^2 (23 000 m^2), however grid cells can range from 10 000 to 1 000 000 ft^2 (9 to 90 000 m^2) depending upon perceived reservoir target area. Widely spaced grid sample arrays are useful in reconnaissance applications such as the establishment of contaminant baselines or evaluation of the exploration potential of a geologic basin. Grid cells for such purposes can be as large as a square mile or more.

6.3.1.2 The tendency exists for investigators with constrained budgets to utilize overly large grid cell spacings. This action normally results in inadequate, over-interpreted data supporting meaningless conclusions. Care must be taken to avoid this caveat.

6.3.1.3 Grid arrays can be designed as regularly spaced and predetermined locations for soil gas sampling or they can be irregularly spaced and continually field modified. Predetermined and widely spaced grid patterns are most useful for reconnaissance work, while closely spaced, irregularly situated or field modified soil gas grid sample sites, or both, are commonly used when targeting contaminant plume boundaries, contamination from underground storage tanks or other detail work.

6.3.1.4 Multiple depth sampling, discussed in 6.3.3, when coupled with a soil gas grid sampling methodology, can provide useful data in complex geologic settings and sites with multiple contaminant sources. Computer mapping of closely spaced three-dimensional soil gas grids can provide the investigator with horizontal or vertical cross sections through the subject site, making difficult observations possible.

6.3.2 *Profiling*—Profiling is a soil gas sampling methodology useful to test a linear array for the existence of contaminants. Profiling is most often performed by sampling at closely spaced intervals in a linear array and is displayed as contaminant concentration or composition versus distance sampled on an $X - Y$ plot. Concentration data are often displayed logarithmically on the ordinant (Y) axis, while single components or ratios of compositional data are often displayed linearly on the ordinant axis.

6.3.2.1 For environmental applications such as leak detection along the length of a pipeline or monitoring of contaminant encroachment across a property boundary, soil gas samples are recovered along a profile at intervals from 25 to 100 ft (8 to 30 m) (23). Profiling for natural resource exploration can be performed at sample intervals from 50 to 500 ft (15 to 50 m), depending upon the application.

6.3.2.2 Profiling is useful as a corroborative tool for other monitoring or exploration methods. For example, a soil gas sample profile acquired coincident with a seismic profile can suggest primary contaminant migration pathways or the boundaries of confining layers in shallow, complex geologic settings. This technique has been demonstrated as highly effective in reducing exploratory risk prior to drilling for petroleum and natural gas, by suggesting the presence of hydrocarbon seepage coincident with structures with reservoir potential defined by the seismic method (51).

6.3.2.3 Soil gas profiling is also a convenient methodology effective in comparative evaluation of multiple soil gas sampling techniques. Due to variations common to the dynamic equilibrium conditions over small spatial and temporal intervals in the vadose zone (see 4.1), comparisons of multiple soil gas techniques using only one or a few soil gas samples recovered from nearly identical locations will not result in a valid comparison. However, a visual overlay of soil gas profiles resulting from the implementation of the various sampling techniques can provide a rapid and definitive comparison as to the efficiency of recovery of subject contaminants by a particular sampling system in a specific sampling environment. Similarly, comparison of profiles obtained by using the same soil gas sampling system can provide a direct measurement of system accuracy for quality control purposes.

6.3.2.4 Some investigators compare geographically coincident profiles obtained with the same sampling system at times differing by days or even years in order to generate a data correction factor in order to enhance data comparability. This practice is strongly discouraged. Factors not anticipated in this practice such as the effects of the dynamic equilibrium in the vadose zone, unavoidable changes in procedure due to personnel substitutions, contaminant movement or cultural influence on the sampling environment can have impact on results that are far more significant than the apparent correction.

6.3.3 *Multiple Depth Sampling*—Methodologies encompassing multiple depth sampling normally have one of two goals, that is, to monitor changes in soil gas contaminant fractions versus depth, and to closely follow a single sampling horizon for an entire soil gas grid or profile.

6.3.3.1 When the goal of a survey is to monitor contaminants over varying depths, some sampling systems can recover soil gas samples as probes are advanced deeper into the vadose zone. This practice is helpful in determining the optimum sampling depth for a particular site or to demonstrate the presence or absence of soil atmosphere contamination in a certain horizon. Soil gas contaminant concentrations often increase with depth as the sampling horizon

approaches contaminated ground water or other source of soil gas contaminants (52). Caution must be exercised when soil gas sampling tools are advanced to increasing depths due to the fact that cross contamination of some or all of the sampling system is unavoidable. This situation limits quality control for this type of multiple depth sampling. Attempts to eliminate cross contamination in multiple depth sampling by replacement or decontamination of sampling equipment with each new sample aliquot also result in limited quality control. Tool withdrawal and tool reinsertion result in venting of the sampling environment via an open hole. The open hole behaves as a macroporous pore space, allowing enhanced partitioning into the vapor phase and convective migration to the atmosphere. The end result is a reduction in representativeness for each subsequently recovered soil gas sample.

6.3.3.2 Multiple depth sampling can also be used to focus a sampling program into a single geologic unit or suite of units without regard to depth. This practice is helpful at sites with complex lithologic changes in the vadose zone. Samples can be recovered from lithologies with greater permeability to vapor or greater storage capacity for vapor when bias in sampling depth is necessary to accomplish project goals. This practice involves greater effort and expense than most methodologies due to the necessity to establish the presence, thickness and depth of the target horizons prior to soil gas sampling. The most common application of this methodology is the sampling of soil gas at the top of the capillary fringe.

6.3.4 *Time Variant Methodologies*—Monitoring soil gas in the vadose zone over time can suggest process rates of contaminant partitioning, emplacement, migration and degradation. Practical application of this methodology includes the monitoring of the effectiveness of remedial air-injection systems, the appearance of contaminants sourced from underground storage tanks, the encroachment of contamination onto a subject property from an abutting property and the mitigation of soil and ground-water contamination by microorganisms.

6.3.4.1 Some investigators and regulators with responsibilities at more than one location delegate seemingly simple time variant soil gas monitoring tasks to local personnel. Numerous problems with time variant monitoring can arise in the field as the result of poor system maintenance and record keeping by inexperienced or unmotivated personnel (property owners or parties responsible for contamination).

6.3.4.2 Certain maintenance problems are easily corrected, that is, cleaning bacteria and other foreign matter from detectors or replacing damaged components. Other maintenance problems can be fatal flaws in the methodology. These are principally related to ice formation in the sampling system and destruction of system integrity due to soil frost heaving.

6.3.5 *Combination of Soil Gas Monitoring With Other Vadose Zone Monitoring Techniques*—Soil gas monitoring is not a stand-alone technique. Corroborative support of this reconnaissance and screening tool by other vadose zone monitoring techniques is strongly encouraged. The possible combinations of the various vadose zone techniques with soil gas surveys are numerous. Soil gas can commonly be used as a reconnaissance tool to locate other monitoring devices such as lysimeters, neutron probes or ground water monitoring/sampling wells. Limits upon such combinations are controlled by budgetary constraints and the investigator's imagination.

6.4 *Field QA/QC*—Quality assurance and quality control procedures (QA/QC) are essential to establishing support for any interpretation of measurement data. Soil gas monitoring data requires a thorough QA/QC protocol confirming that data have been generated to satisfy the data quality objectives for the survey. This requirement is well known, however few investigators subject their soil gas data sets to the rigors of such protocol. Conclusions based upon data of unknown quality may be without merit. Justification for interpretations based upon data of unknown quality is not possible.

6.4.1 QA/QC requirements are dependent upon the data quality objectives defined in the planning phase of the survey. For example, simple contaminant audits require a less demanding QA/QC protocol than contaminant source identification. The goals of the QA/QC effort must be understood by field personnel to assure effective implementation of field QA/QC. A document control officer who is a member of the field team can provide this assurance.

6.4.2 Persons collecting descriptive data should not be varied during a soil gas survey. Soil descriptions, for example, can be somewhat subjective when estimations are made as to soil moisture or clay content. Changes in field personnel can translate into apparent changes in soil lithology that are merely functions of this subjectivity. The document control officer can review field records to discover any obvious errors related to descriptive data.

6.4.3 The results of a soil gas survey are highly sensitive to procedure. Field personnel should closely follow a standard operating procedure. This procedure should include the method(s) selected for the survey including the sampling system, means of sample collection, handling and transport of samples and field based equipment decontamination. A standard practice for equipment decontamination is essential to maximize the integrity of samples that may undergo chemical analyses (see Practice D 5088). Any deviations in the standard operating procedure should be recorded by the document control officer in a field notebook, with notes outlining the justification for the deviation. Data comparability can be severely compromised by deviations from the standard operating procedure.

6.4.4 Field based equipment decontamination can have impact on data quality. This results from the potential for cross contamination of samples due to poorly controlled field cleaning procedure or difficulties presented by the inconvenience of field decontamination. Field based equipment decontamination should not be considered a method of choice, but if unavoidable, must be performed with the data quality objectives for the survey as driving forces for procedure.

6.4.5 Bias of soil gas data describes a situation of consistently lower-than-actual or higher-than-actual soil gas contaminant concentration measurements (32). The bias of a measurement process is a generic concept related to consistent or systematic difference between a set of test results from the process and an accepted reference value of the property being measured (see Practice E 177). Bias can be imparted to

the data through sample site selection, that is, exposure of a sampling device to an environment of enhanced contaminant concentration due to a preferential contaminant migration pathway, or exposure of a sampling device to an environment devoid of contaminants due to barriers to contaminant migration. Bias may also result from malfunction of the sampling system, contaminant degradation or numerous other factors. False positive or false negative values can result, lowering the value of the soil gas data set.

6.4.6 Table 2 summarizes some common problems in soil gas monitoring that can result in biased results.

6.4.7 A sampling program must be conducted during the survey to support evaluation of both the sampling system in the field and the analytical system employed. These samples are known as QA/QC samples. The type and magnitude of QA/QC sampling depends upon the purpose of the soil gas survey and the requirements for data quality attendant to it. It is the responsibility of the investigator to determine the appropriate rigor of field QA/QC protocol. The variation in QA/QC protocol from survey to survey is controlled by the purpose and magnitude of the survey, and can vary to a great degree.

6.4.8 The types of field QA/QC samples are field blanks, travel blanks, sample container blanks, sample probe blanks and sample replicates. Other types of QA/QC samples are analytical in nature and are discussed in 6.6.

6.4.9 Field blanks are samples of ambient air or nitrogen recovered from the sampling system which are recovered to determine contamination of samples by ambient atmospheric air, or, to act as system blanks to test for contamination of the sampling system. Field blanks are used to provide an indication of the probability of leakage in the sampling system or the breakthrough of atmospheric air to the sampling device through macroporous migration pathways in the vadose zone such as soil cracks or moldic porosity. If nitrogen is employed instead of atmospheric air, field blanks can have higher contaminant levels than soil gas. This is especially true for petroleum hydrocarbons in urban environments. At least one field blank should be recovered for each ten soil gas samples, or at least one field blank per sample batch or container type (53).

6.4.10 Travel blanks are the contents of a sample container handled in the same manner as those containers holding samples, except that there has been no sample inserted into the travel blank. The purpose for travel blanks is to audit sample integrity for loss due to sample handling and transport. Travel blanks are useful when analysis is performed at an off-site laboratory. The results obtained by analysis of travel blanks can be used to indicate a potential need to modify sample handling and transport procedure. At least one travel blank should be included in each batch of samples.

6.4.11 Sample container blanks are obtained by sampling the contents of a clean sample container to ensure that residual contaminants are not present in the container prior to sample collection. If contamination is detected in the cleaned containers, the decontamination procedure must be modified to remedy the problem. Sample container blanks should be collected and analyzed prior to each use of a sample container.

6.4.12 Sample probe blanks, consisting of carrier gas or atmospheric air contrasted to atmospheric air blanks, are drawn through the sampling device and recovered in the same manner as soil gas. The purpose for sample probe blanks is to check for the presence of sample train contaminants that would impact data quality. If contaminants are detected in sample probe blanks, the decontamination procedure must be modified to remedy this condition. Sample probe blanks should be collected and analyzed prior to each use of a probe and/or other components of the sampling system.

6.4.13 Field replicates are recovered as separate soil gas samples collected from the same sample site into multiple containers. Field replicates can be used to estimate the combined precision of sampling and analysis. The recovery of field replicates is not a common practice. When field replicates are demanded by a client or as dictated by a particular situation, field replicates should be recovered as often as is economically and practically possible, however in no instance should the number of replicates fall below ten percent of the total number of soil gas samples (53).

6.4.14 Sample spiking, or the addition of a known quantity of a known compound or mixture to the soil gas sample, is sometimes performed in the field to provide internal checks of analytical quality. Sample spiking in the field is not recommended due to measurement uncertainties in the field. Moreover, caution must be exercised with this procedure because of the potential for contaminant interaction with the known compound(s).

6.4.15 A paperwork audit is recommended at the end of each working day or at the conclusion of recovery of each batch of samples recovered. The paperwork audit should be conducted by the document control officer and include evidence of an equipment inventory, sample inventory including QA/QC samples, review of field notes and chain-of-custody documentation.

6.4.16 Chain-of-custody documentation is recommended at all times, and is mandatory for soil gas surveys when samples are transmitted to an off-site laboratory. It is recommended for soil gas surveys when sample custody is transferred to someone other than the field team leader for any reason. Chain-of-custody documentation assures that samples have not been altered or mishandled prior to analysis. This procedure is mandatory for sample handling and transport in situations where there is likely to be a cost

TABLE 2 Summary of Possible Causes of False Positive and False Negative Values[A]

Result	Causes
False negatives, that is, falsely low values	Barriers to gaseous diffusion, such as perched water, clay lenses, impervious man-made debris, saturation of soil pores with water (as from rain), low subsurface temperatures.
	Biological or chemical degradation.
	Leakage or blockage in the sample train, improper purge procedure, loss of sample from sample container, problem with analytical system.
False positives, that is, falsely high values	Contamination in sampling train, sample container, or analytical system.
	Contribution of volatile organic contaminants from vegetation.
	Significant contamination in overlying soil.

[A] See Ref (32).

recovery effort or demonstration of contaminant responsibility in a court of law.

6.5 *Sample Handling and Transport*—Soil gas sampling and analysis usually involve the monitoring of contaminants at very low levels. Consideration of sample handling and transport is not trivial to this exercise.

6.5.1 The period of sample handling and transport represents the greatest opportunity for loss or gain of contaminants from or to sample containers. Loss occurs by contaminant condensation within the sampling train, sorption onto materials within the sampling train, solution into condensed water in the sampling train, chemical changes or leakage to the atmosphere through defects in the sampling apparatus or sample container. Gain of contaminants from sources other than the sampling horizon can occur through related mechanisms working in reverse. Both processes can severely limit the value of data obtained from a survey, and they must be minimized.

6.5.2 In general, the time between sample collection and analysis should be minimized. Investigators should protect samples against light and heat, and exercise precautions against leaks (see Practice D 1605).

6.5.3 *Acceptable Materials*—Investigators are responsible for selecting materials for soil gas sampling, transfer and containment that will not impact sample integrity. Containers that have parts made from porous or synthetic materials such as PTFE, rubber or many plastics are likely to retain or contribute contaminants to soil gas samples. Corrosive metals such as steel or brass become difficult to decontaminate upon corrosion due to the increased surface area of the corroded material and its enhanced sorptive capacity. Septa of any material will be responsible for measurable contaminant loss over time due to leakage. Acceptable materials can be conveniently decontaminated prior to soil gas recovery. Materials that cannot be decontaminated effectively between samples must either be replaced between samples, considered in QA/QC planning as a survey limitation or abandoned in favor of more suitable materials.

6.5.4 *Integral Systems*—Problems of sample handling and transport are minimized by integration of the sampling and analytical system. For example, a whole air-active sampling system can be coupled directly to a portable VOC (volatile organic compound) analyzer. The sample stream is fed directly to the intake port of the analyzer and passed through the detector. If there are no system malfunctions in the sample path, problems of sample degradation become trivial.

6.5.4.1 Care must be exercised with integral systems, however. The dead volume of integral systems is much higher than separate sampling and analytical systems. If the sampling system is not capable of delivering constant sample flow rates at or exceeding the requirements of the analyzer employed, data accuracy and comparability can be seriously affected. Moreover, a large sample volume is required merely to purge the sample system. In soils with moderate moisture contents or even nominal clay contents, it may not be possible to recover the volume of soil gas required to purge the system without serious negative impact to the composition of the soil gas sample recovered. Vapor phase contaminants can be lost to purge volume and atmospheric breakthrough can occur, leading toward a false negative result. Although this problem may not be apparent in seriously contaminated environments, it can become a fatal flaw at low contaminant levels.

6.5.4.2 Cross-contamination is a concern with integral systems. Many integral systems employ common elements from sample to sample, namely tubing, flow meters and analyzer components. Overcoming persistent contaminants can be difficult in integral systems, especially when high soil humidity and cold weather complicate the field effort.

6.5.5 *Transfer of Samples from Sampler to Container*—The method of transfer of samples from sampling device to containers is largely dependent upon the volume of soil gas recovered.

6.5.5.1 Small volume samples are commonly recovered by syringe for immediate injection into an analyzer or small volume container. Glass gas-tight chromatography syringes are employed when rigorous QA/QC protocol is required and samples are injected into the analyzer immediately upon recovery. These syringes must be decontaminated prior to recovery of each sample aliquot. Disposable syringes are employed when samples are to be transferred to a small volume container for transport. They are inexpensive, commercially available and convenient to use. However, disposable syringes can present a disposal problem. They should be inventoried prior to use and destroyed after use, the number destroyed equalling the number inventoried and used. Destruction includes smashing the syringe cylinder and clipping the needle.

6.5.5.2 Hand pumps are also used to transfer samples into tedlar bags or glass bulbs. Hand pumps are preferably installed behind the analyzer or container in the sample train to avoid contribution from or loss of contaminants to the hand pump. Hand pumps commonly contain petroleum-based lubricants which will contribute to the hydrocarbon content of soil gas. These devices must be placed at the end of the sample train or abandoned in favor of another tool.

6.5.5.3 Large volumes of soil gas are commonly recovered by hand or mechanical pumps installed at the end of the sample train. Large volume systems can be metered for soil gas flow rate, which is controlled by the capacity of the vadose zone sampling horizon to transmit vapor to the sampling device, the volume and configuration of the sampling system and the requirements of the analyzer or sorptive trap employed.

6.5.5.4 Small volume sampling is quite sensitive to variations in sample transfer technique. Septum coring by syringe is a common problem that restricts flow of soil gas through the needle. Coring can be corrected by decreasing the needle size and using a relatively hard septum material. Coring does not occur with side-port needles, a high-cost alternative. Needles of 25 to 27 gage seldom core septa. However, flow rates through these small gage needles are slow enough to require great care in consistency of sampling rate to minimize septum bleeding during sampling. This consistency is highly subjective and must be obtained through experience. Polypropylene disposable needles may provide opportunity for contaminant loss by sorption or gain by contribution to the soil gas sample. This can be minimized by using the polypropylene syringe to purge the sampling device prior to sampling, thereby reducing the potential for loss or gain of

contaminants to that of the sampling device. Luer-lock needles should be checked for tightness by twisting prior to each use.

6.5.5.5 Tubing is commonly used in large volume sampling. For low level detection, tubing can present a cross contamination problem if not replaced in the sampling train prior to sampling at a new location. Some particulate matter and condensate may be trapped in tubing prior to entry into the flow meter and analyzer by looping the tubing into three or four small diameter loops at a point near the sampling device. This can eliminate the need for water traps or particulate filters in the system that can contribute to system loss or gain of contaminants.

6.5.5.6 Vacuum can be employed to transfer soil gas from a sampler to a container. Evacuated glass bulbs, some containing adsorbents or absorbing liquids (see Practice D 1605), can be affixed to an in-place and purged sampling device and allowed to come to pressure equilibrium. Care must be exercised in recovery of the gas sample from a vacuum cylinder. Upon recovery, the sample is immediately subjected to negative pressure and atmospheric contamination of the sample is encouraged.

6.5.6 *Sample Collection: Containers*—A wide variety of sample containers is employed by field investigators. Container selection is based upon the physical properties of the contaminants sampled, the volume of the sample recovered, the physical properties of suspected contaminants, the sampling system employed, the anticipated sample holding time prior to analysis and the analytical method chosen. Container type for a soil gas survey should be held constant within the survey. A change in container type can impart bias to a portion of the data due to sorptive or desorptive processes related to container type.

6.5.6.1 Whole air samples can be contained in any device made of suitable materials (see 6.5.3) that conveniently satisfy survey, handling, transport and analytical requirements. Certain containers require special handling practice. The literature provides discourse on atmospheric sampling bags (54).

6.5.6.2 Sorbent traps are commonly self-contained. Care must be exercised to select a trapping device that is compatible with the properties of the target compounds and the technique of desorption chosen. Good practice for use of these devices, including handling and desorption procedure is required for successful implementation of sorbent traps when sampling organic compound vapors (see Practice D 3686).

6.5.6.3 Table 2 provides an inventory of sample containers, their applications, advantages and limitations (32).

6.5.6.4 Containers exist that provide for both whole-air and sorbent fractions as well as removal of sample by displacement (see Practice D 1605). Some are convenient for field use, however most are too complex or fragile to be of effective use for a field screening technique requiring rapid mobility.

6.5.6.5 Detector tubes should not be considered as a primary containment vehicle for the purpose of storage and transport of soil gas. A discussion of detector tube application is provided in 6.6.1.

6.5.6.6 Containers for soil samples to be preserved for a subsequent headspace analysis range from glass sample vials to metal cans. The choice of container for soil headspace determination is dependent upon the method of sampling chosen. For soil samples obtained by backhoe, bucket auger or other destructive technique, that is, a disturbed sample, extrusion into a sample vial is not necessary since most of the highly volatile components have already been lost through the act of soil sampling. Metal cans should be made from a material that does not rust. Coating materials and sealing waxes are likely to react with or adsorb soil contaminants, presenting limitations to the value of the data collected. Glass containers with screw threads or crimped seals are difficult to use for soil headspace methods due to the inability of investigators to consistently, thoroughly and rapidly clean the threads or crimp surfaces of all containers prior to capping.

6.5.6.7 Soil pore liquid headspace samples are whole-air or whole-air plus pore liquid samples. They may be contained in most devices suitable for whole-air containment, however investigators are cautioned to select containers from which a vapor sample can be extracted for analysis independently of the liquid present.

6.5.7 *Sample Processing*—Some investigators process soil vapor samples prior to analysis. Processing is performed in an effort to control sample degradation in containers. Efforts to check this degradation by sample processing include refrigeration, pressurization, and pasteurization. As a general practice, sample processing is strongly discouraged. Refrigeration may be somewhat effective in controlling sample degradation, however the best method is to limit or avoid soil gas sample storage whenever possible. The limited shelf life of soil gas samples is discussed in 6.5.9.

6.5.7.1 Extraction is a sample processing step used to remove soil contaminants from soil cores or other similar samples. This technique can efficiently recover contaminants from all residence phases, not just the vapor phase. As a result, the technique yields samples that are not representative of soil atmosphere contaminant suites.

6.5.8 *Sample Transport*—If samples are to be transported to an off-site laboratory for analysis, they must be properly packaged to avoid damage to sample containers. Care must be taken to keep samples from becoming overly warm or agitated during transport. Overnight air express is highly convenient if samples are properly contained, but air freight is not recommended if samples are held in containers such as gas tight syringes or tedlar bags. These containers have other limitations as discussed in 6.5.6.

6.5.9 *Sample Life*—Soil gas samples have limited shelf life even in the most effective containers. Soil gas sample life is strongly container dependent. Numerous factors limit shelf life; most involve degradation in a container. Exposure to light, heat and agitation during shipping will accelerate sample degradation. Biodegradation may occur in some sample containers if water vapor condenses in a container containing microorganisms capable of metabolizing contaminants as substrate.

6.5.9.1 The safest practice is to minimize sample storage time. This problem is greatest when off-site laboratories are engaged to analyze the samples. Prior to recovering the soil gas samples, arrangements can be made with the selected off-site testing laboratory to schedule the necessary personnel and equipment in anticipation of sample delivery.

6.5.10 *Soil Gas Archiving*—Sample archiving in anticipation of a future analytical or descriptive requirement is a common practice. Minimal effects of degradation or loss may be noted in storing certain sorbed samples. Soil gas archiving is, however, not recommended. Although dependent upon the type of container and the storage environment, the likelihood of degradation of soil gas samples is great enough to raise concern. Insertion of standard gases into an archived sample set and spiking of archived soil gas samples with standards provides a reference to determine the likelihood or extent of sample degradation.

6.6 *Analysis of Soil Gas Samples*—Soil gas analysis procedure is based upon pre-existing protocol established for the analysis of contaminants in ambient air. A common reference practice defining terms, sampling information, calibration techniques and methods for validating results may be applied to all automatic analyzers (see Practice D 3249). Basic laboratory practice common to investigators engaged in sampling and analysis of atmospheres applies to soil gas analysis. Note that air sampling protocols and soil gas sampling protocols are not equivalent; geophysical and geochemical factors as well as definition of air sample volume contribute to this lack of equivalency. This guide includes the criteria, guidelines and recommendations for analytical segments including the mode of operation of the laboratory and data validation (see Practice D 3614).

6.6.1 *Basic Analytical Approach*—Soil gas analysis is performed to identify the presence of contaminants, their type and relative concentrations. Various analytical methods are highly general, satisfying only the most rudimentary requirements of contaminant screening. Others are sophisticated, providing identification and relative concentration information for numerous chemical compounds determined to be present in a soil gas sample. The choice of basic analytical approach in soil gas analysis is driven by the purpose of the soil gas survey, quality assurance objectives and budgetary constraints placed upon investigators.

6.6.1.1 Soil gas surveying as a field screening technique can often be effective without the commitment of expenditure for highly sophisticated techniques. This survey purpose is merely to locate other, more direct, techniques. Caution is suggested when choosing highly sophisticated analytical methods for field screening by soil gas monitoring. This selection is controlled largely by the need for the analytical method chosen to be cost-effective.

6.6.1.2 Other applications of soil gas monitoring require more thorough analytical protocol. It is not possible, for example, to suggest the locations of partitioned miscible and immiscible ground-water contaminant plumes with elementary analytical systems. Moreover, the independent monitoring of multiple classes of contaminants in soil gas normally requires analytical systems with multiple detectors. Successful soil gas monitoring for petroleum exploration requires an analytical system which can separate and identify extremely similar volatile compounds occurring at very low concentration levels.

6.6.1.3 Contaminant concentrations in soil gas can vary from levels below the detection limit of the most sophisticated equipment to percent of a whole-air sample. Ideally, the analytical system chosen has enough flexibility to determine contaminants in a wide range of concentrations. Care should be taken to select an analytical system sensitive enough to avoid false negative results which can lead to invalid conclusions. Many analytical systems are not designed to perform to specifications in very high concentration environments, requiring sample dilution prior to analysis or selection of a less sensitive method.

6.6.1.4 Of primary importance to the successful analysis of soil gas is the familiarity and experience of the analyst with the analytical system chosen. The analyst must be able to independently care for and maintain the equipment as well as recognize symptoms of procedural error. The success of an analytical effort lies wholly with operator ability and experience. Excessive machine capability cannot compensate for operator inexperience.

6.6.1.5 Soil gas may be analyzed by a number of methods, including portable VOC (volatile organic compound) analyzers, gas elution chromatography, gas chromatography-mass spectroscopy, and colorimetric and color-indicating detector tubes. Infrared spectroscopy and fiber optic chemical sensors can be applied to soil gas gas analysis, however their use is currently limited and few investigators have experience with this instrumentation. In practice, gas chromatography (GC) or GC-based handheld detectors are the most widely used analytical instruments (32) for soil gas analysis. This guide uses numerous terms relating to various GC methods for soil gas analysis. Most of the terms should apply to other GC methods (see Practice E 355).

6.6.1.6 Portable VOC analyzers used for fugitive emission screening and industrial hygiene monitoring have been adopted for soil gas analytical purposes by numerous investigators. These devices are easily transported to and from the field, require minimal operator skill, provide immediate data and serve to eliminate many sample handling and transport steps which can result in uncertainty. Portable VOC analyzers are limited in application to very low level detection due to the absence of a concentration step. They exhibit limited selectivity and do not have the ability to separate contaminant compounds, leading to potential interference. These devices also are limited in accuracy due to the inability to calibrate for the wide variety of contaminant compounds encountered in soil gas, each compound having its own character of detector response. Portable VOC analyzers contain three types of detectors. These are the flame ionization detector (FID), the photoionization detector (PID) and the infrared (IR) detector. The literature contains a thorough treatment of these devices (10, 55).

6.6.1.7 Soil gas analysis by GC is by far the most versatile and the most costly soil gas analytical method. Instrumentation can be varied to accommodate field mobility, however this is not always required. The technique provides separation of compounds in a chromatographic column, tentative identification of compounds determined to be present and a relative quantitation of compound concentration based upon comparison to a known standard. Soil gas is introduced into the GC and conveyed through a chromatographic column by a carrier gas, separating the contaminants as they pass through the column. The separation is obtained when the sample mixture in the vapor phase passes through a column containing a stationary phase possessing special adsorptive properties. As the gas stream emerges from the column, it passes through a detector, providing for measurement of a

specific sample property through the recording of detector electrical response. These responses, or peaks, are recorded as a function of time. Comparison of known standard compound response time with the response time of an unknown represented by a peak results in the tentative identification of the unknown. Comparison of the magnitude of detector response to the newly identified compound versus detector response to the same compound of known concentration, a laboratory standard, results in a relative quantitation of subject compound concentration in the sample.

6.6.1.8 Gas chromatography is essentially a physical separation technique. The degree of separation depends upon the differences in the distribution of volatile compounds, organic or inorganic, between a gaseous mobile phase and a selected stationary phase that is contained in a tube or GC column (see Practice E 260).

6.6.1.9 Numerous factors can impact the ability of the GC to determine contaminants in a soil gas sample. These include column characteristics, sample flow rate, sample temperature, the composition of the carrier gas and the type of detector employed. Instrumentation can be expanded to include multiple columns, multiple detectors, sample loops and temperature programming, all of which make an instrument more versatile, albeit at additional cost.

6.6.1.10 Simple GCs are portable analyzers with GC options. Field GCs are more advanced instruments with temperature programmable ovens and provide opportunity for multiple columns and detectors. They can be carried in mobile laboratories or established in a temporary base laboratory in the field. Research-grade instruments are normally based at off-site laboratories with strictly controlled environments. These are used when positive identification or very low detection limits are specified. The literature contains excellent comparisons of the advantages, limitations and applications of the various configurations of GCs, including instrument specifications (**10, 32, 56, 57**).

6.6.1.11 Detector tubes have been applied to safety and health atmospheric monitoring, agriculture and the chemical industry. These devices are designed to be compound specific, although this characteristic is dependent upon the contaminant compounds present in the sample drawn through the tube. Detector tubes may be used for short-term sampling (grab sampling; 1 to 10 min) or long-term sampling (dosimeter sampling; 1 to 8 h). Short-term sampling involves the movement of a given volume of gas through the tube by a mechanical pump. If the substance for which the detector tube was designed is present, the indicator chemical in the tube will change color (stain). The concentration of the gas may be estimated by either the length of the stain compared to a calibration chart or by the intensity of the color change compared to a set of standards (see Practice D 4490). Long-term sampling involves the movement of gas at a very slow rate through the tube by means of an electric pump. The use of long-term detector tube sampling for soil gas monitoring is limited to specific temporal survey designs.

6.6.1.12 Detector tubes are relatively inexpensive and provide immediate results. Their use is restricted to applications with few interfering compounds. Depending upon the contaminants present, they may be of low sensitivity and can be affected by humidity, normally high in soil gas, sample flow rate, temperature extremes (32), storage conditions and shelf life.

6.6.1.13 The literature contains excellent discourse on the detector tube apparatus, reagents, procedure accuracy and amenable compounds (see Practice D 4490).

6.6.2 *Specific Analytical Approaches*—This subsection discusses various detectors and methods that may be integrated into soil gas analytical instrumentation. For methods providing detector alternatives, the choice of an appropriate detector should be guided by knowledge of detector properties. Key properties are as follows (after Mayer, 1989 (32)):

6.6.2.1 *Selectivity or Specificity*—Selectivity refers to the responsiveness of the detector to the compound of interest. Detectors responding to a wide range of classes of compounds are termed universal or non-selective detectors. Those that respond to only certain classes of compounds are termed selective detectors.

6.6.2.2 *Sensitivity*—Sensitivity refers to the relationship between the detector response and the quantity of the subject compound injected. It is the smallest detectable quantity of a compound; it is usually considered to be the amount that produces a response equal to twice the baseline noise of the detector.

6.6.2.3 *Linear Dynamic Range*—Linear dynamic range is the range over which the detector response to a compound is directly proportional to the amount of compound injected. Detectors vary in the range of component concentrations over which they are linear. Wide linear dynamic range is desirable because it simplifies quantitation of samples having widely varying ranges of concentrations.

6.6.2.4 *Stability*—Stability is a factor referring to detector responsivity over time. Stability is controlled by numerous factors and is seldom quantified. The required frequency of instrument calibration is determined by detector stability.

6.6.3 Specific analytical approaches are as follows:

6.6.3.1 *Flame Ionization Detectors (FID)*—Flame ionization detectors generate electric current when gases containing carbon atoms are oxidized to carbon dioxide in a hydrogen flame and potential is applied across the flame. The magnitude of the electric current generated is termed the detector response. FIDs are responsive to hydrocarbon contaminants in soil gas and are commonly employed for this purpose. These detectors are durable for field application, and have a wide linear range and nearly uniform response to organic gas species. FIDs are generally unresponsive to inorganic gases and water vapor, common constituents in soil gas. FID performance can be evaluated independently of the chromatographic column (see Practice E 594). Although highly versatile, these detectors are not selective for halogenated compounds. They require supplies of fuel gas which require careful safety practices in handling and flame ignition.

6.6.3.2 *Photoionization Detectors (PID)*—Photoionization detectors employ ultraviolet radiation to ionize contaminant molecules. Positive ions and free electrons are formed which migrate to the detector electrode(s), resulting in an electric current that is proportional to contaminant concentration at the detector. PIDs are extremely sensitive to aromatic hydrocarbons due to the great efficiency of ionization of pi bonds under ultraviolet radiation. Efficiency of ionization of sigma bonds is lower, resulting in a higher PID detection limit for aliphatic hydrocarbons. The selectivity of

the method can be adjusted by selecting lamps of different energies, causing a change in response of contaminants with fixed ionization potentials to changing lamp energies. Tables exist of ionization potentials of compounds within classes common to soil gas contaminants (58). Methane has an ionization potential higher than the energies of commercially available lamps, limiting the PID to detection of compounds other than methane. PIDs are further limited by their tendency to conceal the presence of low-sensitivity compounds when high-sensitivity compounds (aromatics) are present. PID response can be impacted by condensation of water vapor in the lamp.

6.6.3.3 *Electron Capture Detectors (ECD)*—Electron capture detectors are highly sensitive to and selective for compounds with electronegative functional groups such as CFCs (chloro-fluorocarbons). The sensitivity of the detector is proportional to the number of these groups on a compound, resulting in a unique detector response to each compound. The ECD comprises a source of thermal electrons inside a reaction chamber (a radioactive source emits β radiation which ionizes the carrier gas to produce electrons). The device detects compounds with electronegative functional groups capable of reaction with thermal electrons to form negative ions. Such reactions cause a decrease in the concentration of free electrons. The detector is designed to measure changes in the concentration of these electrons inside the chamber (see Practice E 697). Calibration of the ECD is therefore linked to each compound to be determined by the detector. ECDs are also sensitive to water, oxygen and other common components of soil gas, causing potential problems in method performance. ECDs emit β radiation that should be properly vented. Operation of an ECD requires licensing under Federal regulation.

6.6.3.4 *GC/Mass Spectroscopy*—Combination of gas chromatography and mass spectroscopy results in the GC/MS method of analysis. A mass spectrometer is used to obtain a mass spectrum of each eluting compound. Positive identification of these compounds is sometimes obtained by comparison of the unknown mass spectrum to a library of known spectra. GC/MS can be extremely selective for target compounds. Use of the technique for soil gas monitoring is limited, primarily due to the cost of analyses.

6.6.3.5 *GC/Fourier Transform Infrared Spectroscopy*—This analytical method combines gas chromatography with Fourier transform infrared spectroscopy. GC/FTIR can provide a rapid identification of eluting compounds by comparison of their infrared spectra with a known spectral library. Quantitation is achieved by subsequently passing the sample through an appropriate GC detector such as the FID or ECD. This method, like GC/MS, is limited in application to soil gas monitoring by the high cost of analysis.

6.6.3.6 Other detectors are applied to soil gas analysis by GC, albeit rarely in comparison to FID, PID and ECD. They include the argon ionization detector, a non-destructive device similar in operating design to the ECD, the flame photometric detector (FPD) used to determine organic compounds containing sulfur and phosphorus, and the hot-wire (pyrolyzer) used to determine compounds containing nitrogen.

6.6.4 *Analytical QA/QC*—The validation of the analytical aspects of soil gas monitoring is fundamental to the technique. Analytical equipment and procedure must be evaluated by laboratory QA/QC, just as the sampling system, sampling plan and field procedure are evaluated by field QA/QC methods. Analytical QA/QC defines a confidence limit of performance. The utilization of well tested and uniform analytical practices is essential to the production of reliable and defensible data, the validity of which can be demonstrated at a later date through the use of written field and laboratory records (see Practice D 3614).

6.6.4.1 Most analytical QA/QC plans contain calibration steps, linearity checks, standard analyses, blank analyses, duplicate analyses and audit checks. The various analytical approaches discussed in 6.6.3 require a variety of different protocols which will satisfy the QA/QC requirements for each method. Four types of analytical QA/QC samples are required for determination of quality assurance. These are analytical reagent blanks (used to determine the potential of sample or standard contamination from a reagent), laboratory blanks (used to determine the impact potential of the laboratory atmosphere on analytical results), analytical sample replicates (used to estimate the analytical precision for samples) and analytical standard replicates (used to estimate the analytical precision for standards). Table 3 provides a summary of suggested calibration and quality control requirements for analytical systems (10).

6.6.4.2 The aspects of bias, precision, representativeness, completeness and comparability must be considered to evaluate analytical equipment performance, including the establishment of minimum detectable quantities of contaminant compounds, retention time drift and the linearity of instrument response. Bias and precision must be quantified in order to compare actual survey performance with goals established in the survey plan.

6.6.5 A data validation summary report is a common method of evaluating analytical system performance. A guide for determining parameters key to the data validation summary report is provided as follows.

6.6.5.1 *Bias*—For determination of bias, the percent recovery can be determined using the following formulas:

$$recovery\ reproducibility = (DCS/KCS)*100 \quad (6)$$

where:

DCS = determined concentration of standard, and
KCS = known or certified concentration of standard.

The standard deviation of all standards analyzed can be determined as follows:

$$SD = \{(sum(recovery\text{-}i - recovery\text{-}ave)^2)/(n-1)\}^{0.5} \quad (7)$$

Finally, the range of uncertainty can be determined using the following equation:

$$\pm R = \pm t*(SD)/(n^{0.5}) \quad (8)$$

where:

t = the value of Studentized t at the 90 % confidence level and $(n - 1)$ degrees of freedom.

The bias statements for data collected should be expressed as the average recovery plus or minus the range.

6.6.5.2 *Precision*—For the determination of precision, the relative standard deviation of replicates can be calculated using the following equation:

$$RSD\text{-}pair = SD/Mean \quad (9)$$

TABLE 3 Soil Gas Sampling Containers[A]

Type	Applications	Advantages	Limitations
Stainless steel canisters	Collection of samples for delayed analysis	Durability Ease of sample handling Can be re-used Sample holding time longer than that for other whole-air sample containers Sample volume measurement not required Desorption not required Allows replicate analysis	Expense Requires vacuum pump or gage Can be difficult to decontaminate
Glass bulb	Collection of samples for delayed analysis	Glass is more inert than other sample container materials Septa possible Allows replicate analyses	Easily breakable Leakage through stopcocks or septa possible Adsorption to PTFE or other parts
Bag	Collection of samples for delayed analysis Sampling of very high vapor pressure compounds for which absorption methods are unsuitable	Bulk loss of sample is readily apparent Containers are light-weight and easy to handle Sample volume measurement not required Desorption not required Allows replicate analyses	Expense Some compounds may be lost through or adsorbed to bag walls Some container materials may contaminate samples Containers cannot be easily re-used Leaks in valves
Syringe[B]	Collection of samples for on-site analysis	Ease of sample collection Does not require special equipment to introduce sample into GC Desorption not required	PTFE plungers can adsorb sample Holding time short due to leakage or absorption Sample volume smaller than for other containers
Sorbent sampler	Allows concentration of low level samples If samples are solvent-desorbed, allows analysis of liquid sample	Ease of handling Relatively long holding time	Requires precise sample volume measurements Sorbent type must be tailored to compounds to be measured; adsorption behavior of each compound for solvent used must be accounted for Requires desorption (thermal or solvent) for analysis

[A] See Ref (32).
[B] Syringes may also be used to transfer samples from the sampling device to a container for off-site analysis.

$$RSD\text{-}ave = \{\{(sum(RSD\text{-}pair))^2\}/(n-1)\}^{0.5} \quad (10)$$

where:
RSD-pair = relative standard deviation for each pair of replicates, and
RSD-avg = relative standard deviation overall.
Next, the precision can be determined as follows:

$$precision = \{(t*RSD\text{-}avg)/DF\} *100 \quad (11)$$

where:
precision = the percent precision,
t = the *t* value for $n-1$ pairs of replicates, and
DF = the degrees of freedom = $(n-1)$.
Finally, mean value is reported with associated uncertainty:

$$x \pm (x*t*SD\text{-}ave)/(DF)^{0.5} \quad (12)$$

where:
x = reported chemical concentration, and
t = the value of *t* at the 90 % confidence level for the appropriate degrees of freedom.

6.6.5.3 *Representativeness*—Representativeness is determined by the results of the cross contamination blanks and the air blanks. The results should be presented as a bias estimate, as follows:

$$bias\ (\%) = \{(CCC - CA)/Mean\} *100 \quad (13)$$

where:
CCC = concentration in cross contamination sample,
CA = concentration in air, and
Mean = mean concentration in sample set (bias may also be expressed for a single sample by substituting sample concentration).

6.6.5.4 *Completeness*—The completeness goal is 90 % or higher. Completeness is the number of samples collected that can be validated through the procedures for bias, precision, and representativeness.

6.6.5.5 *Comparability*—Comparability is based upon professional judgment and is provided through planning steps carried out prior to initiation of field work.

6.7 *Data Interpretation*—Soil gas data interpretation is an iterative process including the examination of the raw data, selection of appropriate and useful data displays, and establishment of correlation of the data set to other vadose zone monitoring data and ground truth. Interpretation of soil gas data is not like other interpretive exercises involving measurement data, in that mathematical expressions relating soil gas contaminant concentrations to underlying soil, rock and ground-water contaminant concentrations cannot be written for most applications at a high confidence level. This is a function of a lack of site characteristics information at even the most comprehensively studied sites. Soil gas data cannot be consistently interpreted in a manner that establishes direct correlation between contaminants in a soil gas horizon and contaminants in other horizons. Processes including migration and degradation can have profound influence on the correlation of soil gas data to ground truth. Interpretive efforts excluding consideration of these influencing processes can be highly misleading. For example, the presence of contamination in an underlying horizon will not necessarily correlate to the detection of contaminants in overlying soil atmospheres, that is, the potential for a false negative result. The converse is also true, that is, the potential for a false positive result. Interpretation of GC results in the laboratory without consideration of pertinent hydrogeological informa-

tion may lead to incorrect conclusions (59). However, the detection of contaminants in soil gas does suggest the existence of a contaminant source, and increases in contaminant concentration can suggest close proximity to the source or an increased quantity of the subject contaminant in the subsurface. It is the responsibility of the interpreter to examine soil gas data in context of other site characteristics, and provide an interpretation based upon sound judgment and thorough yet practical data treatment.

6.7.1 *Manipulating Data*—Soil gas data is normally interpreted as raw data. The application of correction factors is not recommended, as it is difficult if not impossible to determine if the magnitude of the correction factor is greater than that of the variance between data populations in a survey. Moreover, the need for correction factors can indicate a flaw in survey design, sampling system performance or the objectivity of the interpreter.

6.7.2 *Defining Data Subpopulations*—Soil gas monitoring seeks to define anomalous subpopulations of data that contain measurable quantities of contaminants or unusual compositions. These populations can easily be described by their contrast to normal populations, for example, contrasting populations with and without measurable contaminants. Establishment of contaminant baselines or conditions "at background" make this contrast possible. If all soil gas samples are recovered in a contaminated area, there may be no apparent contrast.

6.7.2.1 Statistical treatment of soil gas monitoring data allows the interpreter to estimate the amount of variation noted in the survey data due to errors. This practice also permits the interpreter to evaluate the data quality objectives suggested for the survey during the planning phase. Statistical treatment of soil gas data can also be of use to define anomalous data subpopulations when the boundaries of a contaminated area are not clearly defined or if the existence of multiple populations of data (that is, contaminated and uncontaminated) within a single data set is in doubt. The literature contains discourse on statistical treatment of soil gas data (10, 60).

6.7.3 *Interpreting Soil Gas Data Profiles*—Soil gas data from survey profiles displayed on an $X - Y$ plot is an effective aid to data interpretation. This display is useful to examine the overall context for soil gas measurement data potentially indicating contamination. If the profile is displayed as a cross section through a grid pattern or as a linear array of sample points, the profile display can illustrate spatially significant groupings of data subpopulations.

6.7.3.1 It is quite common for concentration data to be highly variant within a contaminated area. Soil gas profiles can be used to show variation in spatially related data. This is one method of defining subpopulations of data indicating contamination or other anomalous characteristics.

6.7.3.2 Multiple data sets can be displayed on a single profile. Comparison of one data set to another on a single profile is a simple visual method to screen for suggested data subpopulations. Comparison of concentration data and compositional data (see 6.7.5) on a single profile can further resolve this problem.

6.7.4 *Mapping Soil Gas Data*—Soil gas data obtained by sampling at a single depth is often mapped to suggest the lateral extent of subsurface contamination. Map suites of soil gas data obtained from multiple depths can sometimes aid investigators in determining the depth to the contaminant source.

6.7.4.1 Numerous algorithms can be used to interpolate between data points, including linear, inverse distance squared, inverse distance cubed, splines and kriging. The various interpolation methods will yield similar results, suggesting a general pattern of contaminant distribution in soil gas. Kriging requires a probability model for each survey site mapping application for which it is employed, the derivation of which requires data which are not normally available for a given soil gas survey area.

6.7.4.2 Caveats exist in using computer mapping programs as interpretive aids. Difficulties can arise in treatment of adjacent data points differing in contaminant concentration by an order of magnitude and more due to vapor migration barriers, preferential vapor flow paths or changes in soil moisture or porosity content. It is possible to model these characteristics and input such a model into some computer mapping programs, however this introduces bias into the mapping effort. Single point soil gas contaminant concentration highs may exist due to a sample density which is insufficient to resolve the cause for the single point anomaly. Contour mapping of such data may be meaningless without the complement of other information, especially detailed knowledge of site characteristics.

6.7.5 *Analyzing the Composition of Soil Gas Contaminants*—Certain applications of soil gas monitoring require detailed analyses available from off-site bench laboratories or mobile laboratories. Determination of a number of contaminant compounds in a soil gas sample set with either of these analytical systems enables the interpreter to make a comparative analysis of the changes in soil gas contaminant composition within that sample set.

6.7.5.1 Compositional analyses can range in scope from a simple listing of the various compounds determined in each sample to thorough data treatments. Profiles of soil gas data can be constructed to illustrate the spatial relationship between two potentially different groupings of data (see 6.7.3). Crossplots of contaminant compound concentrations are highly effective in the definition of data subpopulations, and can be used to relate contaminant types to known on-site waste streams and sources in complex settings. Known as fingerprinting, this guide compares vapor composition over a known contaminant product and the known soil atmosphere composition over that product to soil gas contaminant composition in areas being investigated on the subject site. Subtle divisions in data subpopulations can be defined by crossplots of contaminant ratios. In addition to simple ratioing, computerized multivariate pattern recognition techniques such as cluster, factor and discriminant analyses can assist in the evaluation of intra-data set compositional variations and their relationship to the physical contamination issues at a site.

6.7.5.2 Soil gas data can be examined for the appearance of target compounds determined to be present in contaminant mixtures. The success of this practice, used primarily to establish the location and extent of underlying ground water contamination, relies upon selection of appropriate target compounds and the persistence of target compounds in soil vapor.

6.7.5.3 Monitoring specific compounds in soil gas data can be utilized to determine the progress of degradation or migration of contaminants in the vadose zone and in ground water. Biodegradation has been monitored by the appearance of excessive quantities of carbon dioxide in soil gas (61).

6.7.6 *Interpretation in Context of Other Vadose Zone Monitoring*—Soil gas monitoring is not a technique that can consistently support conclusions based upon interpretations of survey results. For this reason it is strongly recommended that other vadose zone monitoring methods be used to corroborate data obtained from a soil gas survey, especially when investigators are attempting to do more than simply audit a subject site for the presence of contaminants. Useful models of contaminant emplacement and transport in the vadose zone can be constructed by combining techniques. Examples of useful combinations are soil pore liquid and soil gas monitoring or neutron probe and soil gas monitoring.

6.7.7 *Correlation With Ground Truth*—Interpretation of soil gas data is difficult without establishing some form of ground truth with which to substantiate survey results. Ground truth can be in the form of monitoring well data, for purposes of determining the extent of contamination by a ground-water contaminant plume. Examples of other forms of ground truth usable in support of soil gas data interpretation are soil cores, the presence of contaminant odors in basements, observed floating contaminants in storm sewers or utility vaults, or other field observations.

7. Data Reporting Requirements

7.1 *Purpose of Reporting*—Of primary concern in a report of findings pertaining to a soil gas survey is that the report includes the information necessary to describe the results of that survey performed for a particular application. In many instances, certain interpretative methods or data reporting formats useful to end users for one particular application are not relevant to the needs of end users applying the information to a different application. Examples of these differing applications that require unique report subject matter are soil gas contaminant determinations for real property environmental assessments, soil gas monitoring of volatile organic contaminants from underground storage tanks and soil gas sampling as a tool useful in the exploration for natural resources. Certain applications require a thorough treatment of a significant number of factors impacting the meaning and usefulness of soil gas data interpretations. Examples of such applications include damage assessments, contaminant source identification or tests of the effectiveness of remediation. Other applications command minimum reporting requirements. An example of such an application is the monitoring of releases from underground storage tanks over time. Included in a discussion of the report objectives should be an identification of the end user category (for example, regulatory agency, land acquisition negotiations).

7.1.1 A decision must be made regarding the units expressed in reporting, that is, qualitative or quantitative. If quantitative, the appropriate expression of units in volume/volume or weight/volume must be determined. SI units are recommended for reporting of atmospheric measurement data (see Practice D 1914).

7.2 *Report Format*—Certain reporting requirements are commanded without regard to data application. In large part they are related to the QA/QC objectives, and include data comparability, representativeness, bias, precision accuracy, completeness and analytical detection limits whenever possible. At a minimum, a general discussion of the reliability of results and analytical detection limits is warranted; soil gas test data may be evaluated in the same manner as is other atmosphere test data (see Practice D 3614).

7.3 *Salient Points to be Addressed in Reporting*—The report of findings of any soil gas monitoring effort can contain discussions within any number of topics that should be selected to best suit the requirements of the end user. Selection of appropriate topics is discretionary, usually based upon a scope of work determined by prior agreement between the data provider and the data end user. Efforts to limit reporting requirements for the sake of short term time and money cost savings usually result in low-confidence level treatment of the report or an ultimate time and money cost gain, or both. Discussions that should be included when appropriate and whenever possible are provided below.

7.3.1 The purpose of the soil gas study should be stated, as well as the rationale for selection of a particular soil gas monitoring technique.

7.3.2 Selection of a particular soil gas monitoring technique is typically controlled by the chemical and physical properties of the chemical compounds of interest which are known to occur or suspected to occur on site. A discussion of the sample array in three dimensions, sampling method employed and the analytical scheme chosen in context of these properties should be provided.

7.3.3 The rationale for selection of a particular soil gas monitoring technique should always be based upon the physical properties of the vadose zone as well as the chemical and physical properties of the compounds of interest. A discussion of the impact of these vadose zone properties on survey design should be included in the report. The regional and local hydrogeologic conditions within the survey area should be described. A discussion of the regional geology should include the physiographic province, a generalized geologic column, geologic structure and general ground water occurrence. The local conditions should be described with regard to soil type(s), moisture content in the vadose zone, soil/bedrock interface, stratigraphy and lithology, ground water bearing zones, flow directions and gradients, potentiometric levels, aquifer characteristics and ground water quality.

7.3.4 If known and appropriate, the characteristics of a contaminant source or spill should be addressed. Examples of such characteristics are contaminant composition, the likelihood of single or multiple contamination events or the reaction potential (above, within and beneath the vadose zone) of multiple contaminant mixtures.

7.3.5 Every subject of every vadose zone monitoring effort has unique characteristics. Those characteristics that could impact the results of the soil gas monitoring effort should be described to provide a meaningful context in which to interpret the soil gas data.

7.3.6 There are a number of topics common to most soil gas data reporting that are useful in the majority of applications. The regional and specific site location should be identified using a site plot plan. The site plot plan could include an insert showing the regional location. A discussion

should be included regarding the physical structures at the site that may impact the location of sampling points and the migration of soil gas, for example, asphalt and concrete pads, buried pipelines and surface water impoundments. Site history must be considered, including the types of chemical compounds known or suspected to have been used at the site. These compounds should be listed with their chemical and physical properties as they relate to volatilization, solubility and other migration characteristics or soil gas recovery characteristics.

7.3.7 The site should be evaluated in the report of findings for the impact of the regional and local hydrogeologic conditions within the survey area on the results of the survey.

7.3.8 A detailed description should be given of the type of soil gas survey conducted. Details should include selection of active or passive method, whole air or passive sample collection method, sampling array, background sampling, equipment decontamination procedure employed prior to the survey, field or laboratory analytical methods and QA/QC procedures. Any unusual conditions should be noted, such as rainfall events during the course of the survey (especially when moveable soil gas chiefly originates from vadose zone microporosity), high pressure or low pressure front movement across the survey area during the course of the survey (especially when moveable soil gas chiefly originates from vadose zone macroporosity), or visual observations of contamination at sampling points.

7.3.9 If a subject property is found to be contaminated, a separate discussion of soil gas characterization of uncontaminated or non-anomalous contiguous property should be provided in the report of findings. This can be useful in highlighting naturally occurring petroleum hydrocarbons in soil and in establishing a regional baseline of contamination.

7.3.10 Data collected during the field sampling and field or laboratory analyses should be compiled in table form and be included in a preliminary or final report, preferably as appendices. Such data should include a listing of sampling and analysis dates, soil/rock description at each sampling point, depth and diameter of sampling point, quantity of soil gas purged prior to sampling, quantity of sample extracted, chromatogram and/or mass spectra for each sample and a tabulation of QA/QC samples recovered.

7.3.11 The report of findings should include a discussion of the results of the QA/QC efforts, establishing performance within limits set prior to the survey. Data validation involves review of the data collected for the purpose of isolating spurious values (32). Systematic errors or bias can be detected in this review. Suggestions should be made as to the origin of the errors or bias.

7.3.12 Results of analyses should be displayed on plan maps and should include sampling point locations, physical features, contours of equal concentrations of specific compounds or compound groups (for example, alkanes) and any necessary keys or other notes to guarantee map clarity. Cross-sections showing changes in contaminant concentration with depth and concentration profiles of more than one contaminant through several sample locations can be highly useful displays. The report should include text describing each map, cross-section or profile.

7.3.13 Whenever possible, discussion should be provided that correlates soil gas data to ground truth. The most common and widely accepted form of ground truth is data from ground water monitoring wells.

7.3.14 When appropriate, the report of findings should attempt to identify the source of the contaminants encountered in the soil gas survey.

7.3.15 The report should contain a section which discusses the conclusions drawn from the results of the soil gas study and any recommendations which seem appropriate to enhance the value of conducting such a soil gas study. Conclusions should include identification of the compounds detected, if any, an assessment of the appropriateness of the soil gas study method used, and any circumstances that may have significantly impacted the results of the investigation, such as weather conditions or equipment calibration. Recommendations should address need for establishing ground truth, extension of the study to adjacent areas of interest, the need for a different soil gas study method, actions to resolve questionable QA/QC results, or need for additional chemical analyses for contaminant identification.

7.4 *Disadvantages of Real-Time Reporting*—In actual practice, many end users request real-time reporting of soil gas data obtained from field-based laboratories. Presentation of such data presents the opportunity for misunderstanding by end users who are not familiar with the caveats presented by data not examined in light of the QA/QC program or site specific factors. Real-time reporting of soil gas data is therefore not recommended.

8. Keywords

8.1 contaminant; environmental monitoring; geochemistry; ground water; Henry's law; petroleum hydrocarbon; sampling; soil gas; unsaturated flow; vadose zone; vapor monitoring; volatile organic compound

TABLE 4 Summary of Suggested Calibration and Quality Control Requirements for Analytical Systems[A]

Type of Instrument	Detector Type	Type of Calibration/QC Test	Frequency	Gas Standard(s)	Acceptance Criteria	Corrective Action
Portable VOC (THC) Analyzer	FID	(1) Multipoint calibration (zero plus three upscale concentrations)	At start of program	Methane or other aliphatic compound	Correlation coefficient ≥ 0.995	Repeat multipoint calibration after checking calibration dilution system
		(2) Zero (span) calibration	Daily	UHP Air or N_2/Methane	Response factor agreement within ± 20 % of mean RF for multipoint calibration	(1) Repeat zero span calibration (2) If still unacceptable, repeat multipoint calibration
		(3) Control sample analysis	Daily, prior to testing	Methane	Measured concentration within ± 10 % of certified concentration	(1) Repeat zero span calibration (2) Repeat control sample analysis
		(4) Drift check	Daily, at conclusion of testing	Methane	Drift value ≤ 20 % of the input value	(1) Flag day's data as questionable (2) Repair or discontinue use of analyzer
	PID	(1) Multipoint calibration (zero plus three upscale concentrations)	At start of program	Benzene or other aromatic compound	Correlation coefficient ≥ 0.995	Repeat multipoint calibration after checking calibration dilution system
	PID	(2) Zero/span calibration	Daily	Benzene or other aromatic compound	Response factor agreement within ± 20 % of mean RF for multipoint calibration	(1) Repeat zero/span calibration (2) If still unacceptable, repeat multipoint calibration
		(3) Control sample analysis	Daily, prior to testing	Benzene or other aromatic compound	Measured concentration within ± 10 % of certified concentration	(1) Repeat zero/span calibration (2) Repeat control sample analysis
		(4) Drift check	Daily, at conclusion of testing	Benzene or other aromatic compound	Drift ≤ 20 % of the input value	(1) Flag day's data as questionable (2) Repair or discontinue use of analyzer
Portable Gas Chromato-graph	FID	(1) Multipoint calibration (zero plus three upscale concentrations)	At start of program	Benzene or toluene	Correlation coefficient ≥ 0.995	Repeat multipoint calibration after checking calibration dilution system
		(2) Zero/span calibration	Daily	UHP air or N_2/methane	Response factor agreement within ± 20 % of mean RF for multipoint calibration	(1) Repeat zero/span calibration (2) If still unacceptable, repeat multipoint calibration
	FID	(3) Control sample analysis	Daily, prior to testing	Benzene	Measured concentration within ± 10 % of certified concentration	(1) Repeat zero/span calibration (2) Repeat control sample analysis
		(4) Drift check	Daily, at conclusion of testing	Benzene	Drift ≤ 20 % of the input value	(1) Flag day's data as questionable (2) Repair or discontinue use of analyzer
		(5) Retention time checks	Daily	Benzene or toluene	None	None
		(6) Analytical blanks	Daily	UHP air or N_2	Measured concentration ≤ 5 % of the instrument span value	Clean/replace system components until acceptable blank can be obtained
		(7) Sampling system blanks	Daily, plus after very high samples	Sample gas	Measured concentration ≤ 5 % of the instrument span value	Clean/replace system components until acceptable blank can be obtained
	FID	(8) Duplicate samples	10 % of sampling points, minimum	Sample gas	None; provides a measure of total sampling variability	None
		(9) Control point samples	After every ten samples or once per day, whichever is greater	Sample gas	None; provides a measure of temporal variability	None
		(10) Background samples	One sample per day	Sample gas	None; provides a measure of background concentration	None
	PID	(1) Multipoint calibration (zero plus three upscale concentrations)	At start of program	Benzene or toluene	Correlation coefficient ≥ 0.995	Repeat multipoint calibration after checking calibration dilution system
		(2) Zero span calibration	Daily	UHP air or N_2/methane	Response factor agreement within ± 20 % of mean RF for multipoint calibration	(1) Repeat zero/span calibration (2) If still unacceptable, repeat multipoint calibration

TABLE 4 *Continued*

Type of Instrument	Detector Type	Type of Calibration/QC Test	Frequency	Gas Standard(s)	Acceptance Criteria	Corrective Action
	PID	(3) Control sample analysis	Daily, prior to testing	Benzene	Measured concentration within ± 10 % of certified concentration	(1) Repeat zero/span calibration (2) Repeat control sample analysis
		(4) Drift check	Daily, at conclusion of testing	Benzene	Drift ≤ 20 % of the input value	(1) Flag day's data as questionable (2) Repair or discontinue use of analyzer
		(5) Retention time checks	Daily	Benzene or toluene	None	None
		(6) Analytical blanks	Daily	UHP air or N_2	Measured concentration ≤ 5 % of the instrument span value	Clean/replace system components until acceptable blank can be obtained
		(7) Sampling system blanks	Daily (plus after very high samples)	Sample gas	Measured concentration ≤ 5 % of the instrument span value	Clean/replace system components until acceptable blank can be obtained
		(8) Duplicate samples	10 % of sampling points, minimum	Sample gas	None; provides a measure of total sampling variability	None
	PID	(9) Control point samples	After every ten samples or once per day, whichever is greater	Sample gas	None; provides a measure of temporal variability	None
		(10) Background samples	One sample per day	Sample gas	None; provides a measure of background concentration	None
Off-site Gas Chromato-graph	FID	(1) Multipoint calibration (zero plus three upscale concentrations)	1 per month	Propane/hexane	Correlation coefficient ≥ 0.995	Repeat linearity check
		(2) Single point calibration check	Daily, prior to sample analyses	Propane/hexane	Response factor agreement within ± 20 % of most recent average RFs for multipoint calibration	Repeat single point calibration
		(3) Retention time check	Daily, prior to sample analyses	Multicomponent standard	Agreement with preestablished relative retention times	Adjust GC conditions and repeat RT check
	FID	(4) Control sample analysis	Daily, prior to sample analyses	Sample gas	(1) Correct identification of 90 % of components (2) For 90 % of components, measured concentrations within ± 30 % of actual concentrations	Repeat control sample analysis
		(5) Duplicate analyses	Minimum 10 % of samples (all duplicate samples will be analyzed in duplicate)	Sample gas	CV ≤ 20 % for ten major sample components	Repeat sample analysis
		(6) Blank analysis	Daily, prior to sample analysis	UHP air or N_2	Total ≤ 20 ppbv-C	(1) Clean system (2) Repeat blank analysis
	PID	(1) Multipoint calibration (zero plus three upscale concentrations)	1 per month	Propane/hexane	Correlation coefficient ≥ 0.995	Repeat linearity check
	PID	(2) Single point calibration check	Daily, prior to sample analyses	Propane/hexane	Response factor agreement within ± 20 % of most recent average RFs for multipoint calibrations	Repeat single point calibration
		(3) Retention time check	Daily, prior to sample analyses	Multicomponent standard	Agreement with preestablished relative retention times	Adjust QC conditions and repeat RT check
		(4) Control sample analysis	Daily, prior to control sample analyses	Sample gas	(1) Correct identification of 90 % of components (2) For 90 % of components, measured concentrations within ± 30 % of actual concentrations	Repeat control sample analysis
		(5) Duplicate analyses	Minimum 10 % of samples. (Duplicate samples analyzed in duplicate)	Sample gas	CV ≤ 20 % for ten major sample components	Repeat sample analysis
	PID	(6) Blank analysis	Daily, prior to sample analysis	UHP air or N_2	Total ≤ 20 ppbv-C	(1) Clean system (2) Repeat blank analysis

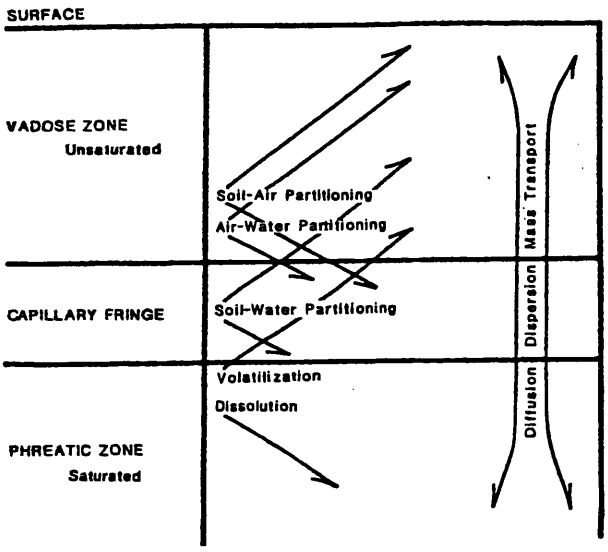
TABLE 4 *Continued*

Type of Instrument	Detector Type	Type of Calibration/QC Test	Frequency	Gas Standard(s)	Acceptance Criteria	Corrective Action
	ECD	(1) Quantitative standard	Daily, prior to sample analysis	Multicomponent standard	Response factor agreement within ± 30 % of three day rolling mean RFs for all components	Repeat calibration
		(2) Retention time check	Daily, prior to sample analyses	Multicomponent standard	None; will provide basis for comparison of FID/PID results to ECD results	None
		(3) Control sample analysis	Daily, prior to sample analyses	Sample gas	(1) Correct identification of all components (2) For 90 % of components, measured concentrations within ± 30 % of actual concentrations	Repeat control sample analysis
	ECD	(4) Duplicate analyses	Minimum of 10 % of samples (all duplicate samples analyzed in duplicate)	Sample gas	CV ≤ 20 % for ten major sample components	Repeat sample analysis
		(5) Blank analysis	Daily, prior to sample analyses	UHP air or N_2	Total ≤ 20 ppbv-C	(1) Clean system (2) Repeat blank analysis

[A] See Ref (10).

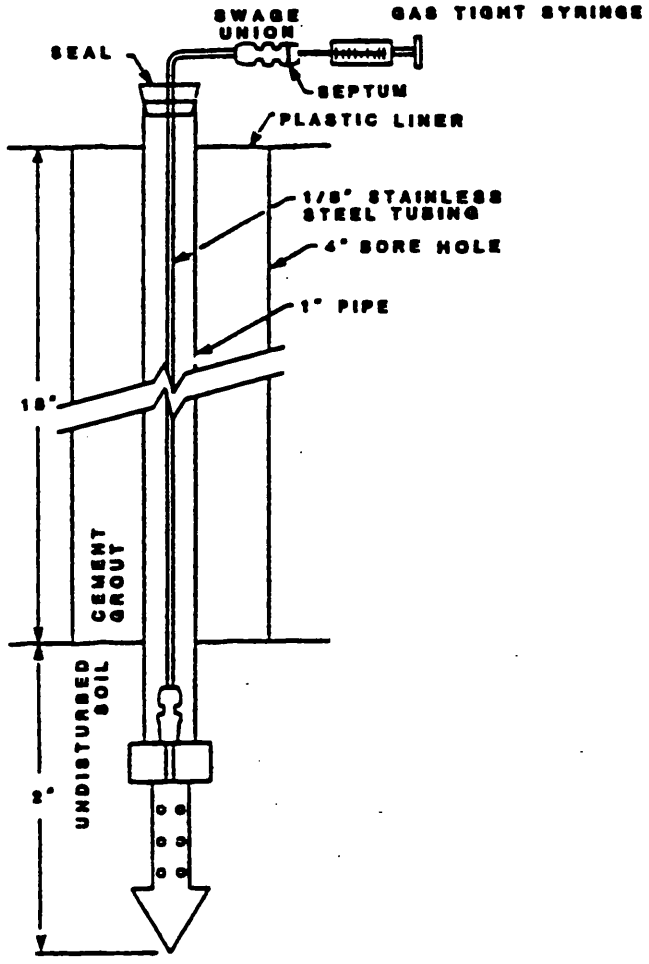
APPENDIX

(Nonmandatory Information)



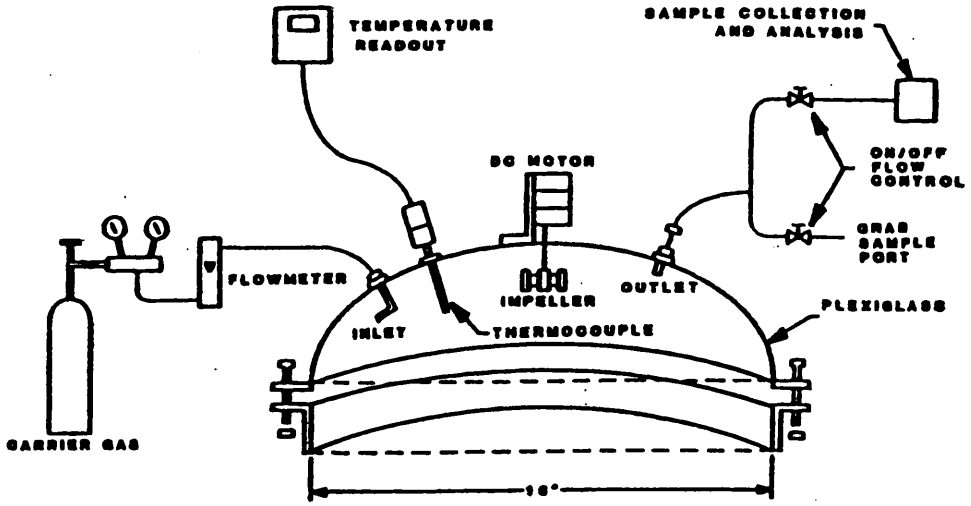
NOTE—The processes indicated by the soil gas monitoring method are partitioning, migration, emplacement and degradation. Partitioning represents a group of processes which control contaminant movement from one physical phase to another, these phases being liquid, free vapor, occluded vapor, solute and sorbed. Migration refers to contaminant movement over distance with any vertical, horizontal or temporal component. Emplacement refers to establishment of contaminant residence in any phase within any residence opportunity. Degradation is the process whereby contaminants are attenuated by oxidation or reduction in the vadose zone, either through biogenic or abiogenic processes. Soil gas monitoring measures the result of the interaction of these processes in a dynamic equilibrium.

FIG. X1.1 Arena of Soil Gas Monitoring



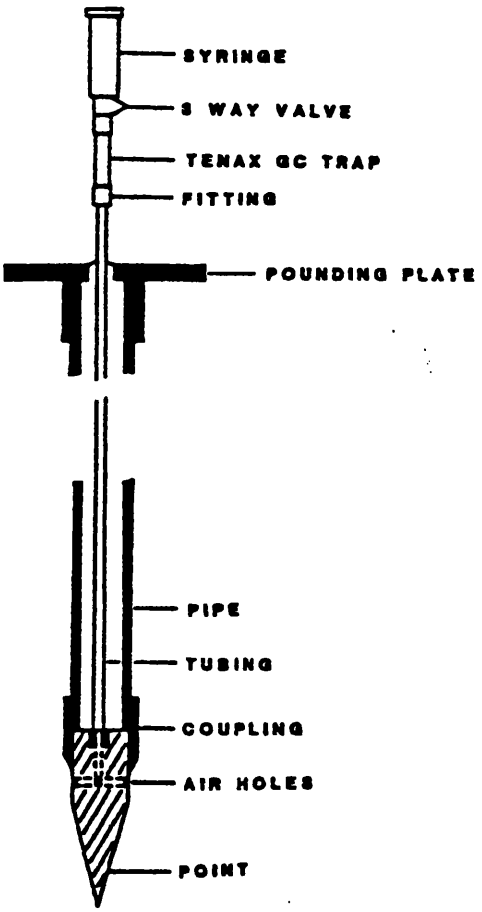
NOTE—Ground probe designed and used by Crow et al., 1985, from Ref (10).

FIG. X1.2 Example of Whole-Air Active Sampling System



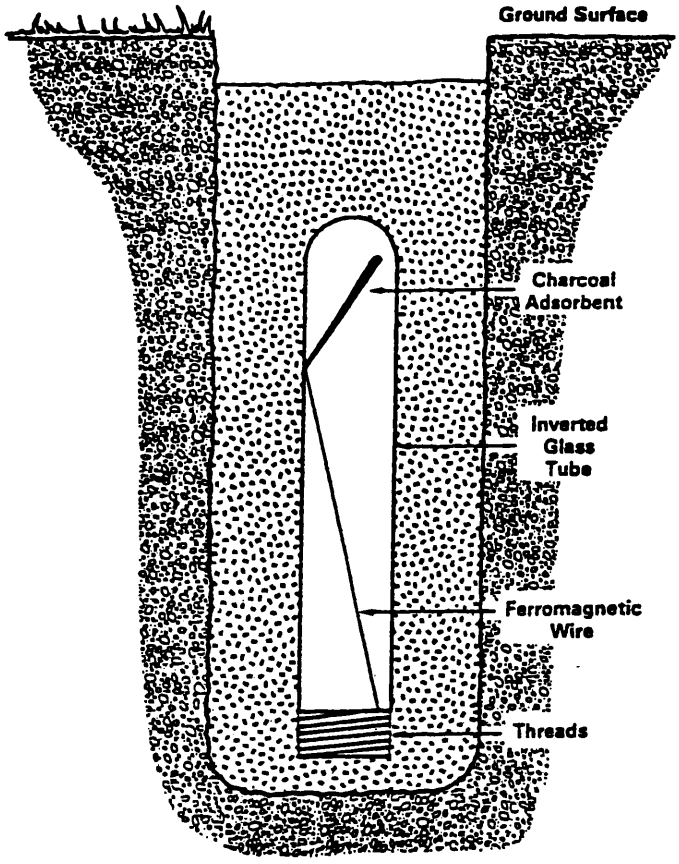
NOTE—Surface flux chamber and penpheral equipment after Eklund et al., 1984, from Ref (10).

FIG. X1.3 Example of Whole-Air Passive Sampling System



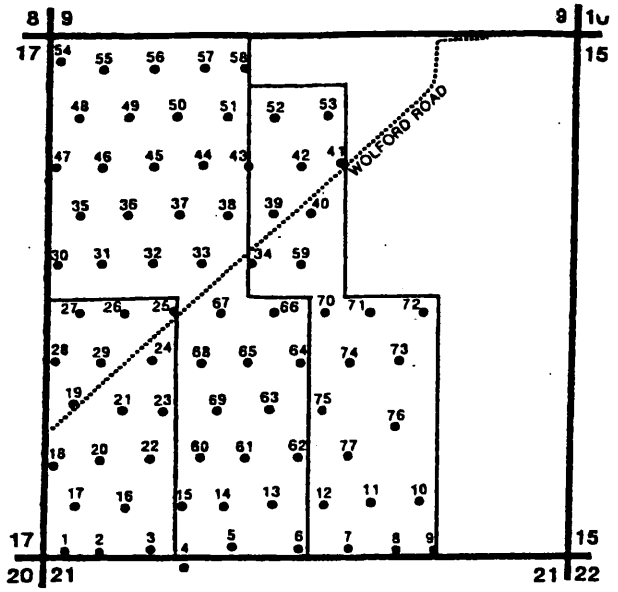
NOTE—Ground probe design used by Swallow and Gachwend, 1983, from Ref (10).

FIG. X1.4 Example of Sorbed Contaminant-Active System



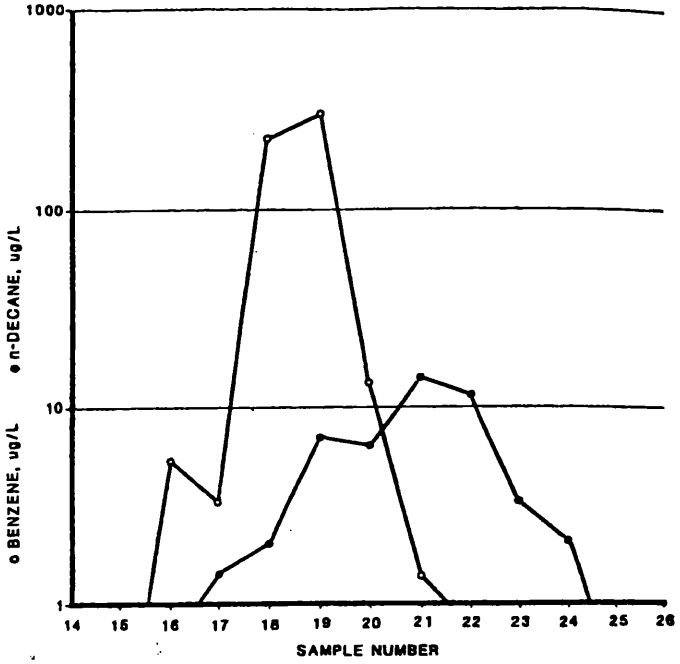
NOTE—Schematic diagram of emplacement of a sorbed contaminant-passive system (10).

FIG. X1.5 Example of Sorbed Contaminant-Passive System



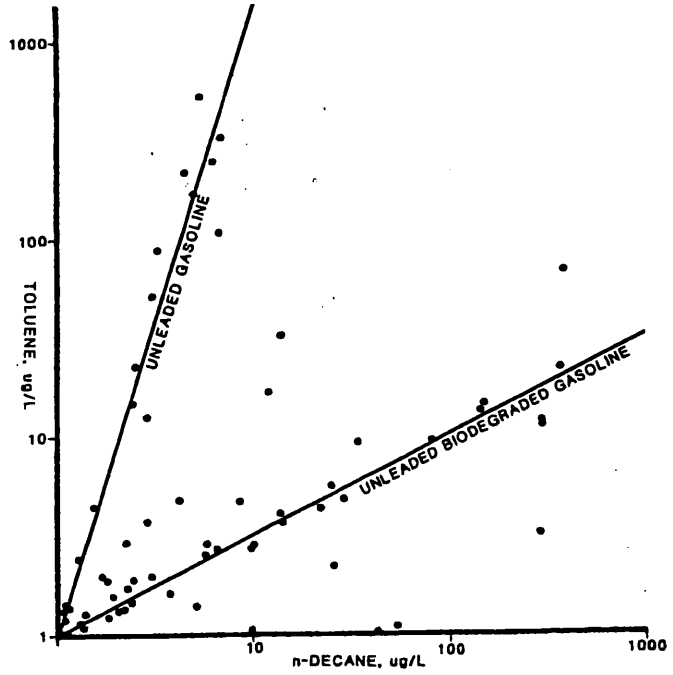
NOTE—In any application, soil gas monitoring can be performed over a wide range of spatial designs, including soil gas sampling in grid patterns at a single depth or multiple depths. This example illustrates a staggered grid pattern of samples recovered at a single depth.

FIG. X1.6 Typical Soil Gas Grid Array and Map Display



NOTE—Soil gas data from survey profiles displayed on an X – Y plot is an effective aid to data interpretation. This display is useful to examine the overall context for soil gas measurement data potentially indicating contamination. If the profile is displayed as a cross section through a grid pattern or as a linear array of sample points, the profile display can illustrate spatially significant groupings of data subpopulations.

FIG. X1.7 Typical Soil Gas Profile



NOTE—Bimodal populations of data that represent coincident contaminant occurrences (for example, soil gas contaminant vapors sourced from converging plumes of two different fuels or mixtures of gasoline and biodegraded gasoline) can be defined using compositional analyses. One technique of compositional analysis is cross-plotting as shown.

FIG. X1.8 Soil Gas Compositional Analysis by Cross Plot

Project # _____ Sample # _____
Sampled by: _____
Date Sampled: _____, 199_____ Time: _____ (AM/PM)
Sampling System (check one):
( ) Whole air-active approach
( ) Whole air-passive approach
( ) Sorbed contaminants-active approach
( ) Sorbed contaminants-passive approach
( ) Headspace or extraction approach
( ) Soil pore liquid headspace approach
Sample Type (check one):
( ) Direct field sample
( ) Field blank
( ) Travel blank
( ) Sample container blank
( ) Sample probe blank
( ) Sample replicate
Spiked? _____ with _____ cc of _____
Potential reaction products due to spiking: _____
System purge volume: _____ Volumes purged: _____ Sample volume: _____
Sorbent Device: Installed _____ (AM/PM), _____, 199_____
Recovered _____ (AM/PM), _____, 199_____
Sample container type: _____ Sample container #_____
Integral analyzer: _____ Detector: _____
Analyzer response: _____ (units) _____
Surface conditions (pavement, wet, frost, etc.) _____
Sample depth: _____ Sampling rate: _____
Sample horizon data-visual estimates:
Vadose zone make-up: ( ) Native soil+rock ( ) Fill ( ) Rock
Soil composition: Clay, _____%
Soil organic matter, _____%
Fine granular material, _____%
Coarse granular material, _____%
100 %
Moisture content of sampling horizon (qualitative):

	( ) Dry
( ) Very	( ) Damp
( ) Slightly	( ) Moist
	( ) Wet

Other characteristics of the sampling horizon:

( ) Free water present	( ) Probable connection to surface macropores
( ) Free product present	
( ) Contaminant odors	( ) Indurated
( ) Poor perm. to vapor	( ) Soil discoloration
( ) Near slope or vent	( ) _____

_____
Investigator Signature/Date

_____
Investigator Affiliation

FIG. X1.9 Suggested Soil Gas Sample Data Sheet

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Designation: D 5321 – 92

Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method[1]

This standard is issued under the fixed designation D 5321; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers a procedure for determining the shear resistance of a geosynthetic against soil, another geosynthetic, or a soil and geosynthetic in any combination.

1.1.1 The test method is intended to indicate the performance of the selected specimen by attempting to model certain field conditions.

1.2 The test method is applicable for all geosynthetics. Remolded or undisturbed soil samples can be used in the test device.

1.3 The test method is not suited for the development of exact stress-strain relationships within the test specimen due to the non-uniform distribution of shearing forces and displacement.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 653 Terminology Relating to Soil, Rock and Contained Fluids[2]

D 698 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb (2.49-kg) Rammer and 12-in. (304.8 mm) Drop[2]

D 1557 Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457-mm) Drop[2]

D 3080 Method for Direct Shear Test of Soils Under Consolidated Drained Conditions[2]

D 4354 Practice for Sampling of Geotextiles for Testing[2]

D 4439 Terminology for Geotextiles[2]

3. Terminology

3.1 *Definitions*—For definitions of terms relating to soil and rock, refer to Terminology D 653. For definitions of terms relating to geosynthetics, refer to Terminology D 4439.

3.2 *Descriptions of Terms Specific to This Standard:*

3.2.1 *adhesion, c_a (FL^{-2}), n*—the shearing resistance between soil and another material under zero externally applied pressure. **(D 653, D-18)**

3.2.2 *angle of friction, n*—(angle of friction between solid bodies) (degrees) the angle whose tangent is the ratio between the maximum value of the shear stress that resists slippage between two solid bodies at rest with respect to each other and the normal stress across the contact surface. **(D 653, D-18)**

3.2.3 *atmosphere for testing geosynthetics, n*—air maintained at a relative humidity of 65 ± 5 % and temperature of 21 ± 2°C (70 ± 4°F). **(D 4439)**

3.2.4 *coefficient of friction, n*—a constant proportionality factor, relating normal stress and the corresponding critical shear stress, at which sliding starts between two surfaces. **(D 653, D-18)**

3.2.5 *direct shear friction test, n*—for geosynthetics, a procedure in which the interface between a geosynthetic and any other surface, under a range of normal stresses specified by the user, is stressed to failure by the horizontal movement of one surface against the other.

3.2.6 *geosynthetic, n*—a planar synthetic product manufactured from polymeric material used with soil, rock, earth, or other geotechnical engineering-related material as an integral part of a man-made project, structure, or system. **(D 4439)**

4. Summary of Test Method

4.1 The coefficient of friction between a geosynthetic and soil, or between any geosynthetic combination selected by the user, is determined by placing the geosynthetic and one or more contact surfaces, such as soil, within a direct shear box. A constant normal compressive stress is applied to the specimen, and a tangential (shear) force is applied to the apparatus so that one section of the box moves in relation to the other section. The shear force is recorded as a function of the horizontal displacement of the moving section of the shear box. The test is performed for a minimum of three different normal stresses, selected by the user, to model appropriate field conditions. The peak (or alternatively, the residual) shear stresses recorded are plotted against the applied normal compressive stresses used for testing. The test data are generally represented by a best fit straight line whose slope is the coefficient of friction between the two materials where the shearing occurred. The y-intercept of the straight line is the adhesion.

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[1] This test method is under the jurisdiction of ASTM Committee D-35 on Geosynthetics and is the direct responsibility of Subcommittee D35.01 on Mechanical Properties.

Current edition approved Oct. 15, 1992. Published December 1992.

[2] *Annual Book of ASTM Standards*, Vol 04.08.

SOIL GAS SURVEY

Soil gas surveys are a field screening method typically used to determine the presence of volatile organic compounds in unsaturated, subsurface soils. The surveys provide real time data in a rapid and non-disruptive manner at less than half the cost of traditional soil sampling.

Soil gas sampling identifies the nature and concentration of compounds found in the pore space of soils through the use of field monitoring equipment. Volatile compounds present in the soil volatilize from the soil and water matrices into the interstitial pore spaces of the soil These volatilized gases are detected by soil gas sampling. The amount of VOCs in the soil gas phase is primarily dependent upon the partitioning coefficient between the aqueous phase and the vapor phase (Henry's Law constant), the soil phase and the vapor phase, soil type, concentration of contamination and sampling distance from the source of the concentration.

The objective of a soil gas survey is to delineate horizontal and vertical extent of VOC contamination in subsurface soils and help predict the future horizontal and vertical movement of VOC compounds. Data collected also provides necessary information regarding potential soil remediation.

SAMPLING PROCEDURE

Typically a grid is developed covering the investigation area. Site maps indicating potential underground areas of interest (such as buried tanks and pipes) are helpful in identifying sample locations. Soil gas samples are collected by driving 5 foot long, 5/8 inch diameter, hollow stainless steel soil gas sampling probes equipped with retractable sample points. Soil gas samples are collected through the retractable point at the desired depth.

Typically, and depending on soil types, a pilot hole will be drilled into the top 2 feet of soil to facilitate installation of soil gas sampling probes. Soil gas probes are placed into the pilot hole and, utilizing probe extensions, driven to the desired sampling depth. Compacted soils limit the attainable sample depth at 3-5 feet while less compact soils may be sampled at depths approaching 12-15 feet. The probes are driven into the soil utilizing a 30 pound electric hammer drill equipped with a custom made drive head that protects the probe from damage while driving.

After reaching the desired sampling depth, probes are extracted approximately 4 inches with a high lift utility jack in order to sufficiently open the retractable sampling point. The retractable sample points consist of a 4 inch length of 1/2 inch machined stainless steel pipe with several 1/16 inch holes drilled through the horizontal plane. A stainless steel mesh covers the length of 4 inch pipe to prevent soil particles from entering the pipe during sampling.

Sample depth measurements are recorded and a sampling port attached to the top of the soil gas probe. A static measurement of the soil gas, utilizing an Organic Vapor Monitor (OVM), present in the probe is conducted at this time. A portable electric vacuum pump is attached to the probe via the sample port and approximately 100-200 probe volumes (2.7-5.5 cubic feet) of soil gas is purged through the probe before a soil gas sample is obtained. The discharge from the vacuum pump is monitored using an OVM. The dynamic purging of the soil gas probe produces a cone of influence encompassing soil void areas some distance, depending on soil type, from the actual point of probe location, allowing for the determination of VOCs in an extended subsurface area. Beginning, maximum and ending applied vacuum and OVM readings are recorded.

When purging is completed, soil gas samples are collected from the sample port using 1 ml syringes for immediate injection and analysis on a portable Photovac gas chromatograph and the probe is removed from the ground utilizing the utility jack. The Photovac is equipped with a photoionization detector (PID) and is capable of detecting VOCs in air at concentrations as low as 50 ppbv. It is very mobile and may be set up and operated in the field.

Results from the soil gas sampling are used to develop VOC contours illustrating areas of varying VOC concentrations to determine the extent of VOC contamination in the subsurface soils and help in the placement of soil borings and groundwater monitoring wells to further identify the extent of subsurface contamination.

CDM Camp Dresser & McKee

T.F. Green Airport
Warwick, Rhode Island

Preliminary Subsurface Investigation and Geotechnical Feasibility Study

January 19, 2001

Report

Contents

Figures

Tables

Section 1
Introduction

1.1 General

This study involves evaluating the feasibility of constructing cargo buildings, concrete aprons, and a taxiway extending from Runway 34-16 as part of development of the T.F. Green Airport in Warwick, Rhode Island. The cargo building locations will be over an existing landfill located south of the existing runway. **Figure 1-1** shows the location of the site and the surrounding area. A limited environmental site investigation report was submitted to Rhode Island Airport Corporation (RIAC) under separate cover.

1.2 Proposed Site Improvements

For purposes of this study, the proposed site improvements are assumed to consist of the following:

- Four cargo facility buildings, each approximately 100 feet by 300 feet in plan dimensions. The cargo buildings are proposed to be suitable for medium to heavy warehouse loading, which is assumed to be equivalent to approximately 500 pounds per square foot (psf) average building loading;

- Concrete taxiway and aprons are proposed between the existing runway and the proposed buildings. Up to three 757 airplanes are proposed to be parked at each building. The average loading on the taxiway and/or aprons is assumed to be equivalent to approximately 500 psf.

- Regrading and the placement of a landfill cover is proposed. The center of the landfill is proposed to be cut between 3 feet and 20 feet to reach the desired grade. Perimeter areas of the landfill are proposed to be filled between 6 and 14 feet to reach the desired grade.

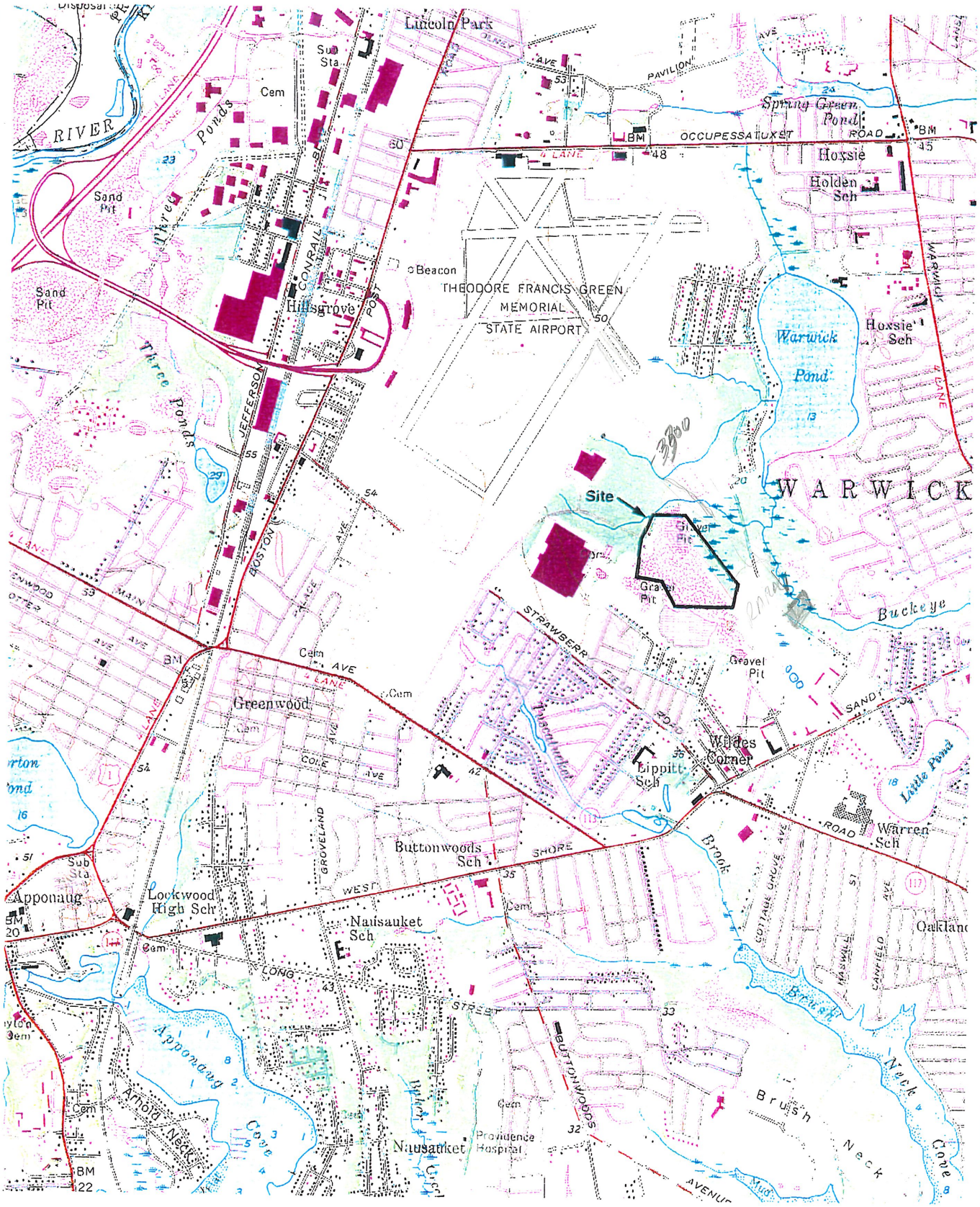
Final site improvements may vary from those presented herein.

1.3 Elevation Datum

Elevations noted herein are referenced to the National Geodetic Vertical Datum (NGVD) 1929.

1.4 Purpose and Scope

The purpose of this study was to investigate subsurface conditions at the location of the proposed airport expansion and to provide geotechnical engineering recommendations to assess the feasibility of constructing the proposed buildings and site improvements. Specifically, the scope of the work included the following:



Base Map: USGS Quad - East
Greenwich, RI - 1975
Scale 1" = 2083'

CDM Camp Dresser & McKee Inc

Figure 1-1
Site Locus

- excavating test pits at 23 locations around the perimeter of the landfill to delineate the extent of landfill waste;
- advancing eight (8) test borings within the limits of the landfill to investigate subsurface conditions and obtain soil samples for physical laboratory testing;
- installing monitoring wells in six (6) of the completed test borings;
- conducting laboratory tests to assist with classification and estimating engineering properties of the soil encountered;
- analyzing foundation system alternatives and ground improvement techniques that might be required;
- providing a conceptual-level cost comparison for the foundation system alternatives and/or ground improvement techniques analyzed;
- making recommendations for additional investigations and engineering evaluations for final design of the proposed facilities; and
- preparing this engineering report which presents CDM's recommendations, including data collected as part of the investigation.

1.5 Report Limitations

The recommendations contained in this report have been prepared for the proposed cargo facilities at the T.F. Green Airport in Warwick, Rhode Island as understood at this time and described in this report. This report has been prepared in accordance with generally accepted engineering practices. No other warranty, express or implied, is made. In the event that changes in the design or location of the site improvements occur, the conclusions and recommendations contained herein should not be considered valid unless verified in writing by CDM.

Section 2
Site and Subsurface Conditions

2.1 Existing Conditions

The site is the former Truk-Away Landfill. The landfill covers approximately 34 acres. The landfill area is bounded to the west by industrial property, to the north by Runway 34-16, to the east by wetlands at the end of the runway and a former City of Warwick dump, and to the south by residential property.

The landfill surface is vegetated with low growing shrubs and grasses and occasional stands of small trees. Ground surface at the central part of the landfill is relatively flat and at about El. 42. The perimeter of the landfill is approximately 10 to 30 feet lower than the center. Side slopes from the center to the perimeter of the landfill are gradual (generally 4H:1V or flatter).

Correspondence that were made available to CDM from Truk-Away and Sanitas Waste Disposal to the Division of Solid Waste Management during the 1970's suggests that the site is underlain by extensive peat deposits. The waste materials placed in the landfill are not well documented but reference is made to "rubbish and construction demolition debris." There is no mention of hazardous material disposal in the information made available to CDM.

2.2 Subsurface Investigations

2.2.1 Test Pits

To evaluate the limits of waste at the landfill, TMC Services, Inc. of Bellingham, Massachusetts excavated test pits at 23 perimeter locations between October 18 and 19, 2000. A CAT 426B backhoe and a CAT 315B excavator were used to make the excavations. At several test pit locations, multiple test pits were excavated for the purpose of evaluating the approximate extent of the waste. Up to four test pits were excavated at these locations. A total of 38 test pits were excavated.

Table 2-1 presents a summary of the conditions encountered in the test pits. The approximate locations of the test pits are shown on **Figure 2-1**. The locations of the test pits shown on the plan indicate the limit of waste found within the boundaries of the site. At several locations however, the waste extended beyond the limits of the site boundaries, particularly in the southern and western portions of the site.

Test pit depths varied from 0.5 feet to 12 feet below ground surface. A CDM representative observed the test pit excavations in the field. Test pit locations were field surveyed after completion. Upon completion, the test pits were backfilled with the excavated material. Waste material observed in the test pits included plastic, paper, glass, wood, rubber, clothing and brick material.

TABLE 2-1

SUMMARY OF TEST PIT EXPLORATIONS

CARGO FACILITIES-TF GREEN AIRPORT
RHODE ISLAND AIRPORT CORPORATION
WARWICK, RHODE ISLAND

Test Pit No.	Approximate Exploration Depth (ft.)	Strata Thickness (ft)				Depth to Water (ft.)	Description of Waste
		Cover Material	Waste	Peat	Sand & Gravel		
1	3	0.5	>2.5	NE	NE	NE	Silt and sand, some plastic, rebar
1A	6	0.5	>5.5	NE	NE	NE	Silt and sand, some plastic
1B	3	0.5	>2	NE	NE	NE	Silt and sand, some plastic
1C	7	NE	NE	NE	7	NE	N/A
2	5	0.5	>4.5	NE	NE	NE	Silt and sand, some plastic and aluminum
2A	3	NE	>3	NE	NE	NE	Plastic, metal, glass, little grey silt, sand
3	2	NE	>2	NE	NE	NE	Plastic, paper, glass, wood, little grey silt, sand
4	4	NE	NE	NE	4	NE	N/A
4A	1	0.5	>.5	NE	NE	NE	Sand & gravel, some plastic, glass
5	3	NE	>3	NE	NE	NE	Wood, metal, clothing, little grey silt and sand
6	4	0.5	>4.5	NE	NE	NE	Sand & gravel, little metal, wood
6A	5	4.5	>.5	NE	NE	NE	Clothing, sticky material
7	4	1	>2.5	NE	NE	NE	Plastic & clothing, little black cohesive peat
8	2	0.3	>1.7	NE	NE	NE	Black peat & plastic, rubber, and paint
9	2	0.3	>1.7	NE	NE	NE	Sand & gravel, some metal, plastic, clothing
9A	2	0.3	>1.7	NE	NE	NE	Sand & gravel, some plastic
10	1	NE	>1	NE	NE	NE	Sand, gravel & plastic
11	1	0.1	>0.9	NE	NE	NE	Metal & plastic
12	10	NE	NE	NE	>10	5.0	N/A
12A	1	NE	>.5	NE	NE	NE	Plastic
13	5	NE	NE	NE	>5	NE	N/A
13A	2	0.5	>1.5	NE	NE	NE	Sand & gravel, some plastic
14	2	0.5	>1.5	NE	NE	NE	Black peat, plastic & rubber
15	1	NE	>1	NE	NE	NE	Plastic
15A	5	NE	NE	>5	NE	NE	N/A
16	1	NE	>1	NE	NE	NE	Clothing & plastic
16A	12	NE	NE	10	>2	NE	N/A
17	2	0.1	>1.9	NE	NE	NE	Plastic & trash
17A	12	NE	NE	>12	NE	NE	N/A
18	4	NE	>4	NE	NE	NE	Metal & plastic
18A	12	NE	NE	NE	>12	NE	N/A
19	12	NE	>12	NE	NE	NE	Sand & gravel, little aluminum, plastic
20	6	0.1	2	NE	>3.9	NE	Metal, brick, plastic
21	5	NE	NE	NE	>5	NE	N/A
21A	3	NE	3	NE	NE	NE	Plastic
22	3	NE	3	NE	NE	NE	Plastic
22A	12	NE	NE	NE	>12	NE	N/A
23	5	1	4	NE	NE	NE	Plastic, wood, metal

Abbreviations:

NE Indicates strata or groundwater not encountered.
N/A Not applicable
> Indicates strata not fully penetrated.

TABLE 2-2

SUMMARY OF TEST BORING EXPLORATIONS

CARGO FACILITIES, T.F GREEN AIRPORT
RHODE ISLAND AIRPORT CORPORATION
WARWICK, RHODE ISLAND

Exploration No.	Approximate Ground Surface El.	Exploration Depth (ft.)	Strata Thickness (ft.)				Depth to Groundwater at time of drilling (6) (ft.)	Depth to Groundwater on 12/13/00 (6) (ft.)
			Cover Material	Waste	Peat	Sand & Gravel		
MW-1	29.5	52	2	18	NE	>32	14.5	13.2
SB-2	41.8	62	2	28	NE	>32	25.0	N/A
MW-3	43.3	77	2	38 (2)	4	>33	27.0	19.1
SB-4	17.0	62	NE	30 (3)	NE	>32	2.5	N/A
MW-5	28.5	72	1	39 (4)	NE	>32	13.5	10.6
MW-6	31.0	72	2	38 (5)	NE	>42	20.0	12.9
MW-7	19.0	32	NE	NE	NE	>32	6.0	3.1
MW-8	31.5	62	5	25	NE	>32	16.0	14.9

Notes:

1. Elevations are in feet and refer to NGVD 1929.
2. Lower 5 ft. of waste mixed with peat for full thickness.
3. The waste is mixed with peat.
4. Waste mixed with peat for 10-ft. thickness over waste mixed with sand for 5-ft. thickness.
5. Waste mixed with peat for 2-ft. thickness over waste mixed with sand for 8-ft. thickness.
6. Groundwater depths are relative to the existing ground surface.

Abbreviations:

NE Indicates strata not encountered
N/A Not Applicable or information is not available.
> Indicates strata not fully penetrated

2.2.2 Test Borings

Eight test borings (MW-1, SB-2, MW-3, SB-4, MW-5, MW-6, MW-7, MW-8) were drilled within the limits of the site to investigate the subsurface conditions. The test borings were drilled by New Hampshire Boring Inc. of Derry, New Hampshire between November 6 and 22, 2000. The test borings were drilled using an all-terrain vehicle (ATV) drill rig. All test borings fully penetrated the existing landfill waste material and were terminated approximately 30 feet into the naturally deposited, inorganic sand and gravel stratum underlying the site. Test boring depths ranged from 32 feet to 77 feet below the existing ground surface.

Split-spoon sampling was conducted at five-foot intervals at each boring location in accordance with ASTM D1586 (2-inch-diameter sampler driven 24 inches by blows from a 140-pound hammer falling freely for a 30-inch drop). The number of blows required to drive the sampler each 6-inch increment was recorded and the Standard Penetration Resistance (N-value) was determined as the sum of the blows over the middle 12 inches of penetration. Representative soil samples were taken from each split-spoon collected in the naturally deposited soils and stored in jars for later review and laboratory testing. Samples of the waste material were collected in the field for classification only. No samples of the waste were collected for later review and geotechnical laboratory testing.

Test borings, where monitoring wells were not installed, were backfilled with bentonite grout to an elevation approximately 5 feet above the bottom of the waste material. The remainder of the test borings were backfilled with waste and spoil material. Material not used to backfill the hole was drummed for later disposal by others.

A CDM representative observed the test borings in the field and test borings were located by field survey. Elevations were estimated relative to available site topography. Logs of the test borings, prepared by the driller and reviewed by CDM, are included in Appendix A. Figure 2-1 shows the approximate locations of the explorations.

2.3 Monitoring Well Installation

Six monitoring wells were installed in completed boreholes (MW-1, MW-3, MW-5, MW-6, MW-7, MW-8) as part of the subsurface investigation. The monitoring wells were installed at depths ranging from 13 feet to 34 feet below existing ground surface. Well construction consisted of installing a 10-foot screen with the bottom of the screen located approximately 7 feet below the measured groundwater level.

The monitoring wells were backfilled with bentonite to the bottom of the screen. The annulus around the well screen was backfilled with sandpack to a level approximately three feet above the top of the screen interval. Sandpack was allowed to settle while slowly removing downhole tools. The remaining length of borehole was backfilled around the well riser pipe with bentonite. The monitoring well screen used was

constructed of 2-inch-diameter PVC with 0.020-inch machine-slots. The monitoring well riser pipe used was constructed of 2-inch-diamter threaded PVC. A road box was installed at each well location and extends approximately 2.5 feet above ground surface.

2.4 Subsurface Conditions

2.4.1Subsurface Soil Conditions

Subsurface soil conditions were interpreted from the test borings conducted at the site and our understanding of the landfill history and local geology. The test pits were not used to interpret the subsurface conditions but were used only to estimate the extent of the waste at the site. Test borings drilled within the landfill typically encountered cover soil and waste overlying naturally deposited peat, sand and gravel.

Landfill cover material, consisting of loose to medium dense, tan, fine to coarse SAND with varying amounts of gravel and silt, was encountered in all of the borings taken within the limits of the landfill. Cover material was not encountered in perimeter test borings SB-4 and MW-7. Cover thickness ranged from 1 to 5 feet with SPT N-values ranging from 4 to 29 blows per foot (bl/ft).

Waste was encountered in all of the test borings at the site except test boring MW-7. Waste material typically consisted of loose to very dense black wood, paper, glass, cloth, metal, wire and plastic. Waste thickness ranged from 15 to 33 feet with N-values ranging from 4 bl/ft to 100 blows for 3 inches.

In test borings MW-3, SB-4, MW-5, and MW-6 the lower portion of the waste was mixed with the underlying peat soils for 5 to 30 feet in thickness. Samples taken within this zone consisted of dark brown fibrous PEAT with varying amounts of waste material, silt, and sand. Typical N-values in the peat and waste mix ranged from weight of rod (WOR) to 21 bl/ft. In test borings MW-5 and MW-6, the lower portion of the waste was mixed with sand for approximately 5 to 8 feet. Samples taken within this zone consisted of loose to medium dense, sand, trace metal. Typical N values in the waste and sand mix ranged from weight of rod (WOR) to 10 bl/ft.

In test boring MW-3, an additional 3 feet of PEAT that did not contain waste was encountered. Peat soils were not encountered in test borings MW-1, SB-2, and MW-7. These test borings are located within the footprint of Building No. 1 and Building No. 2 in the northern and western sections of the landfill, which are farthest from the wetlands.

The natural inorganic soils encountered below the waste and peat deposit, in all of the test borings, typically consisted of loose to dense, gray, fine to coarse SAND and GRAVEL, with varying amounts of silt. SPT N-values for this layer varied between 3 and 35 bl/ft. All test borings were terminated at least 30 feet into this layer.

Table 2-2 presents a summary of subsurface explorations. **Figure 2-2** shows a geologic cross section of the subsurface conditions encountered in the test borings at the site.

2.4.2Groundwater Levels

Groundwater levels in each test boring were estimated based on the conditions of the samples obtained and by the observed water levels within the borehole at the time of drilling. Observed groundwater level ranged from 2.5 ft. to 27 ft. below existing ground surface, which corresponds to approximately El. 16.8 to El. 11.0. Monitoring wells installed at the site were developed and water levels were recorded following the subsurface investigation. Water levels recorded in the monitoring wells on December 13, 2000 ranged from 4.7 to 22 feet below ground surface, which corresponds to approximately El. 24.2 to El. 15.9.

Table 2-2 presents groundwater levels measured in the boreholes at the time of drilling and recorded in the monitoring wells on December 13, 2000. In the areas of proposed building construction, depth to groundwater was observed at approximately 22 feet below ground surface.

Water levels measured in the explorations should not necessarily be considered to represent stabilized groundwater levels. In addition, water levels are expected to fluctuate with season, temperature, climate, construction in the area, and other factors. Actual conditions during construction may be different from those observed at the time of the explorations.

2.4.3Variation in Subsurface Conditions

Interpretation of general subsurface conditions presented herein is based on waste, soil, and groundwater conditions observed at the test boring locations. However, subsurface conditions may vary between exploration locations. If conditions are found to be different than assumed, recommendations contained in this report should be reevaluated by CDM and confirmed in writing.

2.5 Laboratory Testing

Laboratory grain size analyses were performed on selected split spoon samples obtained from the test borings. Gradation analyses were performed in accordance with ASTM D422 on seven representative samples of the sand and gravel deposit collected from test borings MW-1, SB-2, SB-4, MW-5, MW-6, MW-7, MW-8. The purpose of the testing was to assist with soil classification.

Laboratory tests were performed on selected peat samples collected at the site to determine organic content, water content, and plasticity. Atterberg limit (ASTM D4318) and organic content (ASTM D2974) tests were performed on peat samples recovered from test boring MW-3 and SB-4. The results of the laboratory tests are included in Appendix B.

2.6 Geotechnical Characteristics of the Peat Deposit

Peat is typically a fibrous aggregate of decayed and decaying vegetation matter and soil. Peat deposits are characterized as having high organic content, high void ratios and water contents, and, usually, high compressibility and low strength. However, the properties of peat can vary substantially depending on age, deposition, water content, and previous loading as well as many other factors.

The following are the laboratory test results on peat samples collected at the site and a comparison to typical ranges for organic soils:

Parameter	Range for Peat Soils at T.F. Green Airport Landfill	Typical Range for Organic Soils [1]
Organic Content (% by weight) – 61.1%	13.1 – 61.1%	5 – 100%
Water Content (% by weight)	327.6 – 797.9%	30 – 1200%
Liquid Limit (LL)	254 – 645	30 – 900%
Plasticity Index (PI)	76 – 204	Non-plastic - 500

[1] Reference: Naval Facilities Engineering Command, Design Manual 7.01 Soil Mechanics

At this time, limited information is available on the peat deposits at the site. However, based on the test results, the peat deposits at the site appear to have relatively high organic content and water content, and should be expected to experience significant consolidation and settlement when loaded. In addition, the high organic content of the peat should be expected to result in long-term creep settlement of structures placed over the peat as the organic matter decays over time.

The peat deposits located below the landfill and around the immediate perimeter of the landfill, as mentioned previously, are typically mixed with landfill waste material. Mixing of the waste with the peat has likely had an effect on the properties of the peat. In addition, the peat located below the limits of the landfill is likely to have already undergone some compression due to the weight of the overlying waste. However, there are areas beyond the perimeter of the landfill where the proposed taxiways are to be constructed where thick peat deposits are expected. These deposits are expected to be highly compressible. Additional subsurface investigations of the peat should be conducted prior to final design.

2.7 Geotechnical Characteristics of the Waste Material

The geotechnical characteristics of municipal solid waste material depends greatly on several factors including: composition of the waste material, method of placement, organic content, moisture content, and age. In addition, characteristics of waste material typically vary within broad ranges, can change significantly with time, and are not easily measured using standard field investigation and sampling techniques. Regardless of the difficulty in assessing accurate waste characteristics, some general trends have been observed for municipal solid waste (MSW) material.

- MSW is typically lighter than mineral soil deposits. Unit weight of MSW typically ranges between 40 to 90 pounds per cubic foot (pcf).

- MSW is typically compressible, however, the degree of compressibility can vary greatly. Compression occurs both immediately upon loading, which is often the result of distortion, bending, crushing, and reorientation of the materials, and for a long period of time after loading, which is often the result of biological decomposition of the organic component of the waste, corrosion, oxidation, and combustion processes. Based on the information obtained as part of this study, the compressibility of the waste cannot be accurately estimated. However, for purposes of this study, we have assumed that the waste at the site is moderately compressible.

- The strength of MSW varies greatly but is typically primarily frictional in nature with some apparent cohesion. Observed strength is often dependent on the degree of interlocking or overlapping of the waste material. SPT N-values recorded in the waste at the site indicate that it is loose to medium dense and thus, for purposes of this study, is expected to provide low to moderate strength characteristics.

At this time, only very limited information on the geotechnical characteristics of the waste at the site is available. However, based on the existing information made available to us about the landfill construction and composition and the waste material observed in the test borings, the waste at the site should be expected to be moderately compressive under immediate loading with the potential for long-term creep settlement of structures placed over the waste. Additional subsurface investigations of the waste material should be conducted prior to final design.

Section 3
Geotechnical Engineering Evaluation and Preliminary Design Recommendations

3.1 General

This section describes our geotechnical engineering evaluation of the project site and our preliminary design recommendations for foundation support of the proposed site improvements including the taxiways, aprons, and cargo buildings. These recommendations should be used only to assess the feasibility of constructing the proposed facilities at the site and not for final design.

3.2 Foundation Support

The existing waste and peat soils are not considered suitable for foundation support of the proposed taxiways, aprons, or structures. These strata are highly compressible and lack sufficient strength to adequately support the proposed site improvements without excessive post-construction settlement. Total post-construction settlement in these strata is estimated to be in the order of 2 feet to 6 feet as a result of the added load from the proposed site improvements. This estimate of total settlement includes both primary and long-term settlement. Primary settlement is a combination of immediate and consolidation settlement that typically occurs relatively quickly after a load is added in these types of materials, i.e., waste and peat. Long-term settlement, or creep settlement, occurs for many years after primary settlement is complete and under a constant load.

Several options are available to reduce post-construction settlement. The waste and peat could be removed from within the limits of the proposed site improvements and replaced with granular fill. However, due to the expected large volume of waste and peat and high cost, this option is not recommended.

Ground improvement techniques may be used to improve the performance of the underlying materials and reduce settlement. Alternatively, the structures can be supported on deep foundations that extend through the waste and peat and into the underlying sand and gravel stratum.

3.2.1 Ground Improvement

Ground improvement techniques have been used in the U.S. for many years as a means to increase density, improve strength, reduce compressibility and/or permeability, increase bearing capacity, and reduce post-construction settlement of problematic soil deposits. Two methods of ground improvement that are considered applicable to improving the waste and/or peat soils at the site include soil preloading and deep dynamic compaction. The following is a brief description of each method, it's application to the project, and a discussion of relative costs.

3.2.1.1 Soil Preloading

Soil preloading consists of temporarily placing excess fill in the area of future construction and over a compressible layer so as to cause consolidation settlement to occur prior to construction rather than after construction. Once the layer has consolidated sufficiently, the excess fill is removed. The amount of excess fill required and duration of a preloading program are dependent on the type and thickness of material that is being preloaded as well as the foundation loading and tolerable settlement of the proposed permanent structures. Soil preloading is considered appropriate for portions of the site that are primarily underlain by peat soil rather than primarily waste material. The southern and eastern portion of the site appears to be primarily underlain by peat deposits of varying thicknesses.

We estimate that a preload program should consist of at least 10 feet of excess fill placed over the area of the proposed site improvements for approximately 6 to 36 months. After removal of the excess fill, the proposed site improvements are estimated to experience up to 6-in. of post-construction primary (consolidation) settlement due to the long term consolidation of the peat soils.

Although a preload program will help limit post-construction consolidation settlement, long-term creep settlement will not be mitigated. Organic soils with a high organic content, such as peat, should be expected to experience significant long-term creep settlement. The amount of long-term settlement is dependent on the thickness and creep characteristics of the underlying material as well as time. Based on the limited information available as part of this study, we estimate that the long-term creep settlement of the peat soils at the site will be about 1 foot to 2 feet over approximately 30 years.

The cost of a preload program is estimated to be approximately $15/cy of excess material placed and removed plus approximately $10,000 for installation and monitoring of settlement points which are used to observe and evaluate the performance of the preload program. Therefore, a preload program at the site is estimated to cost about $250,000 per acre plus survey costs. The proposed cargo buildings, aprons, and taxiways will comprise an estimated 20 acres, of which approximately 10 acres is primarily underlain by peat deposits and would be consolidated using preloading. Therefore, this option could cost roughly 2.5 million dollars. The cost of a preload program could be reduced by reducing the amount of excess fill placed, however, the duration of the program would need to be lengthened to allow for consolidation to occur.

It should be noted that our evaluation of a preload program is based on limited subsurface information. Additional subsurface investigations and laboratory testing to determine the consolidation characteristics of the in-situ materials is required prior to final design of a preload program.

3.2.1.2 Deep Dynamic Compaction

Deep dynamic compaction (DDC) is a ground improvement technique that consists of repeated tamping of the ground surface by dropping heavy steel or concrete weights. Typically the weights are about 6 to 20 tons and are dropped in a grid pattern by a crane from various heights depending on the amount of energy required. Dropping the weights produces shock waves that propagate through the underlying material that consolidates the material resulting in reduced void space, increased density and reduced long-term settlement of the underlying material. Larger weights and/or higher drop heights are required to treat thick deposits.

DDC is most effective on material that is above the water table and primarily granular in nature. The presence of groundwater and high fines content of the material tend to dampen the impact of DDC. DDC is not considered suitable for treatment of peat soils.

Once compacted, volume change of the underlying material of about 5 to 10 percent can be achieved for older landfills and up to about 25 percent for younger landfills. The increase in volume change for younger landfills, i.e., landfills which are still actively undergoing degradation, is thought to represent that portion of settlement that occurred previously in the older, now less active, landfills. The amount of volume change resulting from DDC is estimated by measuring how much the ground surface is lowered, i.e., crater depth. If insufficient volume change is initially achieved, repeated drops at one location may be required.

Light-weight structures constructed on top of DDC waste at other landfill sites have been reported to have experienced post construction settlement in the range of 0.25 percent of the underlying consolidated waste thickness (Ref. Lukas and Seiler, 1994). For purposes of this study, we estimate that the medium-weight to heavy-weight cargo facilities proposed at the site may experience up to approximately 12-in. of post construction primary settlement after DDC treatment. However, settlement estimates of DDC-treated waste should be made based on the characteristics of the site specific waste. Thus, a geotechnical subsurface investigation program is required after the DDC program is completed.

It should be noted that DDC-treated waste is still expected to experience some long-term creep settlement. The amount of creep settlement is dependent on the age of the waste and the amount of degradation that has occurred previously. For purposes of this study, we estimate that up to 1 foot to 2 feet of post construction long-term creep settlement may occur at the site after DDC treatment.

We estimate that DDC will cost about $1.50 to $2.00 per square foot (sf) of treated area or about $65,000 to $87,000 per treated acre. The proposed cargo buildings ramp area and taxiway will comprise an estimated 20 acres, of which approximately 10 acres is primarily underlain by waste and could be consolidated using DDC. Therefore, this option would cost roughly $650,000 to $870,000. This estimate does not include the cost of importing fill soils to the site to make up the volume loss, i.e., surface settlement, associated with DDC.

3.2.2 Deep Foundations

Deep foundations, consisting of driven or drilled-in piles, can be used to support the proposed cargo facilities. Supporting the taxiway and aprons on deep foundations is not considered cost effective. We recommend that other methods be used to limit post construction settlement of slabs-on-grade, taxiways, and aprons. Deep foundations used to support buildings should extend through the waste and peat soils and bear in the underlying sand and gravel deposit. However, installing piles through the waste may be difficult due to the potential to encounter obstructions. Installation of drilled-in piles may accommodate obstructions somewhat better since the obstruction may be able to be removed using the drilling equipment.

Drilled-in piles should be designed to develop capacity as friction in the sand and gravel deposit with an allowable adhesion value of 500 psf. Downdrag loads on the piles from ongoing settlement of the waste or peat should be considered in the design. Downdrag loads should be expected to be large. Settlement of structures supported on deep foundations is estimated to be less than one inch with no long-term creep settlement.

The lowest level floor slabs can be constructed as structural slabs that are supported on deep foundations. Alternatively, the slabs can be constructed as slabs-on-grade provided the slabs are separated from the portion of the building supported on deep foundations and can tolerate both primary and long-term settlement of the underlying waste and/or peat. Since settlement of slabs-on-grade, without DDC or preloading, are estimated to be excessive, we do not recommend that building slabs be supported on grade.

The cost to install drilled-in piles will depend on the type, size, and capacity of the pile required. In addition, obstructions encountered during installation could significantly impact costs. For purposes of cost estimating, we recommend that a cost of $5,000 per 40-ton pile be used. Provided the pile capacity does not exceed 40 tons per pile, no load test will be required. For budgeting purposes, a mobilization cost of approximately $10,000 should be assumed. We anticipate that approximately 200 piles per building will be required which includes a structural slab at each building. This option would cost approximately 4 million dollars.

3.3 Preliminary Geotechnical Recommendations

Based on our understanding of the proposed site development, we recommend that the new cargo buildings, aprons, and portions of the taxiways be constructed following DDC treatment of the waste material and soil preloading of the peat deposit. DDC appears to be the most cost effective treatment of the waste based on the existing subsurface conditions and the proposed construction. In addition, since this area of the landfill will be cut to reach proposed grade, it is additionally recommended that DDC be conducted prior to the proposed cutting in order to reduce the required amount of site regrading.

Soil preloading should be used in conjunction with the planned filling to reach proposed grades. Approximately 6 to 20 feet of fill is proposed around the perimeter of the landfill which is where primarily peat was encountered and where the taxiways will be constructed. Site filling in these areas can be used as part of the preload program. Since it has been estimated that between 6 and 36 months will be required to allow the peat to adequately consolidate, we recommend that placement of the fill be done as early as possible.

Deep foundations, although technically feasible, are not recommended for support of the buildings at this time due to the anticipated high costs of construction. Use of deep foundations would be limited to the buildings only and additional costs would be incurred to treat the remainder of the site, i.e. aprons and taxiways. Since it is likely that the proposed buildings can be designed to withstand some settlement it does appear to be cost effective to treat the buildings separately and require additional treatment for the taxiways and aprons. As such, we recommend that the building façade be made of materials that will not as readily show the effects of settlement. A steel façade is expected to be more settlement tolerable than brick or concrete block. Regular maintenance of the buildings, aprons and taxiways should be expected to combat the effects of settlement.

Refer to **Table 3-1** for a summary of foundation alternatives.

3.4 Recommendations for Future Investigations

Prior to final design, we recommend that a thorough geotechnical subsurface investigation and laboratory testing program be conducted at the site. The program should be designed to supplement the information gathered as part of this study. Further characterization and laboratory testing of the waste and peat soils is required prior to final design.

3.4.1 Additional Test Borings

At the final location of the proposed cargo buildings, we recommend that up to 6 test borings be drilled within the footprint of each structure. If DDC or soil preloading alternatives are utilized, test borings should extend approximately 10 feet into the natural inorganic sand and gravel deposit underlying the site. If piles are utilized, test boring depths should extend into the underlying sand and gravel layer 20 feet beyond the proposed pile tip elevation.

For the proposed taxiways and aprons, up to 4 test borings per acre should be drilled. Test borings should be drilled to a depth approximately 10 feet into the underlying sand and gravel layer.

During future subsurface investigations the characteristics of the peat should be further investigated, including the peat underlying the landfill, around the perimeter of the landfill, and beyond the limits of the landfill where taxiways will be built. Geotechnical samples of the waste should also be obtained for laboratory testing. In

TABLE 3-1

SUMMARY OF FOUNDATION ALTERNATIVE EVALUATION

CARGO FACILITIES, T.F GREEN AIRPORT
RHODE ISLAND AIRPORT CORPORATION
WARWICK, RHODE ISLAND

Foundation Alternative	Application	Advantages	Disadvantages	Preliminary Estimated Cost	Schedule Impact
Deep Dynamic Compaction (DDC)	For use in areas underlain mostly by waste material (approx. 10 acres).	▪ Reduces post-construction primary settlement to approximately 12-inches. ▪ Decreases volume of in-place waste.	▪ Does not eliminate long-term creep settlement. ▪ Causes vibrations. ▪ Requires a large crane to work near existing runway. ▪ Maintenance of the buildings and aprons will be needed due to ▪ Regrading will be required following DDC. ▪ Not suitable for use on peat. ▪ Requires the use of a specialty contractor	$65,000 - $87,000 / acre	None
Soil Preloading	For use in areas underlain mostly by peat soils (approx. 10 acres).	▪ Reduces post-construction primary settlement to approximately 6-inches. ▪ Can be integrated with proposed site regrading.	▪ Does not eliminate long-term creep settlement. ▪ Impacts construction schedule ▪ Maintenance of the aprons and taxiways will be needed due to settlement. ▪ Excess fill material will need to be removed following preloading. ▪ Not suitable for use on waste material.	$250,000 / acre	Requires fill to remain in place for up to 36 months prior to construction.
Deep Foundations	For support of buildings only.	▪ Reduces post-construction settlement to less than 1-inch. ▪ Eliminates long-term creep settlement. ▪ "Best" long-term performance of buildings.	▪ Obstruction in the waste strata could significantly increase costs. ▪ Aprons and taxiways must be treated separately. ▪ Piles will have to penetrate landfill cover.	$1,000,000 / building	None

Recommended Alternative	Estimated Cost
▪ DDC over 10 acres	$650,000 - $870,000
▪ Preloading over 10 acres	$2,500,000
Total Cost $3,150,000 - $3,337,000	

addition, a small-scale field test to assess the compressibility of the waste may be required.

3.4.2Additional Laboratory Testing

Additional laboratory testing will be required to further investigate the properties of the waste and peat for the final design. Consolidation tests (ASTM D2435) should be conducted on undisturbed samples of the peat deposit to investigate the consolidation properties of the peat. Index testing, including grain size analysis (ASTM D422) and Atterberg limits (ASTM D4318) should be conducted on the peat and waste to further classify the properties of each strata. Further characterization of the waste should include an estimate of the percent of waste and soil observed in the samples collected and the degree of decomposition of the waste. Additionally, further organic content tests (ASTM D2974) should be conducted on both the waste and peat.

Section 4
Construction Considerations

4.1 General

The purpose of this section is to discuss issues related to geotechnical aspects of construction as they relate to the foundation support alternatives presented herein. Included are anticipated methods of construction and identification of potential related construction problems.

4.2 Deep Dynamic Compaction

Construction considerations for the use of DDC as a means to improve the settlement characteristics of the waste material at the site include the following:

- DDC involves the use of a large crane dropping a heavy weight from a large height. The use of this type of crane in close proximity to airplane traffic will have to be considered;
- Vibrations created during DDC will have to be monitored due to the proximity of the airport industrial facilities and residential properties to the site. Typically structures located more than 200 feet from the DDC operation do not experience damaging vibrations;
- DDC should be done prior to regrading and installation of the landfill cover;
- DDC is not expected to eliminate long-term creep settlement associated with decomposition of the waste located below the proposed buildings. This additional settlement will need to be incorporated into the design of the proposed structures. In addition, long-term creep settlement of the buildings and aprons should be monitored and maintenance will likely be needed over time.

4.3 Soil Preloading

Construction considerations for the use soil preloading as a means to improve the settlement characteristics of the peat deposit at the site include the following:

- Granular material suitable for use in a soil preload program is anticipated to be readily available;
- Placement of the preload material is anticipated to be accomplished with conventional earth moving equipment;
- Fill used as part of a preloading program should be placed in conjunction with site filling around the perimeter of the landfill and can be used for the landfill cover;

- A minimum of 10 feet of fill should be placed over the peat deposit. Larger amounts of fill may be used to expedite the consolidation process; and

- Preloading is not expected to eliminate long-term creep settlement associated with decomposition of the peat soils. This additional settlement will need to be incorporated into the design of the proposed structures. In addition, long-term creep settlement should be monitored and maintenance will likely be needed over time.

4.4 Deep Foundations

Construction considerations for the use deep foundation units as a means to support the proposed structures include the following:

- Obstructions may be encountered during the installation of piles. They type and size of obstructions could add significant costs and time to the construction schedule;

- Piles can be either driven or drilled-in. Driven piles will cause vibrations that will need to be monitored;

- Piles should be installed prior to installation of the landfill cover;

- Piles will have to penetrate through the landfill cover;

- Potentially large downdrag loads must be considered and incorporated into the design of the piles;

- A load test will be required if pile capacities exceed 40 tons; and

- Soil and waste cuttings produced during the installation of piles will need to be properly disposed of.

Appendix A

Test Boring Logs

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: MW-1 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/16/00 **Date End:** 11/17/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/17	14.5'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	14"	1-5		S-1: Moist, medium dense tan to dark brown
-					6-5	CAP 2'	fine, medium, coarse sand, some gravel, trace
-							silt.
-							
5'	S-2	5'-7'	24"	2"	7-10		S-2: Moist, medium dense, black wood, wire
-					12-9		glass.
-							
-							
-							
10'	S-3	10'-12'	24"	8"	3-25	WASTE	S-3: Moist, dense, black, paper, plastic, wood,
-					8-10		metal. Gray fine sand, some gravel in tip.
-							
-							
-							
15'	S-4	15'-17'	24"	4"	13-14		S-4: Wet, medium dense, black to dark gray
-					15-18		fine sand, some gravel, trace metal.
-							
-							
-							
20'	S-5	20'-22'	24"	12"	13-16	20'	S-5: Wet, dense, dark gray and tan fine,
-					16-12		medium, coarse sand and gravel, little silt.
-							
-							
-							
25'	S-6	25'-27'	24"	12"	12-10	SAND	S-6: Same as above
-					12-11	and	
-						GRAVEL	
-							
-							
30'	S-7	30'-32'	24"	12"	20-26		S-7: Wet, dense, black fine to medium sand
							and
					24-26		gravel, some to little shale fragments.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 1 of 2.

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-1 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/16/00 **Date End:** 11/17/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/17	14.5'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	16"	17-15 17-23		S-8: Wet, dense, gray fine, medium, coarse sand, some to little gravel, trace silt.
-							
-							
-							
40'	S-9	40'-42'	24"	19"	13-21 22-28		S-9: Same as above
-							
-							
-							
-							
45'	S-10	45'-47'	24"	20"	18-19 16-20		S-10: Same as above
-							
-							
-							
-							
50'	S-11	50'-52'	24"	8"	12-15 16-21		S-11: Same as above
-							
-							TERMINATED BORING AT 52'
-							Installed well
-							
55'							
-							
-							
-							
60'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 2 OF 2.

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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New Hampshire Boring, Inc.
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Fax: (603) 437-0034

Boring #: SB-2 **Project: RHODE ISLAND AIRPORT CORP** **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/6/00 **Date End: 11/7/00** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth: 25'**	**Casing: out**	**Stabilization Per.**
11/7			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	22"	4-12		S-1: Top 2": Moist, medium dense glass, fine,
-					17-32	CAP 2'	medium, coarse sand.
-							Bottom 20": Moist, medium dense, tan fine
-							sand and gravel.
5'	S-2	5'-7'	24"	4"	4-13		S-2: Moist, medium dense, black cardboard
-					2-3		wire, blue plastic.
-							
-							
-							
10'	S-3	10'-12'	15"	2"	52-60		S-3: Moist, very dense, black plastic,
-					100/3"		cardboard.
-							
-							
-							
15'	S-4	15'-17'	24"	6"	7-9	WASTE	S-4: Wet, very dense, black plastic, aluminum,
-					66-31		decomposed waste, wood.
-							
-							
-							
20'	S-5	20'-22'	24"	2"	4-5		S-5: Wet, loose, black wood, decomposed
-					3-23		waste.
-							
-							
-							
25'	S-6	25'-27'	24"	3"	11-8		S-6: Wet, medium dense, black wood, metal,
-					10-10		glass, rubber, cardboard.
-							
-							
-							S-7: Top 2": Wet, medium dense, black waste.
30'	S-7	30'-32'	24"	18"	8-9	30'	Bottom 16": Gray fine, medium, coarse sand,
					14-16		some gravel.

Driller: M.THOMPSON **Helper: D. PALMER** **Inspector:**

Remarks: Page 1 of 2

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Phone: (603) 437-1610

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Derry, NH 03038
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Boring #: SB-2 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/6/00 **Date End:** 11/7/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/7	25'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	8"	8-12		S-8: Wet, medium dense, gray fine to medium
-					18-20		sand, trace silt, gravel.
-							
-							
-							
40'	S-9	40'-42'	24"	8"	5-7	SAND	S-9: Top 4": Wet, medium dense, gray fine
-					10-11	and	sand, little silt.
-						GRAVEL	Bottom 4": Dark gray fine, medium, coarse
-							sand, little gravel.
-							
45'	S-10	45'-47'	24"	8"	11-16		S-10: Wet, dense, dark gray fine, medium
-					18-22		coarse sand and gravel, little silt.
-							
-							
-							
50'	S-11	50'-52'	24"	6"	12-9		S-11: Wet, medium dense, dark gray fine
-					6-11		medium, coarse sand and gravel. (Rock
-							fragments)
-							
-							
55'	S-12	55'-57'	24"	7"	17-16		S-12: Top 5": Wet, medium dense dark gray
-					11-12		fine, medium, coarse sand and gravel.
-							Bottom 2": dark gray fine to medium sand,
-							trace silt, gravel.
-							S-13: Wet, medium dense, dark gray fine to
60'	S-13	60'-62'	24"	11"	7-11		medium sand, gravel.
					11-18		TERMINATED BORING AT 62'

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 2 of 2

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-3 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/20/00 **Date End:** 11/22/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/21	27'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	12"	2-2		S-1: Moist, loose, tan to brown fine, medium,
-					4-12	CAP 2'	coarse sand, little gravel, trace silt.
-							
-							
5'	S-2	5'-7'	24"	7"	8-11		S-2: Top 2": Same as above
-					6-7		Bottom 5": moist, medium dense, plastic.
-							
-							
-							
10'	S-3	10'-12'	24"	12"	13-6		S-3: Moist, medium dense, wood, plastic
-					9-9		
-							
-							
-							
15'	S-4	15'-17'	24"	8"	17-8		S-4: Moist, medium dense, plastic metal wire
-					8-12		
-							
-							
-							
20'	S-5	20'-22'	24"	10"	4-10	WASTE	S-5: Moist, medium dense, plastic wood.
-					8-7		
-							
-							
-							
25'	S-6	25'-27'	24"	8"	6-8		S-6: Wet, medium dense, wood, plastic, black,
-					10-19		waste, some gray fine sand, little silt.
-							
-							
-							
30'	S-7	30'-32'	24"	6"	4-4		S-7: Wet, loose, wood, plastic, metal, gray
					4-7		fine sand, little silt.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 1 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Fax: (603) 437-0034

Boring #: MW-3 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/20/00 **Date End:** 11/22/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/21	**Depth:** 27'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-						35'	
35'	S-8	35'-37'	24"	6"	9-12	WASTE	S-8: Wet, medium dense, metal, wood,
-					9-8	and	plastic, fibrous peat.
-						PEAT	
-							
-						40'	
40'	S-9	40'-42'	24"	24"	2-2		S-9: Top 2": Same as above
-					3-5		Middle 10" wet, soft, fibrous peat.
-	U-1	42.5'-44.5'	24"	8"	PUSH	PEAT	Bottom 12": Medium stiff peat.
-							U-1: 4" wet brown peat and metal.
-						44'	4" gray fine sand, some silt.
45'	S-10	45'-47'	24"	12"	3-4		
-					3-4		
-							
-							
-							
50'	S-11	50'-52'	24"	5"	7-8	SAND	S-11: Wet, medium dense, gray fine,
-					8-10	and	medium, coarse sand and gravel, little
-						GRAVEL	silt.
-							
-							
55'	S-12	55'-57'	24"	3"	14-12		S-12: Same as above
-					10-9		
-							
-							
-							
60'	S-13	60'-62'	24"	0"	9-8		S-13: Same as above
					17-17		

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 2 of 3

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: MW-3 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/20/00 **Date End:** 11/22/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 27'	**Casing:** out	**Stabilization Per.**
11/21			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
65'	S-14	65'-67'	24"	18"	14-7		S-14: Wet, medium dense, gray fine, medium,
-					6-7		coarse some to little gravel, trace silt.
-							
-							
-							
70'	S-15	70'-72'	24"	8"	9-7		S-15: Same as above
-					9-8		
-							
-							
-							
75'	S-16	75'-77'	24"	10"	14-11		S-16: Wet, medium dense, black fine, medium,
-					12-16		coarse sand and gravel, trace silt.
-							2nd spoon – gray fine to medium sand,
-							trace gravel.
-							TERMINATED BORING AT 77'
80'							Well installed
-							
-							
-							
-							
85'							
-							
-							
-							
-							
90'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 3 of 3

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Fax: (603) 437-0034

Boring #: SB-4 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/8/00 **Date End:** 11/8/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date: 11/8	**Depth:** 2.5'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	1-1		S-1: Dry, very soft, dark brown fibrous peat,
-					3-2		little glass, fabric.
-							
-							
5'	S-2	5'-7'	24"	1"	woh-woh		S-2: Moist, very soft dark brown peat, little
-					woh-woh		sand, gravel, wood, fabric.
-							
-							
-							
10'	S-3	10'-12'	24"	14"	woh-woh	WASTE	S-3: Wet, very soft, dark brown peat,
-					woh-woh	and	trace glass, fabric.
-						PEAT	
-							
-							
15'	S-4	15'-17'	24"	1"	woh-woh		S-4: Wet, very soft, dark brown peat, little
-					woh-woh		fine to medium sand, trace glass, fabric
-							
-							
-							
20'	S-5	20'-22'	24"	0"	wor-wor		S-5: No recovery.
-					wor-wor		
-							
-							
-							
25'	S-6	25'-27'	24"	24"	wor-wor		S-6: Wet, very soft, brown peat. (less fibrous
-					wor-wor		more silt) trace glass.
-							
-							
-							
30'	S-7	30'-32'	24"	0"	3-4	30'	S-7: Wet, loose, gray fine, medium, coarse
					4-5		sand and gravel, little silt in tip.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 1 of 2

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

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Boring #: SB-4 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/8/00 **Date End:** 11/8/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/8	2.5'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	1"	3-3		S-8: Same as above
-					3-5		
-							
-							
-							
40'	S-9	40'-42'	24"	8"	3-3	SAND	S-9: Same as above – trace silt.
-					3-4	and	
-						GRAVEL	
-							
-							
45'	S-10	45'-47'	24"	0"	4-4		S-10: Same as above
-					3-4		
-							
-							
-							
50'	S-11	50'-52'	24"	5"	11-10		S-11: Wet, medium dense, gray sand and
-					9-10		gravel, some silt.
-							
-							
-							
55'	S-12	55'-57'	24"	15"	2-3		S-12: Wet, loose, gray sand and gravel,
-					6-6		trace silt.
-							
-							S-13: Top 5": Wet, loose, fine to medium
-							sand, trace silt, gravel.
60'	S-13	60'-62'	24"	7"	1-1		Bottom 2": Sand and gravel, trace silt.
					3-4		TERMINATED BORING AT 62'

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 2 of 2

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-5 **Project: RHODE ISLAND AIRPORT CORP** **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End: 11/13/00** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date: 11/13	**Depth: 13.5'**	**Casing: out**	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	14"	2-3	CAP 1'	S-1: Moist, loose topsoil.
-					2-3		4" tan sand and gravel, trace silt.
-							6" plastic, newspaper.
-							
5'	S-2	5'-7'	24"	2"	5-3		S-2: Moist, loose, black, wood, plastic.
-					1-3		
-							
-							
-							
10'	S-3	10'-12'	11"	0"	60-100/5"	WASTE	S-3: No recovery. Moist, very dense, black, rubber, wood, fabric in tip
-							
-							
-							
-							
15'	S-4	15'-17'	24"	3"	3-1		S-4: Wet, loose, black wood, plastic, fabric.
-					4-2		2nd spoon – peat mixed with waste.
-							
-							
-							
20'	S-5	20'-22'	24"	1"	4-3		S-5: Wet, loose, black, wood, glass, plastic.
-					3-5		2nd spoon – No recovery.
-							
-							
-						25'	
25'	S-6	25'-27'	24"	0"	8-3	WASTE	S-6: Wet, soft, dark brown peat and gray
-					1-5	and	soft waste.
-						PEAT	2nd spoon – gray waste
-							
-							
30'	S-7	30'-32'	24"	2"	WOH-1		S-7: Wet, very soft dark brown peat and
					2-2		metal.

Driller: M.THOMPSON **Helper: D. PALMER** **Inspector:**

Remarks: Page 1 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-5 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End:** 11/13/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/13	13.5'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-						35'	
35'	S-8	35'-37'	24"	22"	WOR-WOR WOH-WOH	WASTE and SAND and SILT	S-8: Top 18" – wet loose gray silt. Bottom 4" – gray fine sand, trace metal.
-							
-							
-							
-						40'	
40'	S-9	40'-42'	24"	12"	4-4 4-4		S-9: Wet, loose, gray fine sand, some to little silt.
-							
-							
-							
45'	S-10	45'-47'	24"	12"	3-3 4-4		S-10: Wet, loose, tan fine, medium, coarse sand, some gravel, little silt.
-							
-						SAND and GRAVEL	
-							
-							
50'	S-11	50'-52'	24"	12"	4-6 5-4		S-11: Same as above
-							
-							
-							
-							
55'	S-12	55'-57'	24"	20"	9-6 5-5		S-12: Wet, medium dense, gray fine, medium, coarse sand and gravel, little silt.
-							
-							
-							
-							
60'	S-13	60'-62'	24"	8"	7-9 8-9		S-13: Same as above

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 2 of 3

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

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Boring #: MW-5 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End:** 11/13/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/13	15'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
65'	S-14	65'-67'	24"	10"	9-13		S-14: Wet, dense, gray fine sand and silt.
-					18-20		
-							
-							
-							
70'	S-15	70'-72'	24"	9"	13-16		S-15: TOP 5": Same as above.
-					14-17		Bottom 4": Gray fine to medium sand.
-							
-							TERMINATED BORING AT 72'
-							Well installed
75'							
-							
-							
-							
-							
80'							
-							
-							
-							
-							
85'							
-							
-							
-							
-							
90'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 3 of 3

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

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Boring #: MW-6 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/13/00 **Date End:** 11/15/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth: 20'**	**Casing: out**	**Stabilization Per.**
11/15			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	1-2	CAP	S-1: Moist, loose, tan and black fine, medium
-					2-2	2'	coarse sand, little gravel.
-							
-							
5'	S-2	5'-7'	17"	4"	5-15		S-2: Moist, very dense, black fabric and
-					100/5"		plastic.
-							
-							
-							
10'	S-3	10'-12'	24"	0"	8-6		S-3: No recovery. Advanced 2nd spoon,
-					7-5		wood and metal in tip.
-							
-							
-							
15'	S-4	15'-17'	24"	0"	5-5	WASTE	S-4: No recovery. 2nd spoon, wood, metal,
-					8-6		plastic in tip
-							
-							
-							
20'	S-5	20'-22'	8"	5"	10-100/2"		S-5: Wet, very dense, black wood, metal,
-							oily sheen.
-							
-							
-							
25'	S-6	25'-27'	24"	7"	8-5		S-6: Wet, medium dense, black wood, plastic
-					5-4		glass.
-							
-							
-						30'	
30'	S-7	30'-32'	24"	24"	3-2	WASTE AND PEAT 32'	S-7: Wet, soft dark brown fibrous peat,
					2-2		trace metal, plastic.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: PAGE 1 OF 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-6 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/13/00 **Date End:** 11/57/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date: 11/15	**Depth:** 20'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-						WASTE AND SAND	
35'	S-8	35'-37'	24"	1"	7-5 5-4		S-8: Wet, medium dense, tan fine, medium, coarse sand and gravel, little peat, metal.
-							
-							
-						40'	
40'	S-9	40'-42'	24"	12"	4-4 3-3	SAND and GRAVEL	S-9: Wet, loose, gray fine sand, little to trace sand.
-							
-							
-							
45'	S-10	45'-47'	24"	12"	4-4 4-5		S-10: Same as above
-							
-							
-							
50'	S-11	50'-52'	24"	17"	9-9 6-7		S-11: Same as above
-							
-							
-							
55'	S-12	55'-57'	24"	18"	4-4 6-10		S-12: Top 3": Wet, stiff gray clay, middle 10" gray silt, some fine sand, little clay. Bottom 5": gray fine sand, some gravel, trace silt.
-							
-							
-							
60'	S-13	60'-62'	24"	8"	6-4 5-5		S-13: Wet, loose, gray fine, medium, coarse sand and gravel, trace silt.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: PAGE 2 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-6 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/13/00 **Date End:** 11/15/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/15	20'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
65'	S-14	65'-67'	24"	16"	5-4	SAND	S-14: Top 12" wet, loose, gray fine, medium,
-					5-7	and	coarse sand, some gravel.
-						GRAVEL	Bottom 4" gray fine sand, little silt.
-							
-							
70'	S-15	70'-72'	24"	5"	9-9		S-15: Wet, medium dense, dark gray gravel,
-					8-9		little sand, trace silt.
-							TERMINATED BORING AT 72'
-							Well installed
-							
75'							
-							
-							
-							
-							
80'							
-							
-							
-							
-							
85'							
-							
-							
-							
-							
90'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: PAGE 3 of 3

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

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Boring #: MW-7 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End:** 11/9/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/9	**Depth:** 6'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	18"	2-5		S-1: Moist, black fine, medium, coarse sand,
-					5-5		some gravel, little silt.
-							
-							
5'	S-2	5'-7'	24"	8"	2-2		S-2: Wet, black to gray fine, medium, coarse
-					3-2		sand, some gravel, wood, trace silt.
-							
-							
-							
10'	S-3	10'-12'	24"	12"	woh/1		S-3: Wet, gray fine, medium, coarse sand,
-					2-3		some gravel, wood, trace silt.
-							
-						SAND AND	
-						GRAVEL	
15'	S-4	15'-17'	24"	8"	8-10		S-4: Dark gray wet, fine, medium, coarse
-					9-9		sand and gravel, some silt, little clay.
-							
-							
-							
20'	S-5	20'-22'	24"	17"	7-13		S-5: Same as Above
-					16-21		
-							
-							
-							
25'	S-6	25'-27'	24"	19"	4-7		S-6: Wet, gray fine, medium, coarse sand,
-					10-10		some gravel, trace silt.
-							
-							
-							
30'	S-7	30'-32'	24"	20"	5-10		S-7: Same as above
					19-20		TERMINATED BORING AT 32'

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks:

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-8 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/15/00 **Date End:** 11/16/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/16	**Depth:** 16'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	19"	2-4		S-1: Moist, loose, tan fine, medium, coarse
-					4-4		sand, some gravel.
-							
-						CAP 5'	
5'	S-2	5'-7'	24"	10"	4-2		S-2: Top 7": Same as above
-					6-3		Bottom 3": Black, plastic, glass.
-							
-							
-							
10'	S-3	10'-12'	24"	6"	5-7		S-3: Wet, medium dense, black plastic, glass,
-					5-5		wood, paper, metal.
-							
-							
-							
15'	S-4	15'-17'	24"	5"	3-6		S-4: Wet, loose, black, metal, plastic, wood,
-					3-12		wood, rubber.
-							
-							
-						WASTE	
20'	S-5	20'-22'	24"	4"	7-4		S-5: Wet, medium dense, black, metal, wood,
-					9-8		oily sheen.
-							
-							
-							
25'	S-6	25'-27'	24"	5"	8-17		S-6: Wet, dense black, wood, some
-					30-19		gray, fine to medium sand, trace gravel.
-							
-							
-						30'	
30'	S-7	30'-32'	24"	12"	8-6		S-7: Wet, medium dense, gray fine, medium,
					10-9		coarse sand and gravel, little silt, trace metal.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: PAGE 1 OF 2

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: MW-8 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/15/00 **Date End:** 11/16/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/16	16'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	12"	9-12		S-8: Wet, medium dense, gray fine, medium,
-					11-13		coarse sand and gravel, little silt.
-							
-							
-							
40'	S-9	40'-42'	24"	12"	16-13		S-9: Same as above
-					11-12	SAND	
-						and	
-						GRAVEL	
-							
45'	S-10	45'-47'	24"	15"	10-18		S-10: Same as above
-					15-17		
-							
-							
-							
50'	S-11	50'-52'	24"	2"	7-4		S-11: Same as above with sand seam.
-					4-4		
-							
-							
-							
55'	S-12	55'-57'	24"	12"	6-11		S-12: Wet, medium dense, dark gray sand
-					9-8		and gravel, little silt.
-							
-							
-							S-13: Wet, medium dense, dark gray, fine,
60'	S-13	60'-62'	24"	8"	10-11		medium, coarse sand, some gravel, trace silt.
					15-19		TERMINATED BORING AT 62' Well Set

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

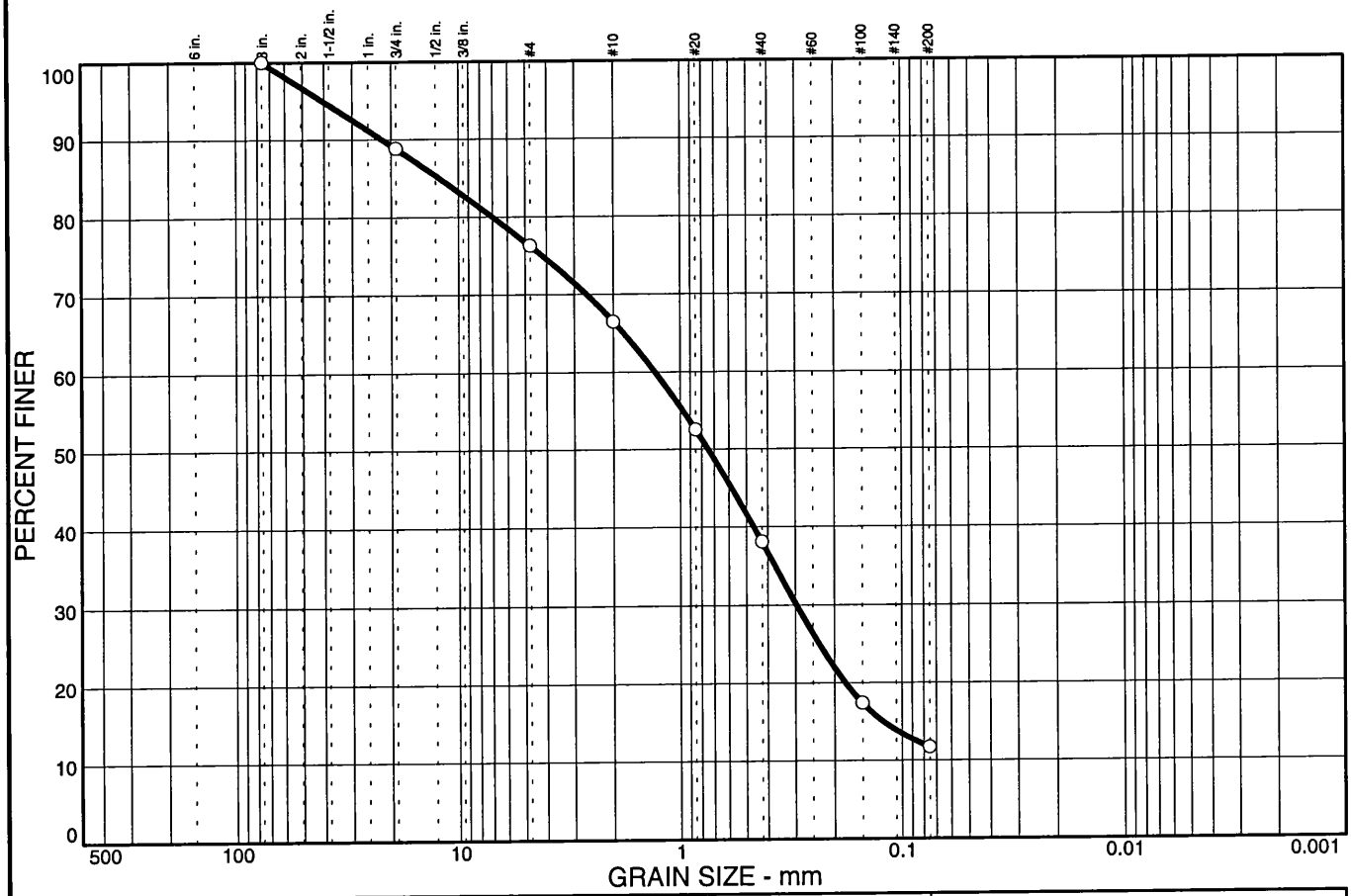
Remarks: PAGE 2 of 2

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Appendix B

Geotechnical Engineering Laboratory Test Results

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	11.2	12.5	9.8	28.4	26.4	11.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	88.8		
#4	76.3		
#10	66.5		
#20	52.5		
#40	38.1		
#100	17.4		
#200	11.7		

* (no specification provided)

Soil Description

Poorly graded sand with silt and gravel

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 12.2 D_{60}= 1.30 D_{50}= 0.747
D_{30}= 0.296 D_{15}= 0.121 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO= ---

Remarks

As received moisture content = 13.3%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

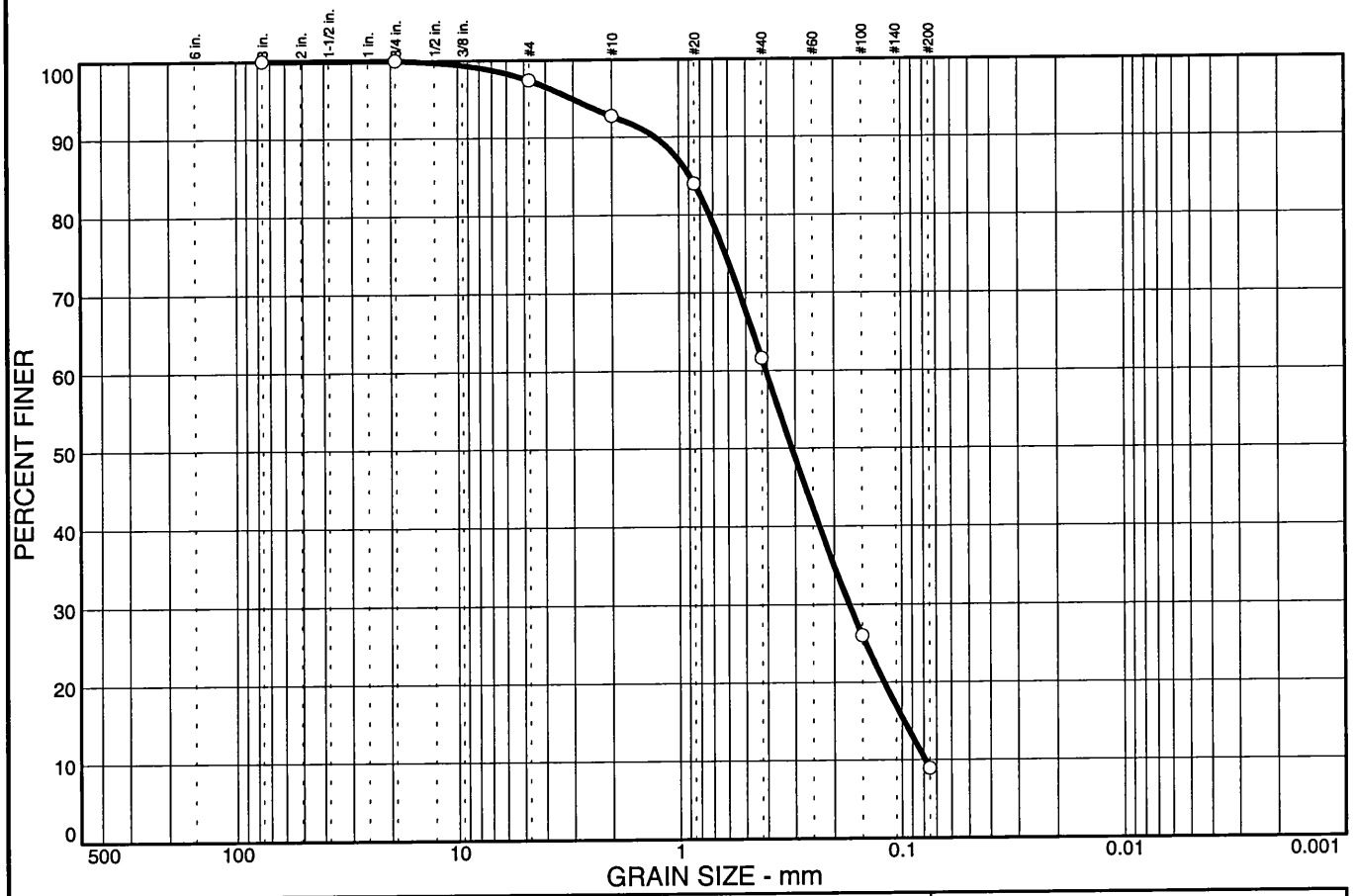
Sample No.: S-10 **Source of Sample:** --- **Date:** 12-6-00
Location: MW-1 **Elev./Depth:** 45-47ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.6	4.7	31.1	52.7	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	97.4		
#10	92.7		
#20	84.0		
#40	61.6		
#100	26.0		
#200	8.9		

* (no specification provided)

Soil Description

Poorly graded sand with silt

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 0.891 D_{60}= 0.407 D_{50}= 0.310
D_{30}= 0.172 D_{15}= 0.0977 D_{10}= 0.0787
C_u= 5.17 C_c= 0.92

Classification

USCS= SP-SM AASHTO= ---

Remarks

As received moisture content = 21.8%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

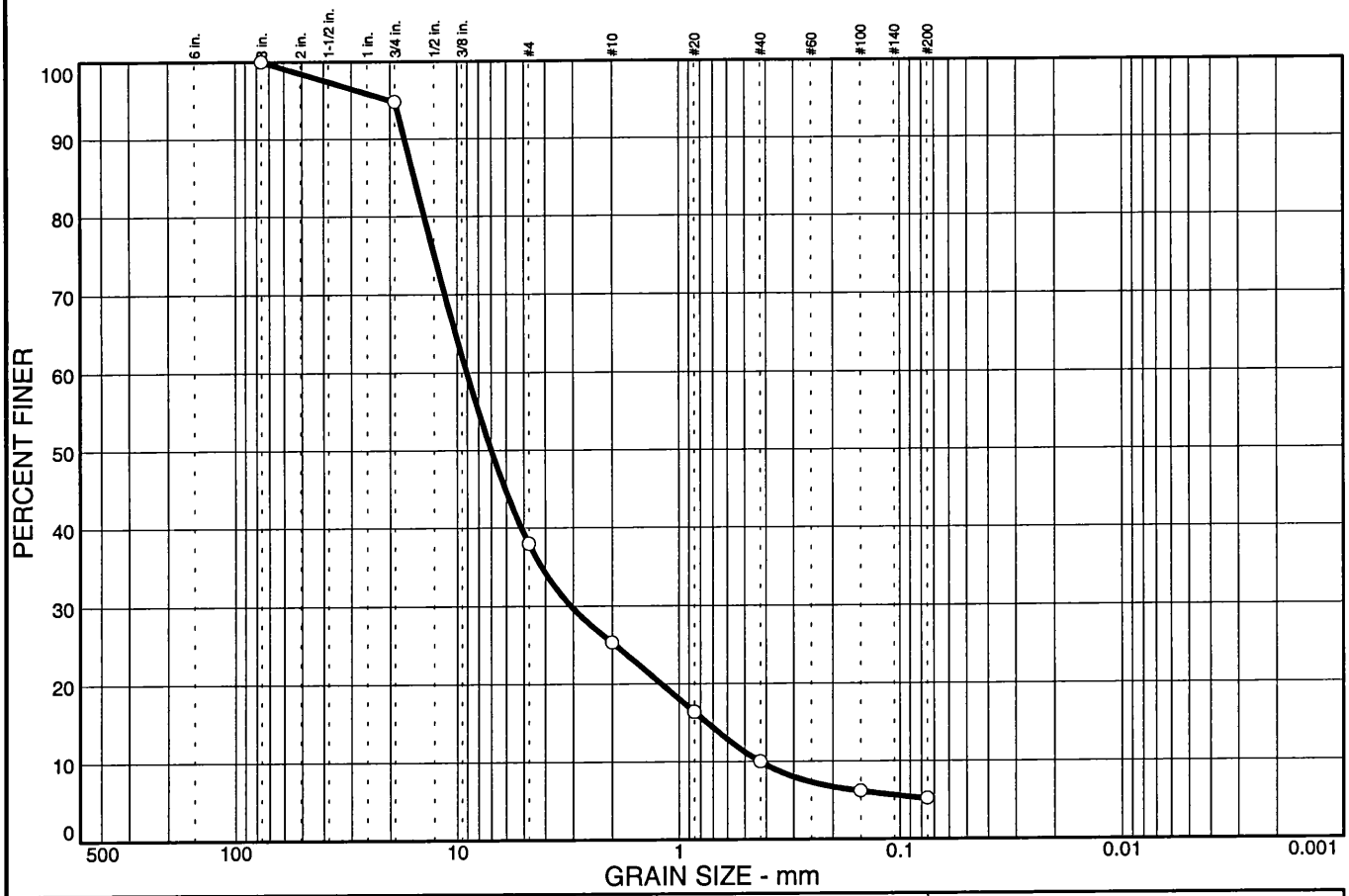
Sample No.: S-7 **Source of Sample:** --- **Date:** 12-6-00
Location: SB-2 **Elev./Depth:** 30-32ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	5.2	56.8	12.7	15.3	4.8	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	94.8		
#4	38.0		
#10	25.3		
#20	16.4		
#40	10.0		
#100	6.2		
#200	5.2		

* (no specification provided)

Soil Description

Well-graded gravel with silt and sand

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 15.6 D_{60}= 9.04 D_{50}= 7.01
D_{30}= 3.06 D_{15}= 0.743 D_{10}= 0.425
C_u= 21.27 C_c= 2.44

Classification

USCS= GW-GM AASHTO= ---

Remarks

As received moisture content = 7.0%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

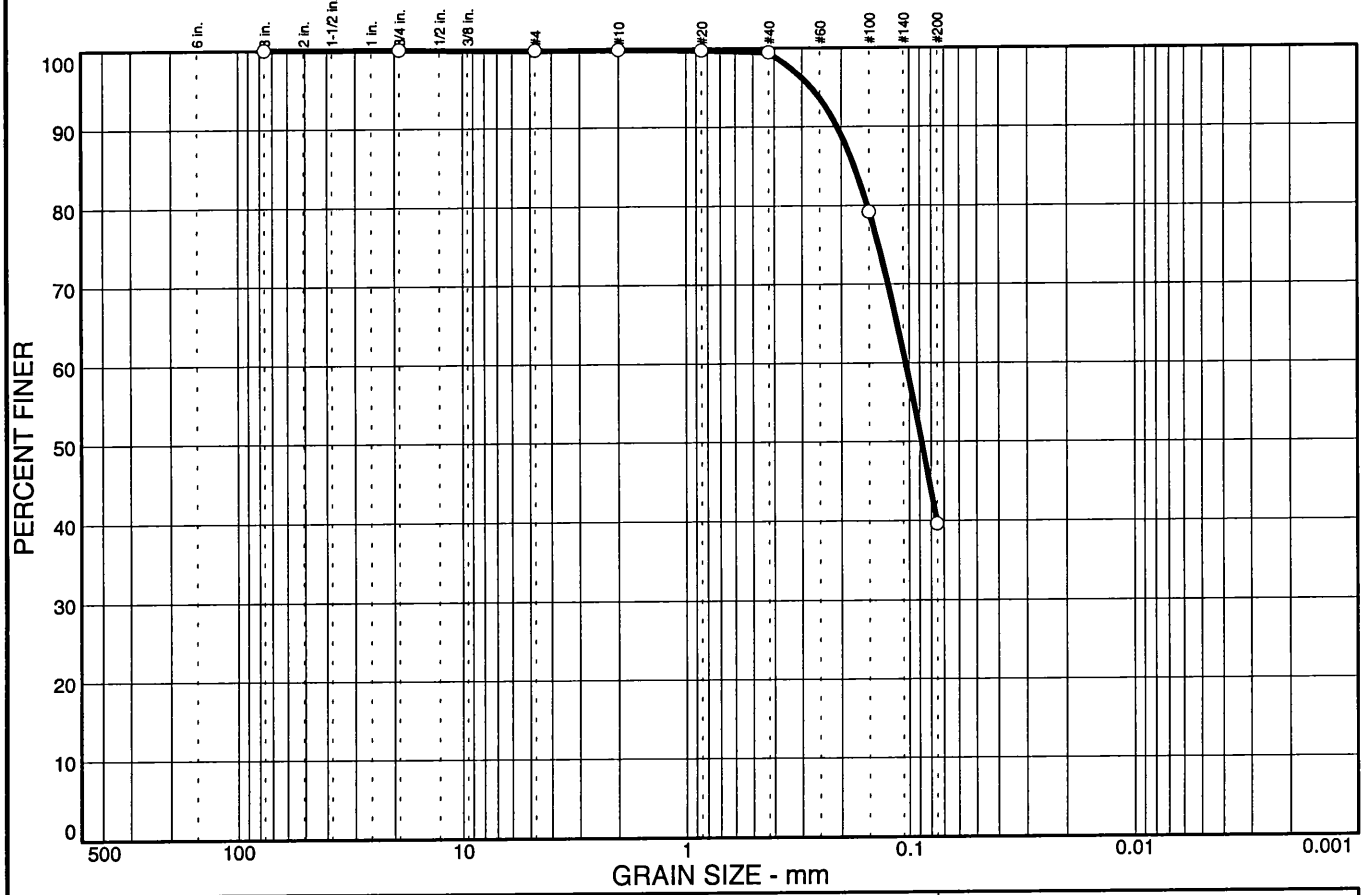
Sample No.: S-10 **Source of Sample:** --- **Date:** 12-5-00
Location: SB-4 **Elev./Depth:** 45-47ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.2	0.0	0.4	59.8	39.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	99.8		
#10	99.8		
#20	99.7		
#40	99.4		
#100	79.2		
#200	39.6		

* (no specification provided)

Soil Description

Silty sand

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 0.175 D_{60}= 0.104 D_{50}= 0.0882
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= ---

Remarks

As received moisture content = 31.7%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

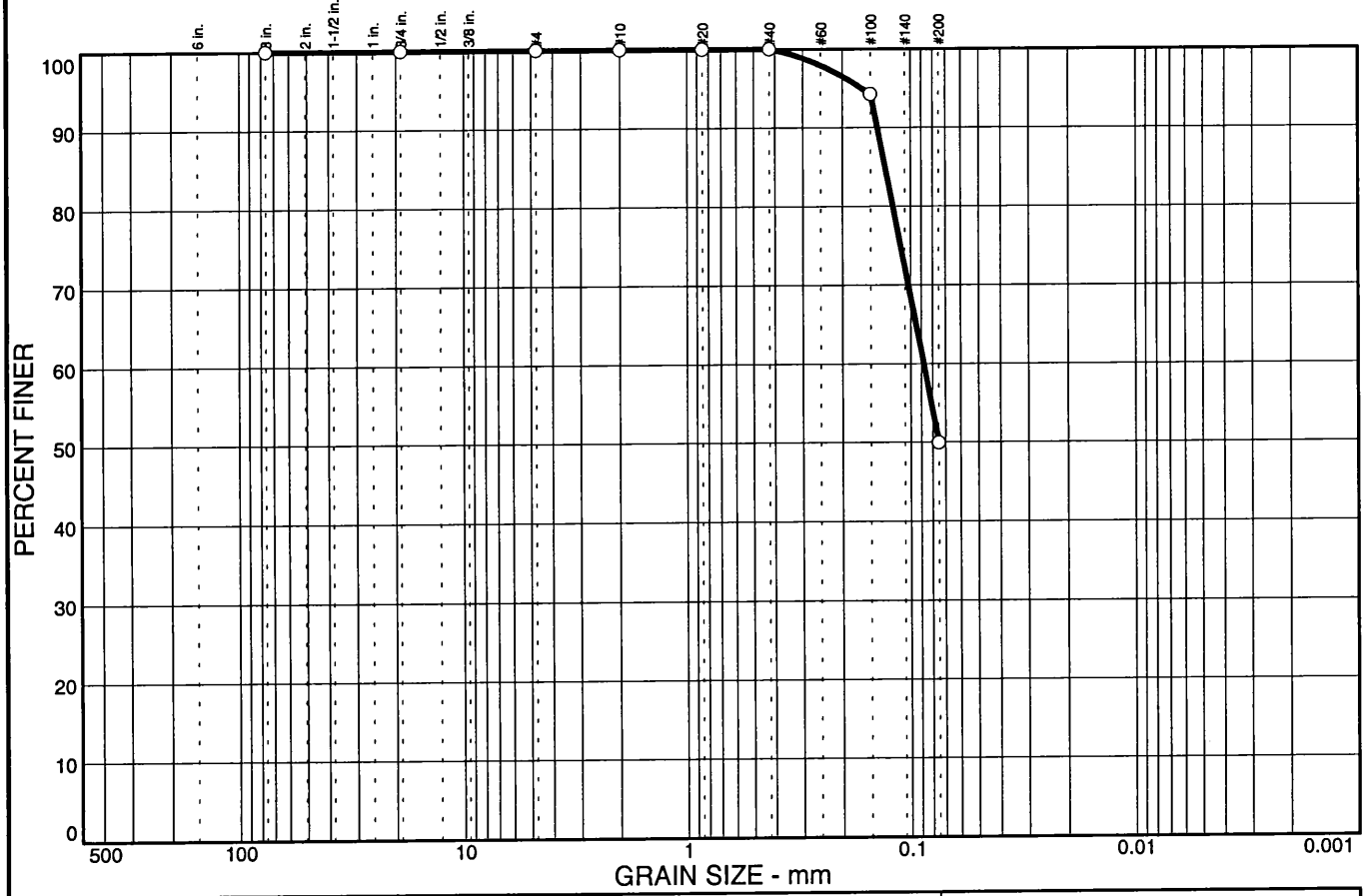
Sample No.: S-9 **Source of Sample:** --- **Date:** 12-6-00
Location: MW-5 **Elev./Depth:** 10-42ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.0	50.1	49.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	100.0		
#10	100.0		
#20	100.0		
#40	100.0		
#100	94.2		
#200	49.9		

* (no specification provided)

Soil Description

Silty sand

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 0.130 D_{60}= 0.0877 D_{50}= 0.0751
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= ---

Remarks

As received moisture content = 24.9%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

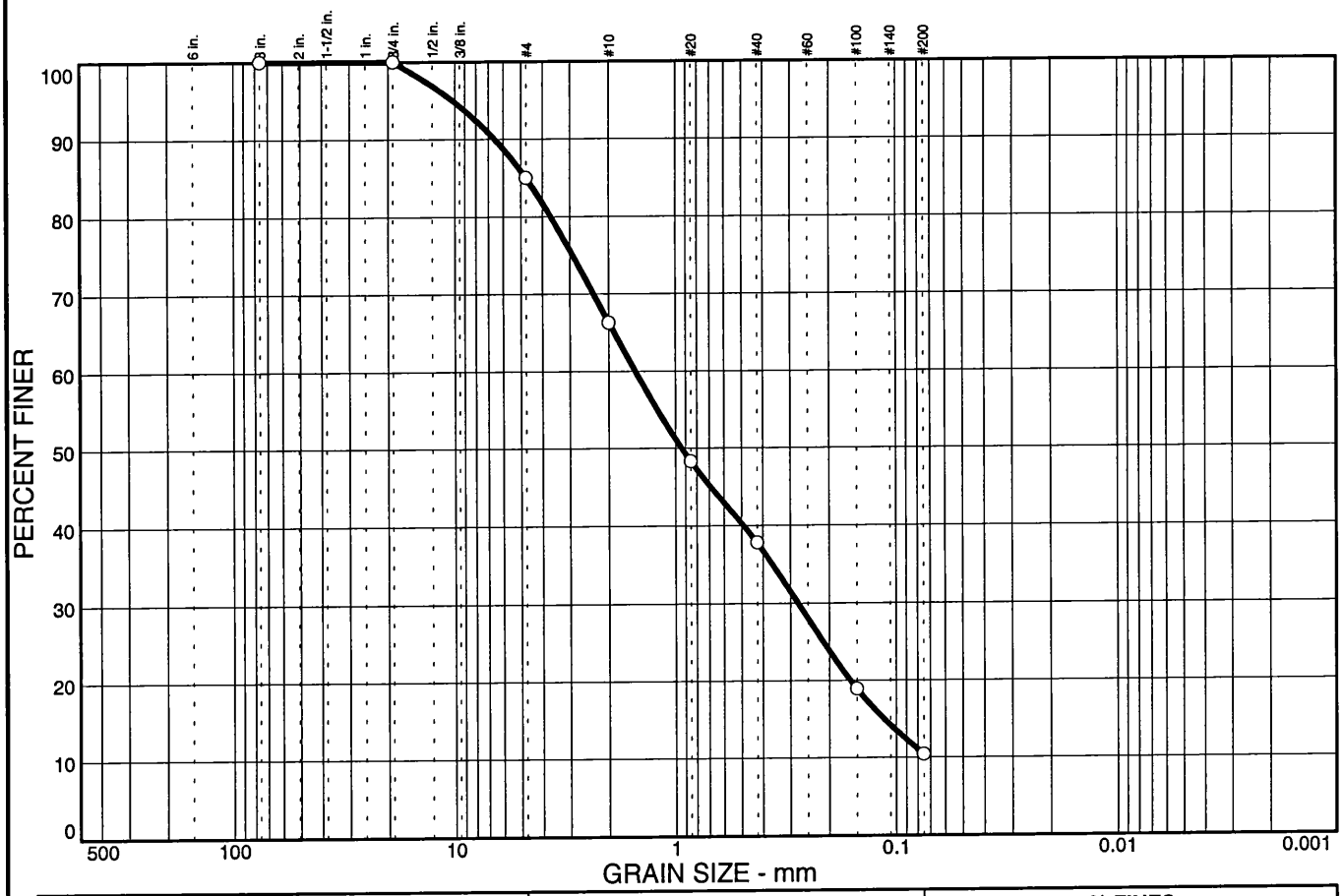
Sample No.: S-9 **Source of Sample:** --- **Date:** 12-6-00
Location: MW-6 **Elev./Depth:** 40-42ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	15.0	18.7	28.5	27.4	10.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	85.0		
#10	66.3		
#20	48.3		
#40	37.8		
#100	18.9		
#200	10.4		

* (no specification provided)

Soil Description

Poorly graded sand with silt and gravel

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 4.75 D_{60}= 1.52 D_{50}= 0.936
D_{30}= 0.277 D_{15}= 0.113 D_{10}=
C_u= C_c=

Classification

USCS= SP-SM AASHTO= ---

Remarks

As received moisture content = 16.2%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

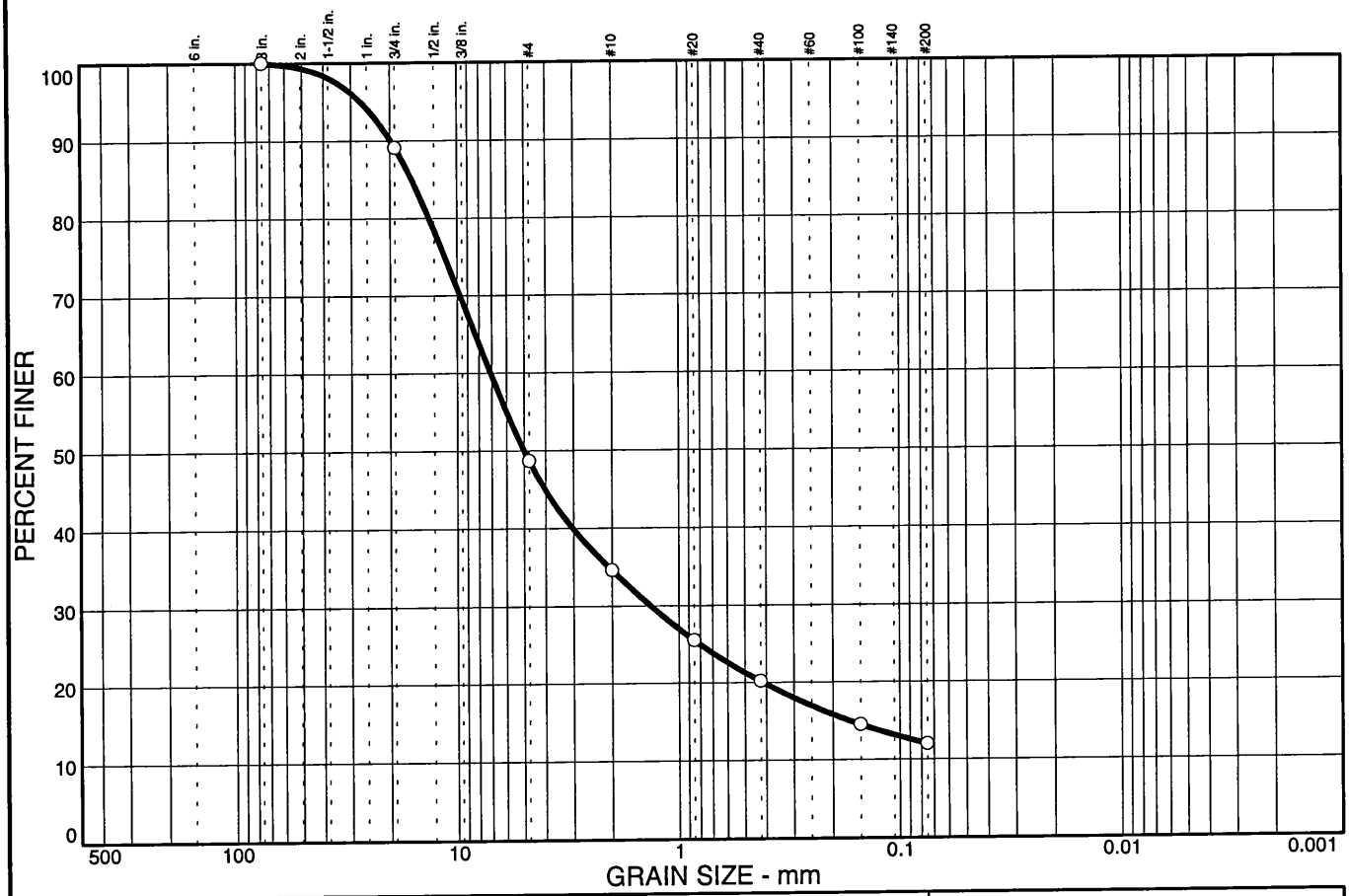
Sample No.: S-3 **Source of Sample:** --- **Date:** 12-5-00
Location: MW-7 **Elev./Depth:** 10-12ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	10.9	40.4	14.1	14.4	8.2	12.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	89.1		
#4	48.7		
#10	34.6		
#20	25.5		
#40	20.2		
#100	14.5		
#200	12.0		

* (no specification provided)

Soil Description

Poorly graded gravel with silt and sand

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 16.0 D_{60}= 7.10 D_{50}= 5.01
D_{30}= 1.34 D_{15}= 0.168 D_{10}=
C_u= C_c=

Classification

USCS= GP-GM AASHTO= ---

Remarks

As received moisture content = 7.7%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

Sample No.: S-5 **Source of Sample:** --- **Date:** 12-5-00
Location: MW-7 **Elev./Depth:** 20-22ft

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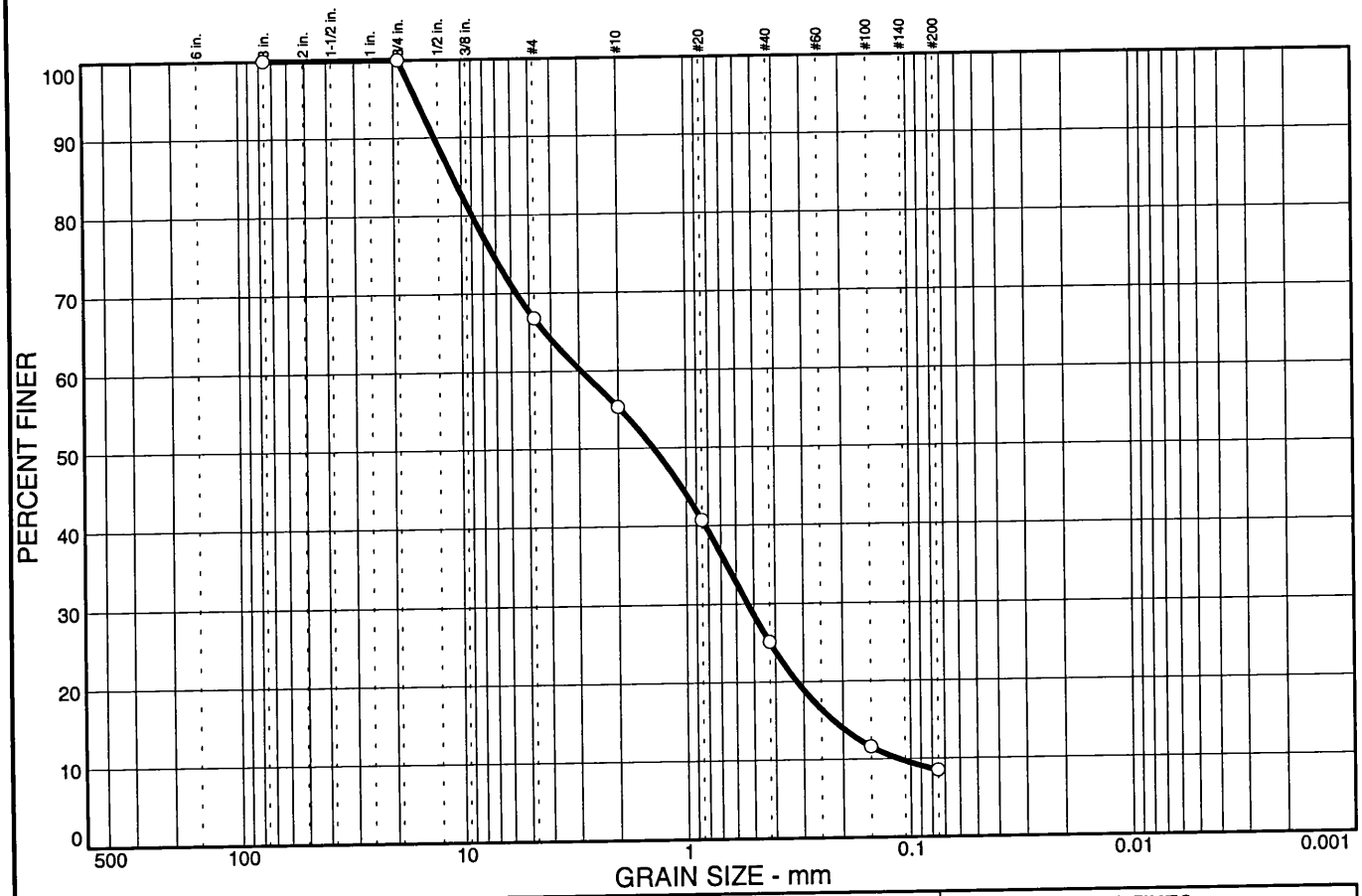
Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	33.2	11.5	30.2	16.6	8.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	66.8		
#10	55.3		
#20	40.7		
#40	25.1		
#100	11.6		
#200	8.5		

* (no specification provided)

Soil Description

Poorly graded sand with silt and gravel

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 10.9 D_{60}= 2.92 D_{50}= 1.39
D_{30}= 0.533 D_{15}= 0.221 D_{10}= 0.112
C_u= 26.00 C_c= 0.87

Classification

USCS= SP-SM AASHTO= ---

Remarks

As received moisture content = 9.9%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

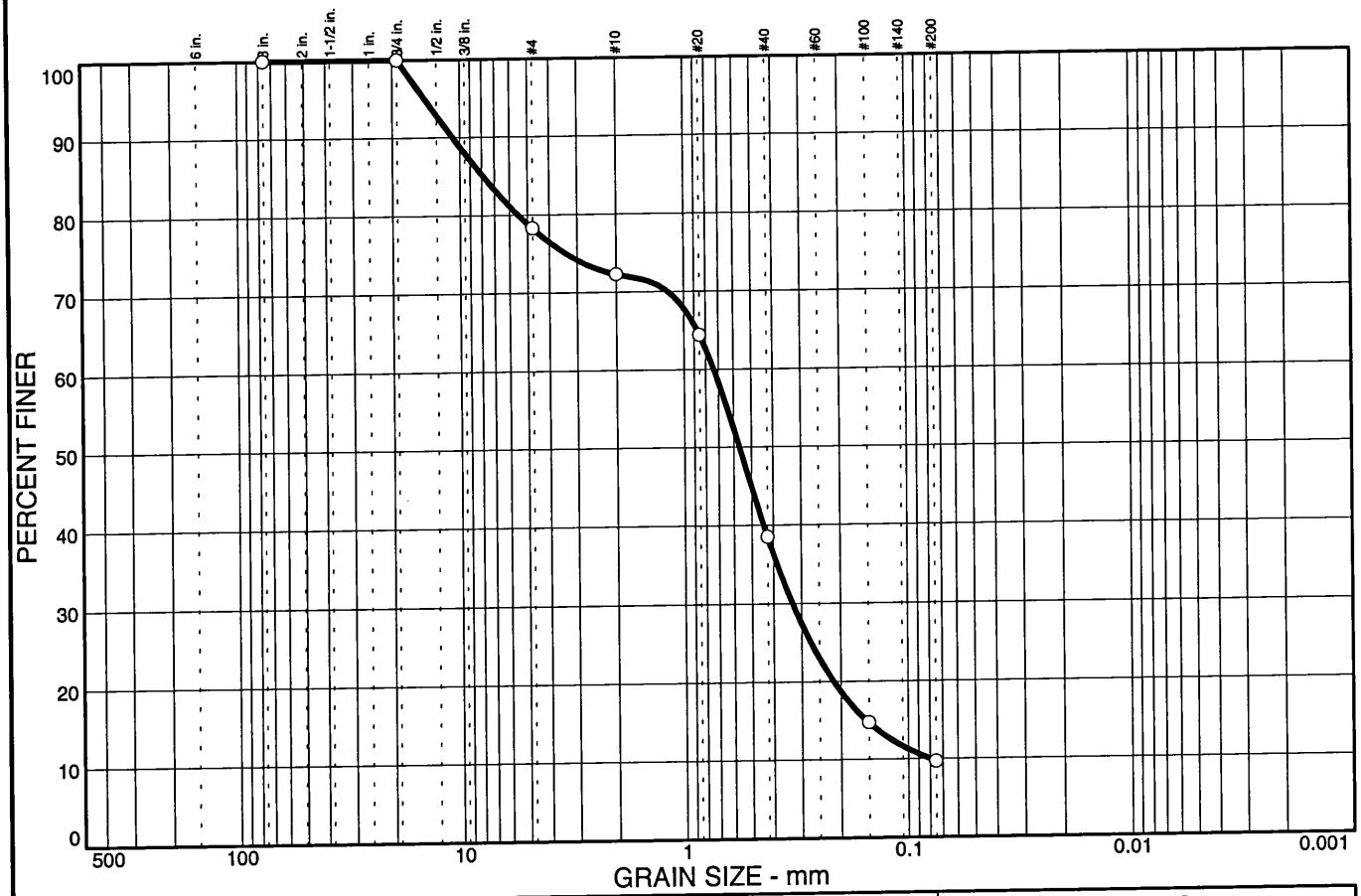
Sample No.: S-13 **Source of Sample:** --- **Date:** 12-6-00
Location: MW-8 **Elev./Depth:** 60-62ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

PARTICLE SIZE DISTRIBUTION TEST REPORT



% COBBLES	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	21.7	6.0	33.8	28.8	9.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100.0		
3/4	100.0		
#4	78.3		
#10	72.3		
#20	64.4		
#40	38.5		
#100	14.7		
#200	9.7		

* (no specification provided)

Soil Description

Well-graded sand with silt and gravel
A piece of gravel 1.0"x0.75"x0.5" in size was not included in the testing.

Atterberg Limits

PL= --- LL= --- PI= ---

Coefficients

D_{85}= 7.87 D_{60}= 0.736 D_{50}= 0.566
D_{30}= 0.329 D_{15}= 0.154 D_{10}= 0.0794
C_u= 9.26 C_c= 1.85

Classification

USCS= SW-SM AASHTO= ---

Remarks

As received moisture content = 12.6%
Sample description and classification of fines based on visual-manual procedure (ASTM D2488).

Sample No.: S-11 **Source of Sample:** --- **Date:** 12-5-00
Location: MW-8 **Elev./Depth:** 50-52ft

CDM Jessberger

Geotechnical Engineering Laboratory

Client: Rhode Island Airport Corporation
Project: TF Green Airport - Cargo Facilities
Warwick, RI
Project No: 14815-26553-TO4.FLD **Plate**

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	Rhode Island Airport Corporation	Tested By:	SC
Project Name:	TF Green Airport - Cargo Facilities	Test Date:	12/6/00
Project Location:	Warwick, RI		
Project Number:	14815-26553-TO4.FDL	Procedure:	C
Sample Number:	S-3	Temperature:	440 °C
Sample Location:	SB-4		
Sample Depth(ft):	10-12		
Sample Date:	---		
Lab ID Number:	1378		

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	D
Tin Weight (g)	17.3
Wet Weight of Sample & Tin (g)	30.4
Dry Weight of Sample & Tin (g)	18.8
Weight of Water (g)	11.7
Weight of Dry Soil (g)	1.5
Moisture Content (%)	797.9

ASH CONTENT	
Porcelain Dish Identity	D
Porcelain Dish Weight (g)	17.3
Porcelain Dish + Oven Dried Soil (g)	18.8
Weight of Oven Dried Soil (g)	1.5
Weight of Dish & Burned Soil (g)	18.0
Weight of Burned Soil (g)	0.7
Weight of Organic Material (g)	0.8
Ash Content (%)	45.9

Organic Content, (%)

54.1

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	Rhode Island Airport Corporation	Tested By:	SC
Project Name:	TF Green Airport - Cargo Facilities	Test Date:	12/6/00
Project Location:	Warwick, RI		
Project Number:	14815-26553-TO4.FDL	Procedure:	C
Sample Number:	S-9	Temperature:	440 °C
Sample Location:	MW-3		
Sample Depth(ft):	40-42		
Sample Date:	---		
Lab ID Number:	1377		

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	B
Tin Weight (g)	18.6
Wet Weight of Sample & Tin (g)	33.9
Dry Weight of Sample & Tin (g)	22.0
Weight of Water (g)	11.8
Weight of Dry Soil (g)	3.4
Moisture Content (%)	350.3

ASH CONTENT	
Porcelain Dish Identity	B
Porcelain Dish Weight (g)	18.6
Porcelain Dish + Oven Dried Soil (g)	22.0
Weight of Oven Dried Soil (g)	3.4
Weight of Dish & Burned Soil (g)	19.9
Weight of Burned Soil (g)	1.3
Weight of Organic Material (g)	2.1
Ash Content (%)	38.9

Organic Content, (%)

61.1

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	Rhode Island Airport Corporation	Tested By:	SC
Project Name:	TF Green Airport - Cargo Facilities	Test Date:	12/6/00
Project Location:	Warwick, RI		
Project Number:	14815-26553-TO4.FDL	Procedure:	C
Sample Number:	S-6	Temperature:	440 °C
Sample Location:	SB-4		
Sample Depth(ft):	25-27		
Sample Date:	---		
Lab ID Number:	1379		

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	A
Tin Weight (g)	19.4
Wet Weight of Sample & Tin (g)	32.8
Dry Weight of Sample & Tin (g)	22.5
Weight of Water (g)	10.2
Weight of Dry Soil (g)	3.1
Moisture Content (%)	327.6

ASH CONTENT	
Porcelain Dish Identity	A
Porcelain Dish Weight (g)	19.4
Porcelain Dish + Oven Dried Soil (g)	22.5
Weight of Oven Dried Soil (g)	3.1
Weight of Dish & Burned Soil (g)	22.1
Weight of Burned Soil (g)	2.7
Weight of Organic Material (g)	0.4
Ash Content (%)	86.9

Organic Content, (%)

13.1

CDM Jessberger
Geotechnical Engineering Laboratory

Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

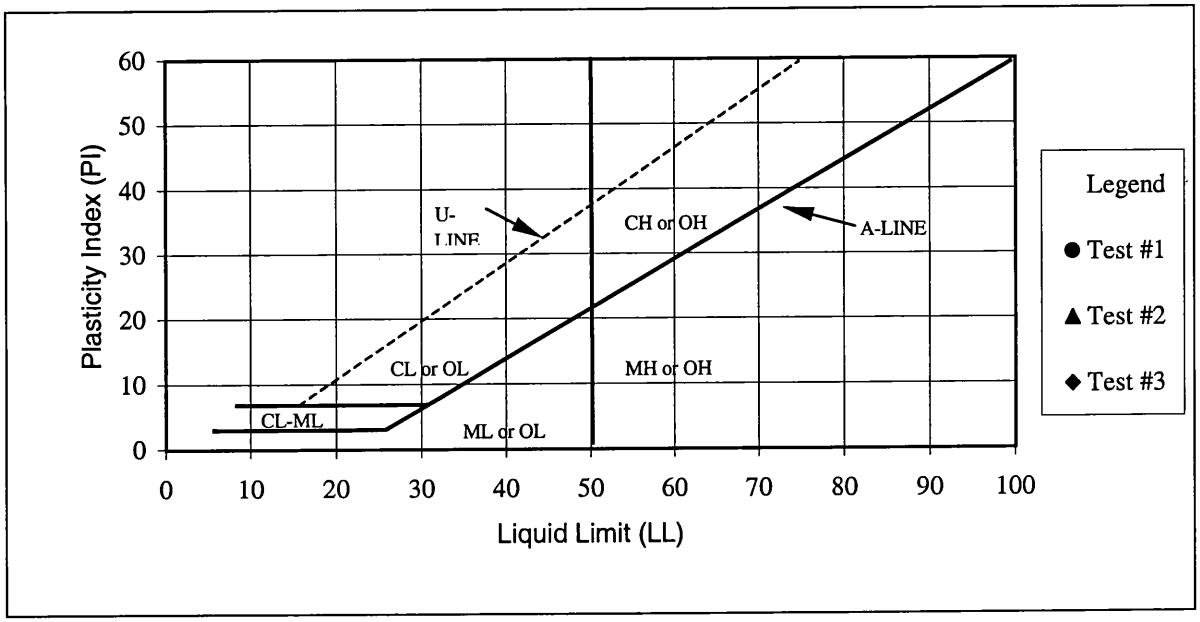
Client:	Rhode Island Airport Corporation
Project Name:	TF Green Airport - Cargo Facilities
Project Location:	Warwick, RI
Project Number:	14815-26553-TO4.FDL

Results

Test Number:	**1**	**2**	**3**
Sample Number:	S-9	S-3	S-6
Sample Location:	MW-3	SB-4	SB-4
Lab ID Number:	1377	1378	1379
Tested By:	SC	SC	SC
Test Date:	12/6/00	12/6/00	12/6/00
Sample Depth (ft):	40-42	10-12	25-27
As Rec'd Water Cont. (%):	350.3	797.9	327.6
Liquid Limit (LL)	494	645	254
Plastic Limit (PL)	418	441	116
Plasticity Index (PI)	76	204	138

Plasticity Chart

For classification of fine-grained soils and fine-grained fraction of coarse-grained soils.



Reference: ASTM D 2487

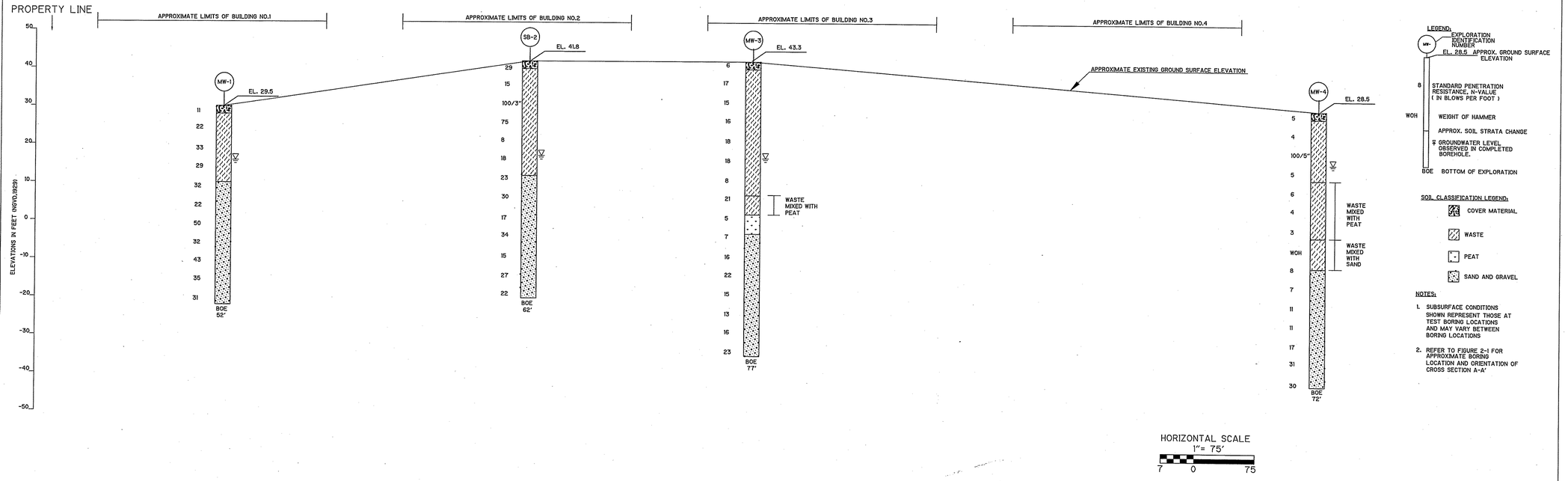
CDM
environmental engineers, scientists, planners, & management consultants

CARGO FACILITIES. T.F. GREEN AIRPORT
RHODE ISLAND AIRPORT CORPORATION
WARWICK, RHODE ISLAND

SUBSURFACE EXPLORATION LOCATION PLAN

FIGURE 2-1

Q:\CAM_IHW\1646\1\FIG1-1.DWG



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CARGO FACILITY, T.F. GREEN AIRPORT
RHODE ISLAND AIRPORT CORPORATION
WARWICK, RHODE ISLAND

GEOLOGIC CROSS SECTION A-A'

FIGURE 2-2

CDM Camp Dresser & McKee

Limited Environmental Site Investigation Report

Former Truk Away Landfill Site

T.F. Green Airport

Warwick, Rhode Island

March 2001

Prepared By:

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CDM Camp Dresser & McKee Inc.

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March 13, 2001

Ms. Doris Aschman, P.E.
Principal Engineer
Office of Waste Management
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908-5767

Subject: Limited Environmental Site Investigation Report
T. F. Green Airport
Former Truck Away Landfill Site
Warwick, Rhode Island

Dear Ms. Aschman:

On behalf of the Rhode Island Airport Corporation (RIAC), Camp Dresser & McKee, Inc. (CDM) hereby submits the enclosed Limited Environmental Site Investigation Report for the former Truk Away Landfill Site at the T. F. Green Airport in Warwick, Rhode Island. As we discussed previously, this initial investigation was not intended to provide a comprehensive assessment of the site. As agreed between RIAC, RIDEM and CDM, the goal of this preliminary investigation was to provide site environmental and geotechnical data so that RIAC can investigate the feasibility of constructing air cargo buildings at the site.

CDM is in the process of preparing a conceptual design and preliminary cost estimate for various closure/site improvement scenarios. Upon completion of this work, RIAC will evaluate the feasibility of future airport use of the site and will convey the results of this evaluation to the Rhode Island Department of Environmental Management and the Rhode Island Department of Administration.

Please call either of the undersigned at (617) 452-6000 if you have any questions or if you need additional information.

Very truly yours,

CAMP DRESSER & McKEE INC.

Matthew Dentch, P.E.
Project Manager

APPROVED BY:

Kevin J. Riley, P.E.
Associate

cc: Mr. James Zisiades, RIAC

Contents

Figures

Tables

Section 1
Introduction

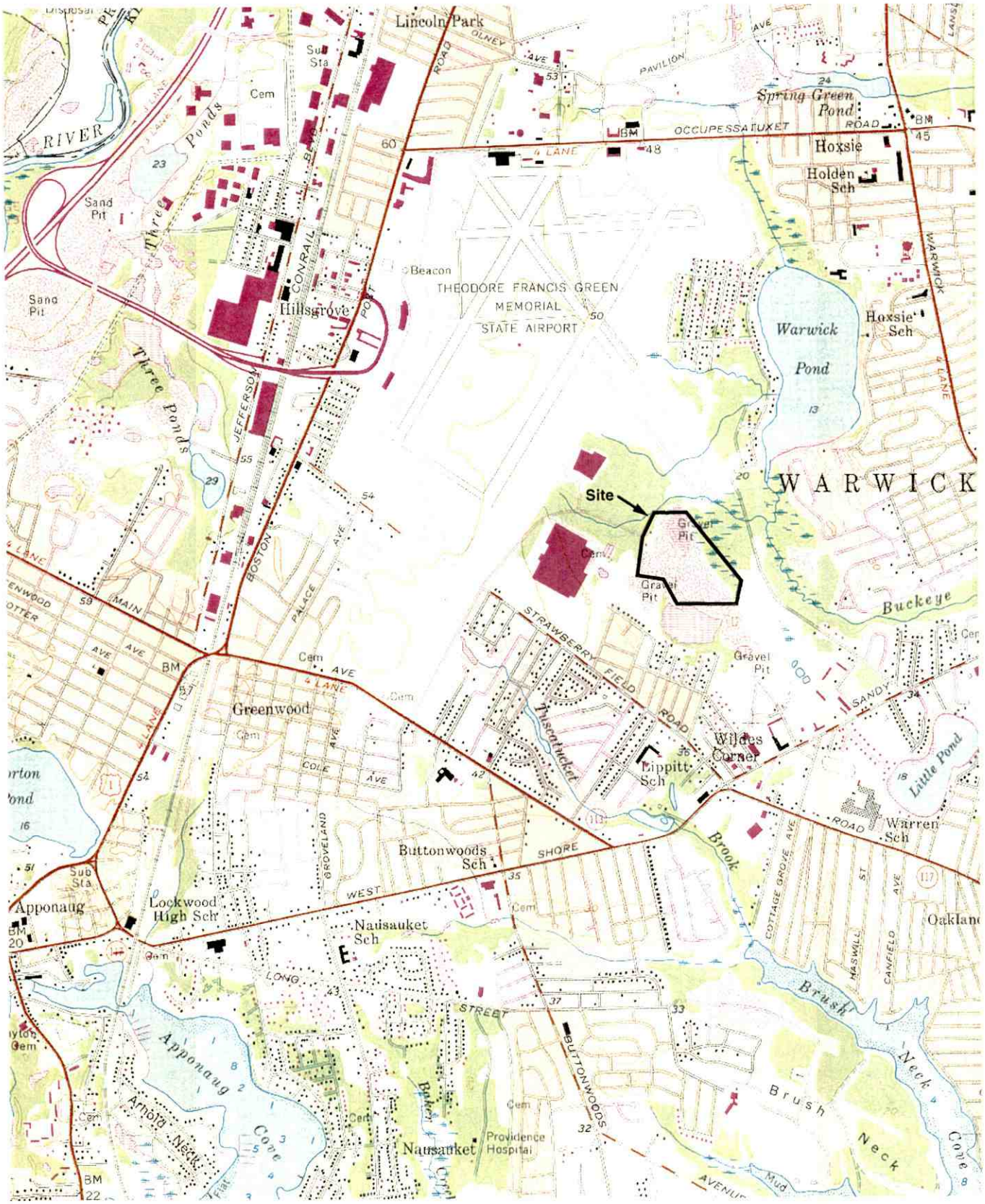
This Limited Environmental Site Investigation Report for the former Truk Away Landfill (the site) at the T. F. Green Airport in Warwick, Rhode Island has been prepared by Camp Dresser & McKee, Inc. (CDM) to document subsurface conditions at the site. The Rhode Island Airport Corporation (RIAC) is investigating the feasibility of constructing four 30,000 square foot cargo buildings on the landfill. In addition to the environmental investigation of the site, CDM undertook a geotechnical study of the site to evaluate the engineering properties of the subsurface soils. The geotechnical evaluation was prepared as a separate report in January 2001.

The investigation described herein was intended as an initial investigation of subsurface conditions at the site and was not meant to include a comprehensive site investigation of the landfill area. CDM undertook this limited investigation to take advantage of the field work being conducted for geotechnical purposes and to give RIAC and the Rhode Island Department of Transportation (RIDOT) preliminary data concerning whether landfill operations have impacted soil, groundwater and/or soil gas in this area. More comprehensive investigations will likely be required to provide adequate information for landfill closure. If RIAC chooses not to pursue cargo building construction at the landfill, responsibility for further landfill investigations and closure will revert back to RIDOT.

1.1 Site Description and History

The landfill area is bounded to the west and northwest by industrial property, to the north by the southern end of Runway 34-16, to the east by the wetlands at the end of the runway and a former City of Warwick dump, and to the south by residential property. The landfill covers approximately 24 acres and is almost completely surrounded by wetlands. The landfill surface is vegetated with low growing shrubs and grasses and occasional stands of small trees with maximum height of about 20 feet. Numerous piles and small areas of solid waste are located throughout the landfill, although no drums or containers that may store hazardous waste were noted on the ground surface during CDM's field investigations or site visits. A Locus Map is provided on **Figure 1-1** and a Site Plan is provided on **Figure 1-2**, contained in the report back pocket.

Correspondence from Truk-Away and Sanitas Waste Disposal to the Division of Solid Waste Management during the 1970's that have been made available to CDM suggests that the site is underlain by extensive deposits of peat. The waste materials placed in the landfill are not well documented but reference is made to "rubbish and construction demolition debris." The removal of batteries from the landfill has been reported to have occurred in the past. No evidence has been presented to CDM to suggest hazardous waste disposal has occurred at the site.



Base Map: USGS Quad - East
Greenwich, RI - 1975
Scale 1" = 2083'

Limited Environmental Site Investigation Report
Former Truk Away Landfill
Warwich, Rhode Island

Figure 1-1
Site Locus

CDM Camp Dresser & McKee Inc.

Section 2
Description of Field Activities

This section describes field activities conducted as part of this limited subsurface investigation, which included:

- excavation of test pits around the landfill perimeter to delineate the edge of waste
- wetland flagging
- advancement of soil borings, including the collection and laboratory analysis of soil samples
- installation of six monitoring wells
- monitoring well development
- groundwater sampling and laboratory analysis; and
- soil vapor monitoring.

2.1 Edge of Waste Delineation

To delineate the limits of waste at the landfill, TMC Services, Inc. of Bellingham, Massachusetts excavated test pits at 23 perimeter locations. Up to four test pits were excavated at each location until the approximate line of waste was encountered. Test pits were excavated on October 18 and October 19, 2000 with a CAT 426B backhoe and a CAT 315B excavator. Test pit depths varied from 0.5 feet to 12 feet below ground surface. A CDM representative monitored the test pits in the field. **Table 2-1** gives a summary of the conditions encountered in the test pits.

The approximate locations of the test pits and the approximate extent of waste are shown on **Figure 1-2**. Observations made during test pit excavations indicate that the limits of waste generally correspond to, and extend into, the edge of wetlands to the north and east and the fence line/property to the south and west.

2.2 Wetland Delineation

During August and September 2000, Applied Bio-Systems Inc. (ABS) of Kingston, Rhode Island delineated six wetland areas located at the site. The wetland flags were later field surveyed and are shown on Figure 1-2. The wetland delineation method employed follows the guidelines established by the Army Corps of Engineers 1987 Wetland Delineation Manual and RIDEM - Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act (April, 1998).

Wetland 1 (Flag Numbers 100-118) is a small wetland area located within an open area just inside of the property fence from the Industrial Drive entrance way. This wetland appears to have been created from excavation work and it may be classified by RIDEM as either an Area Subject to Flooding (ASF) or an Emergent Plant Community. The wetland area is contained within an area of fill soils and the dominant vegetation includes: wool grass (Scirpus cyperinus) and soft rush (Juncus

TABLE 2-1

SUMMARY OF TEST PIT EXPLORATIONS
FORMER TRUK-AWAY LANDFILL SITE
T. F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Test Pit	Exploration Depth (ft.)	Cover Thickness (ft.)	Strata Description	
			Waste	Sand & Gravel
1	3.0	0.5	Grey silt and sand, some plastic, rebar	NE
1A	6.0	0.5	Grey silt and sand, some plastic	NE
1B	2.5	0.5	Grey silt and sand, some plastic	NE
1C	7.0	NE	NE	6.5 ft. brown sand & gravel/0.5 ft. grey silty sand
2	5.0	0.5	Grey silt and sand, some plastic and aluminum	NE
2A	3.0	NE	Grey/black, plastic, metal, glasslittle grey silt, sand	NE
3	2.0	NE	Grey/black, plastic, paper, glass, wood, little grey silt, sand	NE
4	4.0	NE	NE	1.0 ft. brown sand & gravel, 3.0 ft. grey silt & sand
4A	1.0	0.5	Brown sand & gravel, some plastic, glass	NE
5	3.0	NE	Grey/black, wood, metal, clothing, little grey silt and sand	NE
6	4.0	0.5	Brown & grey sand & gravel, little metal, wood	NE
6A	5.0	4.5	Dark brown/black clothing, sticky material	NE
7	3.5	1	Black plastic & clothing, little black cohesive peat	NE
8	2.0	0.25	Black peat & plastic, rubber, and paint	NE
9	2.0	0.25	Brown sand & gravel, some metal, plastic, clothing	NE
9A	2.0	0.25	Brown, sand & gravel, some plastic	NE
10	1.0	NE	Brown to grey sand, gravel & plastic	NE
11	1.0	0.1	Grey metal & plastic	NE
12	10.0	NE	NE	Brown to dark grey sand & gravel
12A	0.5	NE	Black plastic	NE
13	5.0	NE	NE	Black to brown sand & gravel
13A	2.0	0.5	Brown - grey sand & gravel, some plastic	NE
14	2.0	0.5	Black peat, plastic & rubber	NE
15	1.0	NE	Black plastic	NE
15A	5.0	NE	NE	NE
16	1.0	NE	Grey clothing & plastic	NE
16A	12.0	NE	NE	Grey sand & gravel
17	2.0	0.1	Grey plastic & trash	NE
17A	12.0	NE	NE	NE
18	4.0	NE	Grey metal & plastic	NE
18A	12.0	NE	NE	Brown sand & gravel
19	12.0	NE	Brown sand & gravel, little aluminum, plastic	NE
20	6.0	0.1	2.0ft black to grey metal, brick, plastic	Brown sand & gravel
21	5.0	NE	NE	Brown sand & gravel
21A	3.0	NE	Grey to black plastic	NE
22	3.0	NE	Grey to black plastic	NE
22A	12.0	NE	NE	Grey sand & gravel
23	5.0	1	Grey to black plastic, wood, metal	NE

Notes:

1. Elevations are in feet and refer to NGVD 1929.

NE Indicates strata or groundwater not encountered

A brown to black fiborous peat was observed in Test Pits 15A, 16A and 17A

effusus). This wetland will probably be classified as an ASF since the vegetation within the wetland is so sparse and it appears to be flooded only during storm events. Regardless, the wetland area is too small to receive a 50-foot Perimeter Wetland. Sheet 60 of the Soil Survey of Rhode Island classifies this wetland area as having a Dumps (Du) soil unit. This soil unit consists of areas used for trash disposal (Rector, USDA, 1981)

Wetland 2 (Flag Numbers 200-205) is another small wetland area located just inside of the property fence from the Industrial Drive entranceway. This wetland also appears to have been created from excavation work. However, this wetland will likely be classified as an Emergent Plant Community by RIDEM. The wetland consists of fill soils and is dominated with plants, which include common reed (Phragmites australis) and purple loosestrife (Lythrum salicaria). The Soil Survey of Rhode Island classifies this wetland as having a Dumps (Du) soil unit, an area used for trash disposal. The wetland area is also too small to receive a 50-foot Perimeter Wetland.

Wetland 3 (Flag Numbers 300-313) is a wetland located adjacent to the southern edge of the existing pathway into the property. Also, this wetland area appears to have been created from past excavation activities. This wetland of fill soils and is predominately an Emergent Plant Community consisting of vegetation that includes common reed and purple loosestrife. The Soil Survey of Rhode Island classifies this wetland as having a Dumps (Du) soil unit, an area used for trash disposal. This wetland is also too small to receive a 50-foot Perimeter Wetland.

Wetland 4 (Flag Numbers 400-420) is a large wetland area located along the southern edge of the property. The majority of the wetland in the vicinity of the airport property consists largely of common reed. The Soil Survey of Rhode Island depicts the wetland area as an isolated wetland complex consisting of Sudbury sandy loam (Ss), a moderately well drained soil unit and Walpole sandy loam (Wa), a poorly drained soil unit. This wetland unit will likely be classify this as a Marsh with a 50 foot Perimeter Wetland extended from the biological (flagged) edge as area within RIDEM jurisdiction.

Wetland 5 (Flag Numbers 500-532) is a small wetland area located adjacent to the northern edge of the existing pathway into the property, opposite wetland 3. This wetland also may have been created from past excavation activities based on the uneven terrain. This wetland is dominated by plants that include: pussy willow (Salix discolor), soft rush, purple loosestrife, fox sedge (Carex vulpinoidea), and pale smartweed (Polygonum lapathifolium). The Soil Survey of Rhode Island classifies this wetland as having a Dumps (Du) soil unit, an area used for trash disposal. This wetland area will likely be classify as a Shrub Wetland and it is too small to receive a 50-foot Perimeter Wetland.

Wetland 6 (#s 600-655) is a large wetland complex located along the northern portion of the landfill area. The wetland area is associated with a large stream complex part

of Buckeye Brook. The stream will either have a 100 foot Riverbank Wetland (if the stream is less than 10 feet in width on average) or a 200 foot Riverbank Wetland (if the stream is greater than 10 feet in width on average) extended from the riverbank edge of the channel as area within RIDEM jurisdiction. The vegetated wetland area consists primarily of common reed, willow, sweet pepperbush (Clethra alnifolia), Japanese bamboo (Polygonum cuspidatum), and yellow birch (Betula alleghaniensis). The wetland is classified by RIDEM as a Wooded Swamp and will have a 50-foot Perimeter Wetland extended from the flagged edge.

2.3 Soil Boring Advancement

To define subsurface conditions within the limits of the site, New Hampshire Boring Inc. of Derry, New Hampshire advanced eight test borings (MW-1, SB-2, MW-3, SB-4, MW-5, MW-6, MW-7, MW-8) at the site from November 6 through November 22, 2000. A CDM representative monitored the test borings in the field .

The test borings were drilled using an all terrain vehicle (ATV) drill rig. All test borings fully penetrated the existing landfill soils and were terminated approximately 30 feet into the naturally deposited, inorganic sand and gravel stratum underlying the site. Test boring depths ranged from 32 feet to 77 feet below the existing ground surface.

Split-spoon sampling was conducted at five foot intervals at each boring location in accordance with ASTM D1586 (2-inch diameter sampler driven 24 inches by blows from a 140-pound hammer falling freely for a 30-inch drop). The number of blows required to drive the sampler each 6-inch increment was recorded and the Standard Penetration Resistance (N-value) was determined as the sum of the blows over the middle 12-inches of penetration. Soil samples were screened for the presence of volatile organic compounds (VOCs.) through use of a photoionization detector (PID).

Water levels in each test boring were estimated from the conditions of the samples obtained during drilling and by the observed water levels within the borehole at the time of drilling. Test borings, where monitoring wells were not installed (SB-2 and SB-4), were backfilled with a cement-bentonite grout to an elevation approximately 5 feet above the bottom of the landfill material. Waste material and spoil material was used to fill in the remainder of the two test borings. Material not used to backfill the hole was containerized in 55 gallon drums. Logs of the test borings, prepared by the driller and reviewed by CDM, are included in Appendix A. The approximate locations of the explorations are shown on Figure 1-2.

2.3.1 Subsurface Soil Conditions

Subsurface soil conditions were interpreted from the test borings conducted within and around the area of proposed construction and our understanding of the local geology. The test pits were not used to interpret the subsurface conditions, only to delineate the waste at the site. Test borings drilled within and around the perimeter of the landfill typically encountered waste and soils overlying naturally deposited

sand and gravel. Waste was encountered in all of the test borings with the exception of MW-6.

Landfill cover material, consisting of loose to medium dense tan fine to coarse sand with varying amounts of gravel and silt, was encountered in several of the borings taken within the limits of the landfill. Cover material was not encountered in perimeter test borings SB-4 and MW-7. Cover thickness ranged from 1 to 5 feet with N values ranging from 4 to 29.

Waste soils typically consisted of loose to very dense wood, paper, glass, metal, wire and plastic. Waste thickness ranged from 15 to 33 feet with N values ranging from 4 to 100 blows for 3 inches. In test borings MW-3, SB-4, MW-5, and MW-6 the waste extended into the underlying peat for a thickness ranging from 5 to 30 feet. Samples taken within the peat consisted of dark brown fibrous organic peat with varying amounts of waste, silt, and sand.

All of the test borings that encountered peat, with the exception of MW-3, contained waste mixed in with peat for the full depth of the stratum. MW-3 contained an additional 3 feet of peat not containing waste. In test borings MW-5 and MW-6, the waste extended into the underlying sands and gravels of the site for approximately 5 to 8 feet. Total waste thickness encountered within the test borings ranged from 20 to 40 feet. Test borings MW-1, SB-2, and MW-7, which did not encounter peat, were located in the most northern and eastern sections of the landfill, near the southern end of Runway 34-16 and along the wetlands to the east.

The natural inorganic soils encountered below the waste and peat deposits typically consisted loose to dense, gray, fine to coarse sand and gravel, with varying amounts of silt. The loose sand and gravel layer was typically encountered below the peat deposit. All test borings were terminated in the sand and gravel layer. The thickness of this layer was at least 32 to 42 feet.

A summary of subsurface material observed during boring advancement explorations is presented in **Table 2-2**. At each of the six boring locations where monitoring wells were installed, the soil sample with the highest PID reading from each boring was submitted to AMRO Laboratories for laboratory analyzed for total petroleum hydrocarbons (TPH) by EPA Method 418.1, VOCs by EPA Method 8260, semi-volatile organic compounds (SVOCs) by EPA Method 8270, pesticides by EPA Method 8081, PCBs by EPA Method 8082, Total Organic Carbon (TOC) and TAL metals by EPA Method 200/6000/7000 series.

Laboratory analysis results for soil samples are summarized on **Table 2-3**. A review of the data reveals that none of the soil samples contain VOCs, SVOCs or metals (except arsenic) in concentrations exceeding RIDEM industrial/commercial direct exposure or leachability criteria. Arsenic was reported at 17 mg/kg in the 20'-22' sample from MW-1, 9.1 mg/kg in the 10'-12' sample from MW-7 and at 6.8 mg/kg in the 45'-47' sample from MW-8. The RIDEM industrial/commercial direct exposure

TABLE 2-2

SUMMARY OF TEST BORING EXPLORATIONS
FORMER TRUK-AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Exploration No.	Approx. Ground Surface Elevation	Exploration Depth (feet)	Strata Thickness (ft)			Depth to Groundwater (feet)
			Waste	Peat	Sand & Gravel	
MW-1	29.5	52	20	NE	>32	14.5
SB-2	41.8	62	30	NE	>32	25
MW-3	43.3	77	40	4	>33	27
SB-4	17.0	62	30	NE	>32	2.5
MW-5	28.5	72	40	NE	>32	13.5
MW-6	31.0	72	32	NE	>42	20
MW-7	19.0	32	NE	NE	>32	6
MW-8	31.5	62	30	NE	>32	16

Notes:

1. Elevations are in feet and refer to NGVD 1929.

NE Indicates strata or groundwater not encountered

> Indicates strata not fully penetrated

Table 2-3
Laboratory Analysis Results of Soil Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Boring/Well Identification Sample Depth (feet)	MW-1 20-22	MW-3 70-72	MW-5 45-47	MW-6 50-52	MW-7 10-12	MW-8 45-47	RIDEM I/C DEC (mg/kg)	RIDEM Leachability Criteria (mg/kg)
Volatile Organic Compounds (mg/kg)								
Chlorobenzene	0.09	0.55	ND	ND	ND	ND	10,000	100
m,p-Xylene	0.037	0.29	ND	ND	ND	0.035	10,000	10,000
o-Xylene	ND	0.044	ND	ND	ND	ND	10,000	10,000
Trichloroethene	ND	0.039	ND	ND	ND	ND	520	20
Ethylbenzene	ND	0.082	ND	ND	ND	ND	10,000	62
Isopropylbenzene	ND	0.046	ND	ND	ND	ND	10,000	NE
1,3,5-Trimethylbenzene	ND	0.036	ND	ND	ND	ND	NE	NE
1,2,4-Trimethylbenzene	ND	0.13	ND	ND	ND	ND	NE	NE
Semi-Volatile Organic Compounds (mg/kg)								
Bis(2-ethylhexyl)phthalate	0.47	ND	4.5	ND	ND	ND	410	NE

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
I/C DEC - Industrial/Commercial Direct Exposure Criteria

Table 2-3
Laboratory Analysis Results of Soil Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Boring/Well Identification Sample Depth (feet)	MW-1 20-22	MW-3 70-72	MW-5 45-47	MW-6 50-52	MW-7 10-12	MW-8 45-47	RIDEM I/C DEC (mg/kg	RIDEM Leachability Criteria (mg/kg)
TAL Metals (mg/kg)							(mg/kg)	
Aluminum	8600	5700	2900	5200	7400	5900	NE	NE
Antimony	ND	ND	ND	ND	ND	ND	820	NE
Arsenic	17	ND	ND	ND	9.1	6.8	3.8	NE
Barium	ND	ND	ND	ND	ND	ND	10,000	NE
Beryllium	ND	ND	ND	ND	ND	ND	1.3	NE
Cadmium	ND	ND	ND	ND	ND	ND	1000	NE
Chromium	17	8.0	6.7	13	13	10	10,000	NE
Cobalt	10	7.2	ND	ND	12	ND	NE	NE
Copper	17	11	9.5	7.7	24	12	10,000	NE
Iron	36000	14000	8300	9900	21000	16000	NE	NE
Lead	9.6	7.2	9.7	4.8	15	6.9	500	NE
Magnesium	4400	2200	1500	1700	3500	3200	NE	NE
Manganese	280	160	170	230	390	180	10,000	NE
Nickel	19	16	7.4	7.1	20	14	10,000	NE
Potassium	860	400	690	1500	770	570	NE	NE
Selenium	ND	ND	ND	ND	ND	ND	10,000	NE
Silver	ND	ND	ND	ND	ND	ND	10,000	NE
Thallium	ND	ND	ND	ND	ND	ND	140	NE
Vanadium	11	9.3	ND	13	14	8.9	10,000	NE
Zinc	51	61	22	30	44	32	10,000	NE
Mercury	ND	ND	ND	ND	ND	ND	610	NE
Total Petroleum Hydrocarbons (ug/kg)	ND	ND	ND	ND	54	ND	2500	NE
Total Organic Carbon (ug/kg)	5600	2100	2100	850	12,000	4600	NE	NE
Percent Moisture	13.8	10.4	13.5	19.3	18	8.7	NE	NE
Pesticides (ug/kg)	ND	ND	ND	ND	ND	ND	NE	NE
PCBs (ug/kg)	ND	ND	ND	ND	ND	ND	10,000	10000

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
I/C DEC - Industrial/Commercial Direct Exposure Criteria
Shaded values exceed RIDEM criteria, although the observed arsenic concentrations may be attributable to background conditions.

criteria for arsenic is 3.8 mg/kg. The concentrations of soil arsenic may be at background levels or no higher than other urban soils in the area.

None of the soil samples analyzed were reported to contain PCBs or pesticides above the laboratory method detection limit. Only one soil sample was reported to contain TPHs at a concentration above the laboratory method detection limit, the 10'-12' sample from MW-7 was reported to contain TPH at 54 micrograms per kilogram (ug/kg).

2.4 Monitoring Well Installation

Six monitoring wells were installed in completed boreholes MW-1, MW-3, MW-5, MW-6, MW-7, and MW-8 as part of the subsurface investigation. The monitoring wells were installed at depths ranging from 13 feet to 34 feet below ground surface. Ten foot screens were placed 7 feet below the measured ground surface level. The monitoring wells were backfilled with bentonite to the bottom of the screen.

Monitoring well screen was constructed of 2-inch diameter PVC with 0.020-inch machine-slots. Monitoring well riser was constructed of two inch threaded PVC. The well screen was backfilled using a sand pack to a level of three feet above the top of the screen interval. Sandpack was allowed to settle while slowly removing downhole tools. The remaining length of borehole was backfilled around the riser with bentonite and cement slurry. A road box was constructed approximately 2.5 feet above ground surface.

2.5 Groundwater Monitoring Well Development and Sampling

On November 28, 2000, the six newly installed monitoring wells were developed by evacuating a minumum of 50 gallons from each well. At each of the monitoring wells, groundwater appeared to be free of excess fines after the removal of 50 gallons. Well development water was containerized adjacent to each well in 55 gallon drums. On that date, floating product appeared to be present in MW-3 (approximately 2 feet in thickness) and MW-5 (less than ¼ inch in thickness). In addition, a strong landfill gas odor was noted from MW-1.

On December 13, 2000, CDM collected groundwater samples from each of the six newly installed monitoring wells. Prior to collecting groundwater samples, a minimum of three well volumes were removed from each well and containerized in a 55-gallon drum. In addition, purged water was field screened for temperature, specific conductance, dissolved oxygen and pH to document aquifer stabilization prior to sample collection. The groundwater samples were placed in appropriate glassware, kept in an iced cooler and transported to AMRO Environmental Laboratories.

Groundwater samples were analyzed for the following parameters: Hazardous Substance List (HSL) VOCs according to EPA Method 8260, semi-volatile organic compounds (SVOCs) according to EPA Method 8270, TAL metals by EPA Method 200/6000/7000 series, nitrate nitrogen, alkalinity, chemical oxygen demand, chlorides, total dissolved solids, total cyanide, sulfate, pesticides by EPA Method 8081, and PCBs by EPA Method 8082.

The laboratory analysis results for groundwater samples are summarized on **Table 2-4**. A review of the results indicates that two petroleum compounds were detected in groundwater samples above RIDEM GB groundwater objectives. The groundwater sample from MW-3 contained the greatest number of compounds detected and generally at the highest concentrations. As noted previously, a layer of free product measuring approximately 2 feet in thickness was detected on groundwater in this well. The two compounds detected in groundwater at MW-3 above RIDEM groundwater standards, with their concentration in parenthesis included: toluene (1,700 ug/l), and ethylbenzene (2,500 ug/l). Of all the VOCs detected, benzene and naphthalene were detected with the highest frequency, detected at concentrations exceeding RIDEM groundwater standards in five of the six monitoring wells.

None of the groundwater samples were reported to contain PCBs or pesticides above RIDEM groundwater standards. The parameters detected in site groundwater are typical of what might be expected at a landfill that accepted residential and commercial refuse. Exceedances of applicable GB criteria are few and sporadic. One concern is the appearance of floating material in MW-3, which may represent a continuing source of groundwater contaminants and may require further investigation. This concern is validated by a comparable mix of contaminants appearing in MW-8, (which is hydraulically down gradient from MW-3) including the only other GB criteria exceedance.

2.6 Determination of Groundwater Flow Direction

On December 13, 2000 and prior to well purging, CDM measured the depth to groundwater from the top of each of the six groundwater monitoring well casings. Since the elevation of each well casing was determined through field survey, groundwater elevations were determined by subtracting the depth to groundwater from the top of well casing. A summary of the groundwater elevation is presented on **Table 2-5**. A Groundwater Contour Map is presented on Figure 2-1 and indicates that site groundwater is flowing radially away from the center of the landfill to the north, east and south toward area wetlands

2.7 Soil Gas Probes

On November 15 and 16, 2000, CDM installed 16 vapor probes at the site to measure soil gas concentrations for landfill parameters. All vapor probes were driven down to a depth of four feet. After extracting the gas probe, Teflon tubing was then placed down the hole. Bentonite was packed around the tubing to create an air tight seal.

Table 2-4
Laboratory Analysis Results of Groundwater Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Monitoring Well Identification	MW-1	MW-3	MW-5	MW-6	MW-7	MW-8	MW-8*	RIDEM GB Groundwater Objective (ug/l)
Volatile Organic Compounds (ug/l)								
2-Butanone	ND	1800	26	12	ND	100	NA	NE
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	590	NA	NE
Acetone	16	140	39	19	10	270	NA	NE
Vinyl chloride	7.0	28	ND	ND	ND	ND	NA	NE
Methylene chloride	ND	610	ND	ND	ND	ND	NA	NE
Dichlorodifluoromethane	ND	ND	ND	8.0	ND	ND	NA	NE
Chloroethane	1600	11000	11	ND	63	370	NA	NE
1,1-Dichloroethene	6.3	2700	ND	ND	ND	ND	NA	7
cis-1,2-Dichloroethene	9.1	99	2.8	ND	ND	ND	NA	2400
1,2-Dichloroethane	ND	75	ND	ND	ND	ND	NA	110
1,1,1-Trichloroethene	ND	710	ND	ND	ND	ND	NA	3100
Naphthalene	67	170	45	52	ND	55	NA	NE
4-Isopropyltoluene	2.7	25	ND	ND	ND	ND	NA	NE
Toluene	2.4	1700	10	2.8	ND	1300	NA	1700
m,p-Xylene	550	8200	490	99	ND	8300	NA	NE
o-Xylene	ND	2300	6.4	3.5	ND	1300	NA	NE
Benzene	23	44	15	1	5.0	27	NA	140
Isopropylbenzene	6.4	52	7.2	7.3	ND	ND	NA	NE
n-Propylbenzene	6.1	90	8.9	10	ND	ND	NA	NE
1,3,5-Trimethylbenzene	15	190	15	7.9	ND	23	NA	NE
1,2,4-Trimethylbenzene	53	660	73	84	ND	78	NA	NE
sec-Butylbenzene	ND	30	ND	ND	ND	ND	NA	NE
Ethylbenzene	120	2500	18	4.4	ND	2100	NA	1600
Chlorobenzene	110	ND	100	32	ND	ND	NA	3200
1,4-Dichlorobenzene	21	ND	18	20	ND	ND	NA	NE
1,2-Dichlorobenzene	22	ND	4.0	ND	ND	ND	NA	NE
Semi-Volatile Organic Compounds (ug/l)								
Naphthalene	22	130	34	20	ND	40	42	NE
2-Methylnaphthalene	ND	11	ND	ND	ND	ND	ND	NE
Phenol	ND	16	ND	ND	ND	ND	ND	NE
2-Methylphenol	ND	11	ND	ND	ND	ND	ND	NE
4-Methylphenol	ND	190	ND	ND	ND	17	18	NE
2,4-Dimethylphenol	ND	23	ND	ND	ND	25	20	NE
3-Nitroaniline	ND	ND	ND	ND	ND	1600	1400	NE
Diethyl phthalate	ND	100	ND	ND	ND	37	35	NE
Bis(2-ethylhexyl)phthalate	ND	50	13	11	ND	ND	ND	NE

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
* - Field Duplicate
Shaded values are at concentrations at or above RIDEM groundwater standards.

Table 2-4
Laboratory Analysis Results of Groundwater Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Monitoring Well Identification Sample Depth (feet)	MW-1 20-22	MW-3 70-72	MW-5 45-47	MW-6 50-52	MW-7 10-12	MW-8 45-47	MW-8*	RIDEM GB Groundwater Objective (ug/l)*
TAL Metals (ug/l)								
Aluminum	2700	670	520	3200	NA	890	1300	NE
Antimony	ND	ND	ND	ND	NA	ND	ND	NE
Arsenic	58	ND	31	ND	NA	ND	28	NE
Barium	250	820	290	570	NA	520	480	NE
Beryllium	ND	ND	ND	ND	NA	ND	ND	NE
Cadmium	ND	ND	ND	ND	NA	ND	ND	NE
Chromium	ND	ND	ND	37	NA	16	26	NE
Cobalt	ND	ND	ND	ND	NA	ND	ND	NE
Copper	ND	ND	ND	ND	NA	ND	ND	NE
Iron	94,000	100,000	38,000	31,000	NA	86,000	100,000	NE
Lead	11	ND	ND	ND	NA	680	1200	NE
Magnesium	11,000	17,000	56,000	60,000	NA	22,000	15,000	NE
Manganese	1200	690	350	290	NA	1200	1600	NE
Nickel	ND	ND	50	130	NA	ND	ND	NE
Potassium	12,000	22,000	100,000	190,000	NA	31,000	18,000	NE
Selenium	ND	ND	ND	ND	NA	ND	ND	NE
Silver	ND	ND	ND	ND	NA	ND	ND	NE
Thallium	ND	ND	ND	ND	NA	ND	ND	NE
Vanadium	ND	ND	ND	ND	NA	ND	ND	NE
Zinc	36	590	130	850	NA	260	450	NE
Mercury	ND	ND	ND	ND	NA	0.50	0.86	NE
Chemical Oxygen Demand (mg/l)	78	370	240	520	69	260	280	NE
Total Dissolved Solids (mg/l)	510	920	1000	1900	560	710	530	NE
Alkalinity (mg/l as CaCO3)	400	720	1300	1800	300	750	580	NE
Nitrogen-Nitrate (mg/l)	ND	0.16	ND	0.62	0.21	ND	ND	NE
Chloride (mg/l)	30	160	190	650	210	73	36	NE
Sulfate (mg/l)	5.4	1.2	0.95	0.83	3	1.6	2.0	NE
Cyanide, Total (mg/l)	ND	ND	ND	ND	ND	ND	ND	NE
Pesticides (ug/l)								
alpha-BHC	0.011	ND	ND	ND	ND	ND	ND	NE
beta-BHC	0.0082	ND	ND	ND	ND	ND	ND	NE
delta-BHC	ND	ND	ND	ND	0.015	ND	ND	NE
4,4-DDE	0.055	0.060	ND	ND	ND	ND	ND	NE
4,4-DDD	ND	0.058	ND	ND	ND	ND	ND	NE
4,4-DDT	ND	0.220	ND	ND	ND	ND	ND	NE
gamma-Chlordane	ND	0.063	ND	0.038	ND	ND	ND	NE
alpha-Chlordane	ND	0.13	ND	ND	ND	ND	ND	NE
Dieldrin	ND	0.021	ND	ND	ND	ND	ND	NE
Endosulfan II	ND	0.084	ND	ND	ND	ND	ND	NE
PCBs (ug/l)								
Aroclor 1016	ND	ND	ND	ND	ND	0.27	ND	NE

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
* - Field Duplicate
* Groundwater GB Objectives are only established for VOCs.

TABLE 2-5
SUMMARY OF GROUNDWATER ELEVATION DATA

FORMER TRUK-AWAY LANDFILL SITE
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

		December 13, 2000	
Well Identification	Casing Elevation (feet)	Depth to Water (Feet)	Water Table Elevation ^ (feet)
MW-1	33.1	16.76	16.34
MW-3	46.1	21.86	24.24
MW-5	33	15.12	17.88
MW-6	40.1	21.97	18.13
MW-7	20.6	4.68	15.92
MW-8	37.5	20.87	16.63

^ Elevations based on National Geoditical Vertical Datum.

Soil gas was extracted for five minutes before chemical concentrations were recorded. Vapor probe locations are shown on Figure 1-2. Vapor probes were installed around the landfill perimeter and on top of the landfill in the area of proposed cargo buildings. Portable gas monitoring equipment was used to determine the concentrations of hydrogen sulfide, methane, carbon dioxide, oxygen and VOCs in shallow soil gas.

A summary of the soil gas field screening is presented on **Table 2-6**. As expected at a landfill that has not been closed with a gas venting system, the screening results indicate that shallow soil gas at the site under vacuum contains elevated methane concentrations. These results are typical of landfill gas. As illustrated in Table 2-6, where methane, the indicator of decomposition is high, oxygen is low in concentration.

TABLE 2-6
SUMMARY OF SOIL GAS READINGS

FORMER TRUK-AWAY LANDFILL SITE
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Vapor Probe	VOCs (ppm^)	Hydrogen Sulfide (ppm)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Lower Explosive Limit (%)
VP-1	13.2	0.4	0.2	9.1	13.3	4
VP-2	0	6	59.7	38.4	2.1	Exceeded Instrument Limit
VP-3	15.5	0.1	0	1.3	20.6	0
VP-4	10	0.2	0	1.3	20.6	0
VP-5	0	0.4	14.5	8.5	13.9	292
VP-6	NR	NR	NR	NR	NR	NR
VP-7	9	0	0	0.2	20.8	0
VP-8	0	0.8	26.9	17.3	5.9	560
VP-9	1.7	0.3	3.9	9	11.7	76
VP-10	0	0.6	11.9	14.5	2.2	236
VP-11	7	0	0	0.1	19.8	0
VP-12	0	30	62.3	31	0.5	Exceeded Instrument Limit
VP-13	71.8	0.1	0	6.7	13.4	0
VP-14	23.8	0.1	0	6.1	14.8	0
VP-15	55.7	0.4	0	0.4	19.6	0
VP-16	0	3.7	66.4	33.4	0.3	Exceeded Instrument Limit

(1) No readings were collected at VP-6 due to wet conditions.
(2) Volatile organic compound (VOCs) readings were collected using a ThermoElectron Model 580B Organic Vapor Meter.
(3) Hydrogen sulfide readings were taken with an Interscan H2S Meter.
(4) All other readings were collected with a GEM 500 air monitoring device.

Section 3
Summary and Discussions

CDM conducted this Limited Environmental Subsurface Investigation of the Former Truk Away Landfill at the T.F. Green Airport in Warwick, Rhode Island. The investigation described in this report was intended as an initial investigation of subsurface conditions at the site and was not designed to include a comprehensive site investigation of the landfill area.

The Rhode Island Airport Corporation (RIAC) is investigating the feasibility of constructing four 30,000 square foot cargo buildings on the landfill. In conjunction with the environmental investigation of the site, CDM undertook a geotechnical study of the site to evaluate the engineering properties of the subsurface soils and to conduct a limited feasibility evaluation of foundation systems for the proposed buildings, taxiway and ramps. The geotechnical evaluation was prepared as a separate report in January 2001.

- Field activities conducted as part of this limited subsurface investigation included:
- excavation of test pits around the landfill perimeter to delineate the edge of waste;
- wetland flagging;
- advancement of soil borings, including the collection and laboratory analysis of soil samples
- installation of six monitoring wells;
- monitoring well development
- groundwater sampling and laboratory analysis; and
- soil vapor monitoring.

Key findings of the investigation included:

- The landfill's edge of waste generally corresponded to the site's fence line/property line to the south and west and with the edge of wetlands to the north and east.

- The soil and groundwater laboratory analysis results and field screening of soil vapor indicates that subsurface conditions at the site are typical of what would be expected at a landfill containing residential and/or commercial waste. The only compound detected in soil above RIDEM Industrial/Commercial Direct Exposure or Leachability Criteria was arsenic at two locations. The concentrations of arsenic detected (9.1 mg/kg and 6.8 mg/kg) could in fact be attributable to background conditions and are within the range of a typical urban fill. The only compounds detected in groundwater samples at or above RIDEM GB Groundwater Objectives were toluene at 1.7 mg/l in MW-3 and ethylbenzene at 2.5 mg/l in MW-3 and 2.1 mg/l in MW-8. Floating product, however, was detected at a thickness of about 2

feet in MW-3 which is located in the center of the landfill. As expected at a landfill of this nature, high concentrations of methane was detected in soil gas at the site.

Given the potential future use of this site as a location for air cargo buildings, the following issues should be addressed:

1. Since filling activities have been reported as recently as 1995, it is believed that regulations require a final landfill cover. Landfill closure components would include: a cover system, a landfill gas venting system and perimeter drainage. It is important to note that a significant portion of the landfill closure elements will also be elements of site development. For example, the observed high methane in soil gas would require a venting system to vent landfill gases away from work areas at the site. Also, a significant portion of the site will require grading to construct the cargo buildings at a desirable grade. Lastly, wetland areas to the north and east will have to be filled to ensure proper side slope stabilization and surface drainage collection, key elements to any landfill closure. It is likely that RIAC would have to replicate an area equivalent to the filled area either at or near the airport or within Warwick city limits. These three items would be required regardless of application of RIDEM landfill closure requirements. Final requirements for landfill closure should be detailed after discussions with RIDEM officials.

2. The feasibility of RIAC constructing cargo buildings at the landfill is dependent on the cost associated with addressing geotechnical and environmental issues. A preliminary cost estimate to address the geotechnical issues was presented in a separate document. In order to prepare a preliminary estimate of the cost associated with landfill closure requirements contrasted against the cost that would be incurred due to site development as noted above, CDM recommends a meeting with regulatory officials to discuss RIDEM's requirements for landfill closure. Once these requirements are discussed, CDM will proceed with a conceptual design of the proposed site development and estimate the cost associated with landfill closure elements that would not otherwise be part of site development.

3. In addition to the wetland filling that will be required to ensure proper landfill closure to the north and east, the construction of a taxiway from Runway 34-16 to the proposed cargo buildings will also require wetlands filling due north of the landfill. CDM recommends a meeting with RIDEM to discuss this issue, including consideration of a potential compensatory wetland construction program within Warwick city limits to off-set the wetland impacts from the proposed cargo building project.

4. The floating product detected in MW-3 should be further investigated to determine the extent of floating product at the site. In addition, a sample of the product should be collected and identified by laboratory techniques (i.e.,

fingerprint analysis or petroleum identification) as to the type of product on site groundwater in MW-3.

Appendix A

Soil Boring Logs

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: MW-1 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/16/00 **Date End:** 11/17/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/17	**Depth:** 14.5'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	14"	1-5		S-1: Moist, medium dense tan to dark brown
-					6-5	CAP 2'	fine, medium, coarse sand, some gravel, trace
-							silt.
-							
5'	S-2	5'-7'	24"	2"	7-10		S-2: Moist, medium dense, black wood, wire
-					12-9		glass.
-							
-							
-							
10'	S-3	10'-12'	24"	8"	3-25	WASTE	S-3: Moist, dense, black, paper, plastic, wood,
-					8-10		metal. Gray fine sand, some gravel in tip.
-							
-							
-							
15'	S-4	15'-17'	24"	4"	13-14		S-4: Wet, medium dense, black to dark gray
-					15-18		fine sand, some gravel, trace metal.
-							
-							
-						20'	
20'	S-5	20'-22'	24"	12"	13-16		S-5: Wet, dense, dark gray and tan fine,
-					16-12		medium, coarse sand and gravel, little silt.
-							
-							
-							
25'	S-6	25'-27'	24"	12"	12-10	SAND	S-6: Same as above
-					12-11	and	
-						GRAVEL	
-							
-							
30'	S-7	30'-32'	24"	12"	20-26		S-7: Wet, dense, black fine to medium sand
							and
					24-26		gravel, some to little shale fragments.

Driller: M.THOMPSON **Helper: D. PALMER** **Inspector:**

Remarks: Page 1 of 2.

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Phone: (603) 437-1610 **New Hampshire Boring, Inc.** Fax: (603) 437-0034
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Boring #: MW-1 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/16/00 **Date End:** 11/17/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 14.5'	**Casing:** out	**Stabilization Per.**
11/17			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	16"	17-15		S-8: Wet, dense, gray fine, medium, coarse
-					17-23		sand, some to little gravel, trace silt.
-							
-							
-							
40'	S-9	40'-42'	24"	19"	13-21		S-9: Same as above
-					22-28		
-							
-							
-							
45'	S-10	45'-47'	24"	20"	18-19		S-10: Same as above
-					16-20		
-							
-							
-							
50'	S-11	50'-52'	24"	8"	12-15		S-11: Same as above
-					16-21		
-							TERMINATED BORING AT 52'
-							Installed well
-							
55'							
-							
-							
-							
60'							

Driller: M.THOMPSON **Helper: D. PALMER** **Inspector:**

Remarks: Page 2 OF 2.

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: SB-2 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/6/00 **Date End:** 11/7/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 25'	**Casing:** out	**Stabilization Per.**
11/7			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	22"	4-12		S-1: Top 2": Moist, medium dense glass, fine,
-					17-32	CAP 2'	medium, coarse sand.
-							Bottom 20": Moist, medium dense, tan fine
-							sand and gravel.
5'	S-2	5'-7'	24"	4"	4-13		S-2: Moist, medium dense, black cardboard
-					2-3		wire, blue plastic.
-							
-							
-							
10'	S-3	10'-12'	15"	2"	52-60		S-3: Moist, very dense, black plastic,
-					100/3"		cardboard.
-							
-							
-							
15'	S-4	15'-17'	24"	6"	7-9	WASTE	S-4: Wet, very dense, black plastic, aluminum,
-					66-31		decomposed waste, wood.
-							
-							
-							
20'	S-5	20'-22'	24"	2"	4-5		S-5: Wet, loose, black wood, decomposed
-					3-23		waste.
-							
-							
-							
25'	S-6	25'-27'	24"	3"	11-8		S-6: Wet, medium dense, black wood, metal,
-					10-10		glass, rubber, cardboard.
-							
-							
-							S-7: Top 2": Wet, medium dense, black waste.
30'	S-7	30'-32'	24"	18"	8-9	30'	Bottom 16": Gray fine, medium, coarse sand,
					14-16		some gravel.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: **Page 1 of 2**

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Fax: (603) 437-0034

Boring #: SB-2 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/6/00 **Date End:** 11/7/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/7	**Depth:** 25'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
35'	S-8	35'-37'	24"	8"	8-12 18-20		S-8: Wet, medium dense, gray fine to medium sand, trace silt, gravel.
40'	S-9	40'-42'	24"	8"	5-7 10-11	SAND and GRAVEL	S-9: Top 4": Wet, medium dense, gray fine sand, little silt. Bottom 4": Dark gray fine, medium, coarse sand, little gravel.
45'	S-10	45'-47'	24"	8"	11-16 18-22		S-10: Wet, dense, dark gray fine, medium coarse sand and gravel, little silt.
50'	S-11	50'-52'	24"	6"	12-9 6-11		S-11: Wet, medium dense, dark gray fine medium, coarse sand and gravel. (Rock fragments)
55'	S-12	55'-57'	24"	7"	17-16 11-12		S-12: Top 5": Wet, medium dense dark gray fine, medium, coarse sand and gravel. Bottom 2": dark gray fine to medium sand, trace silt, gravel.
60'	S-13	60'-62'	24"	11"	7-11 11-18		S-13: Wet, medium dense, dark gray fine to medium sand, gravel. TERMINATED BORING AT 62'

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: **Page 2 of 2**

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: MW-3 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/20/00 **Date End:** 11/22/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/21	**Depth:** 27'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	12"	2-2		S-1: Moist, loose, tan to brown fine, medium,
-					4-12	CAP 2'	coarse sand, little gravel, trace silt.
-							
-							
5'	S-2	5'-7'	24"	7"	8-11		S-2: Top 2": Same as above
-					6-7		Bottom 5": moist, medium dense, plastic.
-							
-							
-							
10'	S-3	10'-12'	24"	12"	13-6		S-3: Moist, medium dense, wood, plastic
-					9-9		
-							
-							
-							
15'	S-4	15'-17'	24"	8"	17-8		S-4: Moist, medium dense, plastic metal wire
-					8-12		
-							
-							
-							
20'	S-5	20'-22'	24"	10"	4-10	WASTE	S-5: Moist, medium dense, plastic wood.
-					8-7		
-							
-							
-							
25'	S-6	25'-27'	24"	8"	6-8		S-6: Wet, medium dense, wood, plastic, black,
-					10-19		waste, some gray fine sand, little silt.
-							
-							
-							
30'	S-7	30'-32'	24"	6"	4-4		S-7: Wet, loose, wood, plastic, metal, gray
					4-7		fine sand, little silt.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

emarks: Page 1 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

Phone: (603) 437-1610 | New Hampshire Boring, Inc. | Fax: (603) 437-0034
P.O. Box 165
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E-Mail: nhb@nhboring

Boring #: MW-3 | Project: RHODE ISLAND AIRPORT CORP | Project #:

Project Address: CARGO FACILITIES | City: WARWICK | State: RI | Zip:

Date Start: 11/20/00 | Date End: 11/22/00 | Location: See Plan

Casing: H-S-A	Sampler:	Casing: 4-1/4" ID	Sampler:
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/21	Depth: 27'	Casing: out	Stabilization Per. Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-						35'	
35'	S-8	35'-37'	24"	6"	9-12	WASTE	S-8: Wet, medium dense, metal, wood,
-					9-8	and	plastic, fibrous peat.
-						PEAT	
-							
-							
40'	S-9	40'-42'	24"	24"	2-2	40'	S-9: Top 2": Same as above
-					3-5		Middle 10" wet, soft, fibrous peat.
-	U-1	42.5'-44.5'	24"	8"	PUSH	PEAT	Bottom 12": Medium stiff peat.
-							U-1: 4" wet brown peat and metal.
-						44'	4" gray fine sand, some silt.
45'	S-10	45'-47'	24"	12"	3-4		
-					3-4		
-							
-							
-							
50'	S-11	50'-52'	24"	5"	7-8	SAND	S-11: Wet, medium dense, gray fine,
-					8-10	and	medium, coarse sand and gravel, little
-						GRAVEL	silt.
-							
-							
55'	S-12	55'-57'	24"	3"	14-12		S-12: Same as above
-					10-9		
-							
-							
-							
60'	S-13	60'-62'	24"	0"	9-8		S-13: Same as above
					17-17		

Driller: M.THOMPSON | Helper: D. PALMER | Inspector:

Remarks: Page 2 of 3

S/#: Sample | PEN: Penetration | REC: Recovery | S/C: Strata Change

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Boring #: MW-3 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/20/00 **Date End:** 11/22/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/21	**Depth:** 27'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
65'	S-14	65'-67'	24"	18"	14-7 6-7		S-14: Wet, medium dense, gray fine, medium, coarse some to little gravel, trace silt.
70'	S-15	70'-72'	24"	8"	9-7 9-8		S-15: Same as above
75'	S-16	75'-77'	24"	10"	14-11 12-16		S-16: Wet, medium dense, black fine, medium, coarse sand and gravel, trace silt. 2nd spoon – gray fine to medium sand, trace gravel. TERMINATED BORING AT 77' Well installed
80'							
85'							
90'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

emarks: Page 3 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: SB-4 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/8/00 **Date End:** 11/8/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 2.5'	**Casing:** out	**Stabilization Per.**
11/8			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	1-1		S-1: Dry, very soft, dark brown fibrous peat,
-					3-2		little glass, fabric.
-							
-							
5'	S-2	5'-7'	24"	1"	woh-woh		S-2: Moist, very soft dark brown peat, little
-					woh-woh		sand, gravel, wood, fabric.
-							
-							
-							
10'	S-3	10'-12'	24"	14"	woh-woh	WASTE	S-3: Wet, very soft, dark brown peat,
-					woh-woh	and	trace glass, fabric.
-						PEAT	
-							
-							
15'	S-4	15'-17'	24"	1"	woh-woh		S-4: Wet, very soft, dark brown peat, little
-					woh-woh		fine to medium sand, trace glass, fabric
-							
-							
-							
20'	S-5	20'-22'	24"	0"	wor-wor		S-5: No recovery.
-					wor-wor		
-							
-							
-							
25'	S-6	25'-27'	24"	24"	wor-wor		S-6: Wet, very soft, brown peat. (less fibrous
-					wor-wor		more silt) trace glass.
-							
-							
-							
						30'	
30'	S-7	30'-32'	24"	0"	3-4		S-7: Wet, loose, gray fine, medium, coarse
					4-5		sand and gravel, little silt in tip.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: **Page 1 of 2**

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: SB-4 | Project: RHODE ISLAND AIRPORT CORP | Project #:

Project Address: CARGO FACILITIES | City: WARWICK | State: RI | Zip:

Date Start: 11/8/00 | Date End: 11/8/00 | Location: See Plan

Casing: H-S-A	Sampler:	Casing: 4-1/4" ID	Sampler:
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/8	Depth: 2.5'	Casing: out	Stabilization Per. Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
35'	S-8	35'-37'	24"	1"	3-3 3-5		S-8: Same as above
40'	S-9	40'-42'	24"	8"	3-3 3-4	SAND and GRAVEL	S-9: Same as above – trace silt.
45'	S-10	45'-47'	24"	0"	4-4 3-4		S-10: Same as above.
50'	S-11	50'-52'	24"	5"	11-10 9-10		S-11: Wet, medium dense, gray sand and gravel, some silt.
55'	S-12	55'-57'	24"	15"	2-3 6-6		S-12: Wet, loose, gray sand and gravel, trace silt. S-13: Top 5": Wet, loose, fine to medium sand, trace silt, gravel.
60'	S-13	60'-62'	24"	7"	1-1 3-4		Bottom 2": Sand and gravel, trace silt. TERMINATED BORING AT 62'

Driller: M.THOMPSON | Helper: D. PALMER | Inspector:

emarks: Page 2 of 2

S/#: Sample | PEN: Penetration | REC: Recovery | S/C: Strata Change

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Boring #: MW-5 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End:** 11/13/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/13	**Depth:** 13.5'	**Casing:** out	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	14"	2-3	CAP 1'	S-1: Moist, loose topsoil.
-					2-3		4" tan sand and gravel, trace silt.
-							6" plastic, newspaper.
-							
5'	S-2	5'-7'	24"	2"	5-3		S-2: Moist, loose, black, wood, plastic.
-					1-3		
-							
-							
-							
10'	S-3	10'-12'	11"	0"	60-100/5"	WASTE	S-3: No recovery. Moist, very dense, black,
-							rubber, wood, fabric in tip
-							
-							
-							
15'	S-4	15'-17'	24"	3"	3-1		S-4: Wet, loose, black wood, plastic, fabric.
-					4-2		2nd spoon – peat mixed with waste.
-							
-							
-							
20'	S-5	20'-22'	24"	1"	4-3		S-5: Wet, loose, black, wood, glass, plastic.
-					3-5		2nd spoon – No recovery.
-							
-							
-						25'	
25'	S-6	25'-27'	24"	0"	8-3	WASTE	S-6: Wet, soft, dark brown peat and gray
-					1-5	and	soft waste.
-						PEAT	2nd spoon – gray waste
-							
-							
30'	S-7	30'-32'	24"	2"	WOH-1		S-7: Wet, very soft dark brown peat and
					2-2		metal.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: Page 1 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-5 | Project: RHODE ISLAND AIRPORT CORP | Project #:

Project Address: CARGO FACILITIES | City: WARWICK | State: RI | Zip:

Date Start: 11/9/00 | Date End: 11/13/00 | Location: See Plan

Casing: H-S-A	Sampler:	Casing: 4-1/4" ID	Sampler:
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/13	Depth: 13.5'	Casing: out	Stabilization Per. Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-						35'	
35'	S-8	35'-37'	24"	22"	WOR-WOR	WASTE	S-8: Top 18" – wet loose gray silt.
-					WOH-WOH	and	Bottom 4" – gray fine sand, trace metal.
-						SAND	
-						and	
-						SILT 40'	
40'	S-9	40'-42'	24"	12"	4-4		S-9: Wet, loose, gray fine sand, some to
-					4-4		little silt.
-							
-							
-							
45'	S-10	45'-47'	24"	12"	3-3		S-10: Wet, loose, tan fine, medium,
-					4-4		coarse sand, some gravel, little silt.
-						SAND	
-						and	
-						GRAVEL	
50'	S-11	50'-52'	24"	12"	4-6		S-11: Same as above
-					5-4		
-							
-							
-							
55'	S-12	55'-57'	24"	20"	9-6		S-12: Wet, medium dense, gray fine,
-					5-5		medium, coarse sand and gravel,
-							little silt.
-							
-							
60'	S-13	60'-62'	24"	8"	7-9		S-13: Same as above
					8-9		

Driller: M.THOMPSON | Helper: D. PALMER | Inspector:

Remarks: Page 2 of 3

S/#: Sample | PEN: Penetration | REC: Recovery | S/C: Strata Change

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Boring #: MW-5 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End:** 11/13/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 15'	**Casing:** out	**Stabilization Per.**
11/13			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
65'	S-14	65'-67'	24"	10"	9-13		S-14: Wet, dense, gray fine sand and silt.
-					18-20		
-							
-							
-							
70'	S-15	70'-72'	24"	9"	13-16		S-15: TOP 5": Same as above.
-					14-17		Bottom 4": Gray fine to medium sand.
-							
-							TERMINATED BORING AT 72'
-							Well installed
75'							
-							
-							
-							
-							
80'							
-							
-							
-							
-							
85'							
-							
-							
-							
-							
90'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

emarks: Page 3 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-6 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/13/00 **Date End:** 11/15/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/15	20'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	1-2	CAP	S-1: Moist, loose, tan and black fine, medium
-					2-2	2'	coarse sand, little gravel.
-							
-							
5'	S-2	5'-7'	17"	4"	5-15		S-2: Moist, very dense, black fabric and
-					100/5"		plastic.
-							
-							
-							
10'	S-3	10'-12'	24"	0"	8-6		S-3: No recovery. Advanced 2nd spoon,
-					7-5		wood and metal in tip.
-							
-							
-							
15'	S-4	15'-17'	24"	0"	5-5	WASTE	S-4: No recovery. 2nd spoon, wood, metal,
-					8-6		plastic in tip
-							
-							
-							
20'	S-5	20'-22'	8"	5"	10-100/2"		S-5: Wet, very dense, black wood, metal,
-							oily sheen.
-							
-							
-							
25'	S-6	25'-27'	24"	7"	8-5		S-6: Wet, medium dense, black wood, plastic
-					5-4		glass.
-							
-							
-							
30'	S-7	30'-32'	24"	24"	3-2	Waste and Peat	S-7: Wet, soft dark brown fibrous peat,
					2-2		trace metal, plastic.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

emarks: PAGE 1 OF 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-6 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/13/00 **Date End:** 11/57/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 20'	**Casing:** out	**Stabilization Per.**
11/15			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	1"	7-5	Waste and Sand	S-8: Wet, medium dense, tan fine, medium,
-					5-4		coarse sand and gravel, little peat, metal.
-							
-							
-							
40'	S-9	40'-42'	24"	12"	4-4		S-9: Wet, loose, gray fine sand, little to
-					3-3	SAND	trace sand.
-						and	
-						GRAVEL	
-							
45'	S-10	45'-47'	24"	12"	4-4		S-10: Same as above
-					4-5		
-							
-							
-							
50'	S-11	50'-52'	24"	17"	9-9		S-11: Same as above
-					6-7		
-							
-							
-							
55'	S-12	55'-57'	24"	18"	4-4		S-12: Top 3": Wet, stiff gray clay, middle 10"
-					6-10		gray silt, some fine sand, little clay.
-							Bottom 5": gray fine sand, some gravel, trace
-							silt.
-							
60'	S-13	60'-62'	24"	8"	6-4		S-13: Wet, loose, gray fine, medium,
					5-5		coarse sand and gravel, trace silt.

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

Remarks: PAGE 2 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-6 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/13/00 **Date End:** 11/15/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:** 20'	**Casing:** out	**Stabilization Per.**
11/15			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
65'	S-14	65'-67'	24"	16"	5-4	SAND	S-14: Top 12" wet, loose, gray fine, medium,
-					5-7	and	coarse sand, some gravel.
-						GRAVEL	Bottom 4" gray fine sand, little silt.
-							
-							
70'	S-15	70'-72'	24"	5"	9-9		S-15: Wet, medium dense, dark gray gravel,
-					8-9		little sand, trace silt.
-							TERMINATED BORING AT 72'
-							Well installed
-							
75'							
-							
-							
-							
-							
80'							
-							
-							
-							
-							
85'							
-							
-							
-							
-							
90'							

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

emarks: PAGE 3 of 3

S/#: Sample | **PEN:** Penetration | **REC:** Recovery | **S/C:** Strata Change

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Boring #: MW-7 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/9/00 **Date End:** 11/9/00 **Location:** See Plan

Casing: H-S-A	**Sampler:**	**Casing:** 4-1/4" ID	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth:**	**Casing:**	**Stabilization Per.**
11/9	6'	out	Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	18"	2-5		S-1: Moist, black fine, medium, coarse sand,
-					5-5		some gravel, little silt.
-							
-							
5'	S-2	5'-7'	24"	8"	2-2		S-2: Wet, black to gray fine, medium, coarse
-					3-2		sand, some gravel, wood, trace silt.
-							
-							
-							
10'	S-3	10'-12'	24"	12"	woh/1		S-3: Wet, gray fine, medium, coarse sand,
-					2-3		some gravel, wood, trace silt.
-							
-						Sand	
-						&	
15'	S-4	15'-17'	24"	8"	8-10	Gravel	S-4: Dark gray wet, fine, medium, coarse
-					9-9		sand and gravel, some silt, little clay.
-							
-							
-							
20'	S-5	20'-22'	24"	17"	7-13		S-5: Same as Above
-					16-21		
-							
-							
-							
25'	S-6	25'-27'	24"	19"	4-7		S-6: Wet, gray fine, medium, coarse sand,
-					10-10		some gravel, trace silt.
-							
-							
-							
30'	S-7	30'-32'	24"	20"	5-10		S-7: Same as above
					19-20		TERMINATED BORING AT 32'

Driller: M.THOMPSON **Helper:** D. PALMER **Inspector:**

emarks:

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

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Boring #: MW-8 | Project: RHODE ISLAND AIRPORT CORP | Project #:

Project Address: CARGO FACILITIES | City: WARWICK | State: RI | Zip:

Date Start: 11/15/00 | Date End: 11/16/00 | Location: See Plan

Casing: H-S-A	Sampler:	Casing: 4-1/4" ID	Sampler:
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 11/16	Depth: 16'	Casing: out	Stabilization Per. Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	19"	2-4		S-1: Moist, loose, tan fine, medium, coarse
-					4-4		sand, some gravel.
-							
-						CAP 6'	
5'	S-2	5'-7'	24"	10"	4-2		S-2: Top 7": Same as above
-					6-3		Bottom 3": Black, plastic, glass.
-							
-							
-							
10'	S-3	10'-12'	24"	6"	5-7		S-3: Wet, medium dense, black plastic, glass,
-					5-5		wood, paper, metal.
-							
-							
-							
15'	S-4	15'-17'	24"	5"	3-6		S-4: Wet, loose, black, metal, plastic, wood,
-					3-12		wood, rubber.
-							
-							
-						WASTE	
20'	S-5	20'-22'	24"	4"	7-4		S-5: Wet, medium dense, black, metal, wood,
-					9-8		oily sheen.
-							
-							
-							
25'	S-6	25'-27'	24"	5"	8-17		S-6: Wet, dense black, wood, some
-					30-19		gray, fine to medium sand, trace gravel.
-							
-							
-						30'	
30'	S-7	30'-32'	24"	12"	8-6		S-7: Wet, medium dense, gray fine, medium,
					10-9		coarse sand and gravel, little silt, trace metal.

Driller: M.THOMPSON | Helper: D. PALMER | Inspector:

Remarks: PAGE 1 OF 2

S/#: Sample | PEN: Penetration | REC: Recovery | S/C: Strata Change

Phone: (603) 437-1610 **New Hampshire Boring, Inc.** Fax: (603) 437-0034
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Boring #: MW-8 **Project: RHODE ISLAND AIRPORT CORP** **Project #:**

Project Address: CARGO FACILITIES **City:** WARWICK **State:** RI **Zip:**

Date Start: 11/15/00 **Date End: 11/16/00** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date:	**Depth: 16'**	**Casing: out**	**Stabilization Per.**
11/16			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6	S/C	SAMPLE DESCRIPTION
-							
-							
-							
-							
35'	S-8	35'-37'	24"	12"	9-12		S-8: Wet, medium dense, gray fine, medium,
-					11-13		coarse sand and gravel, little silt.
-							
-							
-							
40'	S-9	40'-42'	24"	12"	16-13		S-9: Same as above
-					11-12	SAND	
-						and	
-						GRAVEL	
-							
45'	S-10	45'-47'	24"	15"	10-18		S-10: Same as above
-					15-17		
-							
-							
-							
50'	S-11	50'-52'	24"	2"	7-4		S-11: Same as above with sand seam.
-					4-4		
-							
-							
-							
55'	S-12	55'-57'	24"	12"	6-11		S-12: Wet, medium dense, dark gray sand
-					9-8		and gravel, little silt.
-							
-							
-							S-13: Wet, medium dense, dark gray, fine,
60'	S-13	60'-62'	24"	8"	10-11		medium, coarse sand, some gravel, trace silt.
					15-19		TERMINATED BORING AT 62' Well Set

Driller: M.THOMPSON **Helper: D. PALMER** **Inspector:**

emarks: PAGE 2 of 2

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Appendix B

Laboratory Analysis Results

AMRO Environmental Laboratories Corporation

111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 · FAX: (603) 429-8496

January 29, 2001

Matt Dentch
Camp Dresser and McKee
1 Cambridge Place
50 Hampshire Street
Cambridge, MA 02139
TEL: (617) 452-6338
FAX: (617) 452-8000

RE: RIAC

Order No.: 0012182

Dear Matt Dentch:
AMRO Environmental Laboratories Corp. received 7 samples on 12/14/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds National Environmental Laboratory Accreditation Conference (NELAC), state, and EPA requirements. A copy of the appropriate state and/or NELAC Certificate is attached. Please see the enclosed Case Narrative for quality control deviations that were encountered during the analyses associated with this project.

The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This report consists of a total of 160 pages. This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

WORK ORDER SAMPLE SUMMARY

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Project: RIAC
Lab Order: 0012182
Date Received: 12/14/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0012182-01A	MW-1	12/13/00
0012182-01B	MW-1	12/13/00
0012182-01C	MW-1	12/13/00
0012182-01D	MW-1	12/13/00
0012182-01E	MW-1	12/13/00
0012182-01F	MW-1	12/13/00
0012182-02A	MW-8	12/13/00
0012182-02B	MW-8	12/13/00
0012182-02C	MW-8	12/13/00
0012182-02D	MW-8	12/13/00
0012182-02E	MW-8	12/13/00
0012182-02F	MW-8	12/13/00
0012182-02G	MW-8	12/13/00
0012182-03A	MW-6	12/13/00
0012182-03B	MW-6	12/13/00
0012182-03C	MW-6	12/13/00
0012182-03D	MW-6	12/13/00
0012182-03E	MW-6	12/13/00
0012182-03F	MW-6	12/13/00
0012182-03G	MW-6	12/13/00
0012182-04A	MW-7	12/13/00
0012182-04B	MW-7	12/13/00
0012182-04D	MW-7	12/13/00
0012182-04E	MW-7	12/13/00
0012182-04F	MW-7	12/13/00
0012182-04G	MW-7	12/13/00
0012182-05A	MW-3	12/13/00
0012182-05B	MW-3	12/13/00
0012182-05C	MW-3	12/13/00
0012182-05D	MW-3	12/13/00
0012182-05E	MW-3	12/13/00
0012182-05F	MW-3	12/13/00
0012182-05G	MW-3	12/13/00
0012182-06A	MW-5	12/13/00
0012182-06B	MW-5	12/13/00
0012182-06C	MW-5	12/13/00
0012182-06D	MW-5	12/13/00

CLIENT:	Camp Dresser and McKee
Project:	RIAC
Lab Order:	0012182
Date Received:	12/14/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0012182-06E	MW-5	12/13/00
0012182-06F	MW-5	12/13/00
0012182-06G	MW-5	12/13/00
0012182-07A	DUP-1	12/13/00
0012182-07B	DUP-1	12/13/00
0012182-07C	DUP-1	12/13/00
0012182-07D	DUP-1	12/13/00
0012182-07F	DUP-1	12/13/00
0012182-07G	DUP-1	12/13/00

Lab Order: 0012182
Client: Camp Dresser and McKee
Project: RIAC

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0012182-01A	MW-1	12/13/00	Aqueous	COD, High Level			12/28/00
0012182-01B				Cyanide, Total			12/27/00
0012182-01C				ARSENIC, Total		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/21/00
				LEAD, Total		12/21/00	12/22/00
				MERCURY, Total		12/26/00	12/26/00
				SELENIUM, Total		12/21/00	12/22/00
				THALLIUM, Total		12/21/00	12/26/00
0012182-01D				Alkalinity, Total			12/27/00
				Ion Chromatography			12/27/00
				Ion Chromatography			12/27/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-01E				VOLATILES by GC/MS		12/23/00	12/26/00
				VOLATILES by GC/MS		12/27/00	12/27/00
0012182-01F				ORGANOCHLORINE PESTICIDES		12/18/00	12/20/00
				PCBS IN WATER		12/18/00	12/20/00
				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
0012182-02A	MW-8			COD, High Level			12/28/00
0012182-02B				Cyanide, Total			12/27/00
0012182-02C				ARSENIC, Total		12/21/00	12/26/00
				ICP METALS, TOTAL		12/21/00	12/21/00
				ICP METALS, TOTAL		12/21/00	12/22/00
				LEAD, Total		12/21/00	12/22/00
				MERCURY, Total		12/26/00	12/26/00
				SELENIUM, Total		12/21/00	12/26/00
				THALLIUM, Total		12/21/00	12/26/00

Lab Order: 0012182
Client: Camp Dresser and McKee
Project: RIAC

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0012182-02D	MW-8	12/13/00	Aqueous	Alkalinity, Total			12/27/00
				Ion Chromatography			12/27/00
				Ion Chromatography			12/27/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-02E				VOLATILES by GC/MS		12/23/00	12/26/00
				VOLATILES by GC/MS		12/27/00	12/27/00
0012182-02F				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/19/00
				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
0012182-02G				ORGANOCHLORINE PESTICIDES		12/18/00	12/20/00
				PCBS IN WATER		12/18/00	12/20/00
0012182-03A	MW-6			COD, High Level			12/28/00
0012182-03B				Cyanide, Total			12/26/00
0012182-03C				ARSENIC, Total		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/21/00
				ICP METALS, TOTAL		12/21/00	12/22/00
				LEAD, Total		12/21/00	12/22/00
				MERCURY, Total		12/26/00	12/26/00
				SELENIUM, Total		12/21/00	12/22/00
				THALLIUM, Total		12/21/00	12/26/00
0012182-03D				Alkalinity, Total			12/27/00
				Ion Chromatography			12/27/00
				Ion Chromatography			12/27/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-03E				VOLATILES by GC/MS		12/23/00	12/26/00
0012182-03F				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
0012182-03G				ORGANOCHLORINE PESTICIDES		12/18/00	12/20/00

Lab Order: 0012182
Client: Camp Dresser and McKee
Project: RIAC

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0012182-03G	MW-6	12/13/00	Aqueous	PCBS IN WATER		12/18/00	12/20/00
0012182-04A	MW-7			COD, High Level			12/28/00
0012182-04B				Cyanide, Total			12/26/00
0012182-04D				Alkalinity, Total			12/27/00
				Ion Chromatography			12/28/00
				Ion Chromatography			12/28/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-04E				VOLATILES by GC/MS		12/26/00	12/27/00
0012182-04F				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
0012182-04G				ORGANOCHLORINE PESTICIDES		12/18/00	12/21/00
				PCBS IN WATER		12/18/00	12/20/00
0012182-05A	MW-3			COD, High Level			12/28/00
0012182-05B				Cyanide, Total			12/26/00
0012182-05C				ARSENIC, Total		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/21/00
				LEAD, Total		12/21/00	12/22/00
				MERCURY, Total		12/26/00	12/26/00
				SELENIUM, Total		12/21/00	12/22/00
				THALLIUM, Total		12/21/00	12/26/00
0012182-05D				Alkalinity, Total			12/27/00
				Ion Chromatography			12/28/00
				Ion Chromatography			12/28/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-05E				VOLATILES by GC/MS		12/27/00	12/27/00
				VOLATILES by GC/MS		12/23/00	12/26/00

Lab Order: 0012182
Client: Camp Dresser and McKee
Project: RIAC

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0012182-05F	MW-3	12/13/00	Aqueous	SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/19/00
				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
0012182-05G				ORGANOCHLORINE PESTICIDES		12/18/00	12/21/00
				PCBS IN WATER		12/18/00	12/20/00
0012182-06A	MW-5			COD, High Level			12/28/00
0012182-06B				Cyanide, Total			12/27/00
0012182-06C				ARSENIC, Total		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/21/00
				ICP METALS, TOTAL		12/21/00	12/22/00
				LEAD, Total		12/21/00	12/22/00
				MERCURY, Total		12/26/00	12/26/00
				SELENIUM, Total		12/21/00	12/22/00
				THALLIUM, Total		12/21/00	12/26/00
0012182-06D				Alkalinity, Total			12/27/00
				Ion Chromatography			12/28/00
				Ion Chromatography			12/28/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-06E				VOLATILES by GC/MS		12/26/00	12/27/00
0012182-06F				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
0012182-06G				ORGANOCHLORINE PESTICIDES		12/18/00	12/21/00
				PCBS IN WATER		12/18/00	12/20/00
0012182-07A	DUP-1			COD, High Level			12/28/00
0012182-07B				Cyanide, Total			12/27/00
0012182-07C				ARSENIC, Total		12/21/00	12/26/00
				ICP METALS, TOTAL		12/21/00	12/22/00
				ICP METALS, TOTAL		12/21/00	12/21/00
				LEAD, Total		12/21/00	12/26/00

Lab Order: 0012182
Client: Camp Dresser and McKee
Project: RIAC

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0012182-07C	DUP-1	12/13/00	Aqueous	MERCURY, Total		12/26/00	12/26/00
				SELENIUM, Total		12/21/00	12/26/00
				THALLIUM, Total		12/21/00	12/26/00
0012182-07D				Alkalinity, Total			12/27/00
				Ion Chromatography			12/28/00
				Ion Chromatography			12/28/00
				Nitrate in Water (Lachat)			12/15/00
				Total Dissolved Solids			12/20/00
0012182-07F				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/18/00
				SEMIVOLATILE ORGANICS, Aqueous		12/15/00	12/19/00
0012182-07G				ORGANOCHLORINE PESTICIDES		12/18/00	12/21/00
				PCBS IN WATER		12/18/00	12/20/00

CHAIN-OF-CUSTODY

AMRO Envi~~nmental Laboratories Corporation
111 Herrick Stre
Merrimack, N.H. 03054
Office: 603-424-2022 Fax: 603-429-8496

CHAIN OF CUSTODY RECORD

32370

Proj. No.	Project Name	Project State	PAGE ___ OF ___
	RIAC		

Samplers (Signature): [illegible]

Sta. No.	Date	Time	Comp	Grab	Station Location	Type Size, & No. of Containers	MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain	COD's	TCN	TAL Metals	Wet Chem NO3 Cl SO4 TDS Alk	VOC's 8260/SVOC's 8270	Pesticides/PCB 8081/8082	Remarks
MW-1	12/13/00			X	MW-1	4 Amber 2 VOA 4 Plastic		↓	↓	↓	↓	↓	↓	
MW-8	↓			↓	MW-8	↓		↓	↓	↓	↓	↓	↓	
MW-6	↓			↓	MW-6	↓		↓	↓	↓	↓	↓	↓	
MW-7	↓			↓	MW-7	↓		↓	↓	↓	↓	↓	↓	
MW-3	↓			↓	MW-3	↓		↓	↓	↓	↓	↓	↓	Petroleum identification
MW-5	↓			↓	MW-5	↓		↓	↓	↓	↓	↓	↓	" "
Dup-1	↓			↓	Dup-1	4 Plastic 4 Amber		↓	↓	↓	↓	↓	↓	
TripBlank	↓			↓	TripBlank	1 VOA						↓		VOC's 8260 only

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded **T.A.T. AUTHORIZATION NUMBER.**

AUTHORIZATION NO.________ **T.A.T. authorized by:**__________

Relinquished by (Signature)	Date Time	Received by (Signature)
[illegible]	12/14/00	[illegible] 12/14/00 12:30
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature) [illegible]	Date Time 12/14/00 1425	Received for Laboratory by: (Signature) Constance Carlow

☐ Fax to (phone)

Results needed

PO#

AMRO Project No. 0012182

Seal Intact? Yes No N/A

Send Results to: CDM

Remarks: MW-3 – MW-5 are saturated with Petroleum

White: Lab copy Yellow: Accompanies report Pink: Client copy

SAMPLE RECEIPT CHECKLIST

AMRO Environmental Laboratories Corporation

SAMPLE RECEIPT CHECKLIST

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

Client: CDM
Project Name: RIAC
Ship via: (circle one) Fed Ex., UPS, AMRO Courier,
and Del., Other Courier, Other:

AMRO ID: 00/2182
Date Rec.: 12-14-00
Date Due: 12-27-00

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Army Samples received in individual plastic bags?			✓	
2. Custody Seals present?			✓	
3. Custody Seals Intact?			✓	
4. Air Bill included in folder if received?			✓	
5. Is COC included with samples?	✓			(in 3 coolers)
6. Is COC signed and dated by client?	✓			50
7. Laboratory receipt temperature.				TEMP = 2° + 2°
Samples rec. with ice ✓ ice packs ___ neither ___				
8. Were samples received the same day they were sampled?		✓		
Is client temperature 4°C ± 2°C?	✓			
If no obtain authorization from the client for the analyses.				
Client authorization from: Date: Obtained by:				
9. Is the COC filled out correctly and completely?	✓			
10. Does the info on the COC match the samples?	✓			
11. Were samples rec. within holding time?	✓			No 3 later than used
12. Were all samples properly labeled?	✓			
13. Were all samples properly preserved?	✓			
14. Were proper sample containers used?	✓			
15. Were all samples received intact? (none broken or leaking)	✓			
16. Were VOA vials rec. with no air bubbles?	✓			
17. Were the sample volumes sufficient for requested analysis?	✓			
18. Were all samples received?		✓		see fax
19. VPH and VOA Soils only:			✓	
Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)				
Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk				
If M or SB:				
Does preservative cover the soil?				
If NO then client must be faxed.				
Does preservation level come close to the fill line on the vial?				
If NO then client must be faxed.				
Were vials provided by AMRO?				
If NO then weights MUST be obtained from client				
Was dry weight aliquot provided?				
If NO then fax client and inform the VOA lab ASAP.				
20. Subcontracted Samples:			✓	
What samples sent:				
Where sent:				
Date:				
Analysis:				
TAT:				
21. Information entered into:				
Internal Tracking Log?	✓			
Dry Weight Log?			✓	
Client Log?	✓			
Composite Log?			✓	
Filtration Log?			✓	

Received By: CC Date: 12-14-00 Logged in By: ST Date: 12-15-00
Labeled By: ST Date: 12-15-00 Checked By: Date:

NA= Not Applicable

AMRO Environmental
Laboratories Corporation

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

Please Circle if:
Sample= Soil
Sample= Waste

Sample ID	Analysis	Volume Sample	Preserv. Listed	Initial pH	Acceptable? Y or N	List Preserv. Added by AMRO	Solution ID # of Preserv	Volume Preservative Added	Final adjusted pH
01A-07A	COD	1x250P	H_2SO_4	1	Y				
01B	TCN	1x250P	NaOH	11	N	NaOH	ION	.5 ml	12
02B	TCN	1x250P	NaOH	8	N	NaOH	ION	1.25ml	12
03B	TCN	1x250P	NaOH	10	N	NaOH	ION	.5 ml	12
04B	TCN	1x250P	NaOH	12	Y				
05B	TCN	1x250	NaOH	9	N	NaOH	ION	1 ml	12
06B	TCN	1x250	NaOH	10	N	NaOH	ION	1 ml	12
07B	TCN	1x250	NaOH	10	N	NaOH	ION	1 ml	12
1,4,5,7C	metals	1x500P	HNO_3	<2	Y				
02C	metals	1x500	HNO_3	3	N	HNO_3	A03631	1 ml	<2
03C	metals	1x500P	HNO_3	6	N	HNO_3	A03631	1.5ml	<2
06C	metals	1x500P	HNO_3	4	N	HNO_3	A03631	1ml	<2
1D,3-7D	NO_3,Cl-	1LPL	—	7	Y				
↓	SO_4,TDS,				↓				
↓	ALK				↓				
01E-07E	VOC	2x44ml	HCl	—	↓				
3F 7F	SVOC	2x1LA	—	7	Y				
1,6F+8F	SVOC	2x1LA	—	8	Y				
1,2,4,5,7,8G	PEST/PCB	2-1LGAM	—	7	Y				
6G	PEST/PCB	2-1LGAM	—	8	Y				

pH Checked By: CC Date: 12-15-00 pH adjusted By: Date:

ION (NaOH)

STATE CERTIFICATE

State of New Hampshire
Environmental Laboratory Accreditation Program

Awards Primary Accreditation to

AMRO Environmental Laboratories
of
Merrimack, NH

For the analyses listed on the attached page(s) in accordance with the provisions of the NELAC Standards and Env-C 300.

Certificate Number: 100100-C

Date of Issue: January 24, 2001

Expiration Date: July 19, 2001

Program Manager

Continuing accreditation status is dependent on successful ongoing participation in the program.
Customers may verify the laboratory's current status by calling (603) 271-2991 or (603) 271-2998

NEW HAMPSHIRE ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

Laboratory: AMRO Environmental Laboratories Address: Merrimack, NH
Certificate Number: 100100-C Date of Issue: January 24, 2001 Expiration Date: July 19, 2001

ACCREDITS THE ABOVED MENTIONED LABORATORY FOR THE FOLLOWING ANALYSES:

(ANALYSES IN **UNDERLINED BOLD** ARE NOT EPA APPROVED FOR COMPLIANCE TESTING)

DRINKING WATER METALS

Aluminum:	EPA 200.7
Antimony:	EPA 200.7, EPA 200.9
Arsenic:	EPA 200.7, EPA 200.9
Barium:	EPA 200.7
Beryllium:	EPA 200.7, EPA 200.9
Cadmium:	EPA 200.7, EPA 200.9
Calcium:	EPA 200.7
Chromium:	EPA 200.7, EPA 200.9
Copper:	EPA 200.7, EPA 200.9
Iron:	EPA 200.7, EPA 200.9
Lead:	EPA 200.7, EPA 200.9
Mercury:	EPA 245.1
Nickel:	EPA 200.7, EPA 200.9
Selenium:	EPA 200.9
Silver:	EPA 200.7, EPA 200.9
Sodium:	EPA 200.7
Thallium:	EPA 200.9
Zinc:	EPA 200.7

DRINKING WATER INORGANIC CONTAMINANTS

Alkalinity:	**EPA 310.1**
Chloride	EPA 300.0, EPA 325.3
Chlorine, Total Residual:	SM 4500Cl G mod.
Chlorine, Free Residual:	SM 4500Cl G mod.
Conductivity	EPA 120.1
Cyanide, Total:	SM 4500-CN E
Fluoride	EPA 300.0, EPA 340.2
Fluoride	SM 4500-F E
Hardness by Calculation:	EPA 200.7
Nitrate-N:	EPA 353.2
Nitrite-N:	EPA 353.2
Orthophosphate	EPA 300.0
pH:	EPA 150.1
Sulfate	**EPA 375.4**, EPA 300.0
Total Filt. Residue (TDS):	SM 2540C
Turbidity:	EPA 180.1

INDIVIDUAL DRINKING WATER ORGANIC CONTAMINANTS

DBCP:	EPA 504.1
EDB:	EPA 504.1

WASTEWATER METALS

Aluminum:	EPA 200.7

WASTEWATER METALS Cont.)

Antimony:	EPA 200.7, EPA 204.2
Arsenic:	EPA 200.7, D297293C
Arsenic:	EPA 206.2
Barium:	EPA 200.7
Beryllium:	EPA 200.7
Cadmium:	EPA 200.7
Calcium:	EPA 200.7
Chromium:	EPA 200.7
Cobalt:	EPA 200.7
Copper:	EPA 200.7
Iron:	EPA 200.7
Lead:	EPA 200.7, EPA 239.2
Manganese:	EPA 200.7
Mercury:	EPA 245.1
Molybdenum:	EPA 200.7
Nickel:	EPA 200.7
Selenium:	EPA 200.7, EPA 270.2
Silver:	EPA 200.7
Thallium:	EPA 200.7, EPA 279.2
Vanadium:	EPA 200.7
Zinc:	EPA 200.7

WASTEWATER INORGANIC CONTAMINANTS

Alkalinity:	EPA 310.1
Ammonia-N:	EPA 350.2
BOD:	EPA 405.1
Chloride:	EPA 325.3, **EPA 300.0**
COD:	HACH 8000, EPA 410.4
Conductivity (Spec. Cond.):	EPA 120.1
Cyanide, Total:	EPA 335.2
Fluoride:	EPA 340.2, **EPA 300.0**
Hardness by Calculation:	EPA 200.7
Magnesium:	EPA 200.7
Nitrate by calculation:	EPA 353.2
Nitrate-Nitrite, Total:	EPA 353.2
Nitrate-N:	**EPA 300.0**
Oil & Grease:	EPA 413.1
Orthophosphate:	EPA 365.2, **EPA 300.0**
pH:	EPA 150.1
Potassium:	EPA 200.7
Residue, Filterable (TDS):	EPA 160.1
Residue, Non-Filt.	EPA 160.2
Residue, Total:	EPA 160.3
Sodium:	EPA 200.7
Sulfate:	EPA 375.4, **EPA 300.0**

This certificate supercedes all previously issued certificates.

Program Manager

NEW HAMPSHIRE ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

Laboratory: AMRO Environmental Laboratories Address: Merrimack, NH
Certificate Number: 100100-C Date of Issue: January 24, 2001 Expiration Date: July 19, 2001

ACCREDITS THE ABOVED MENTIONED LABORATORY FOR THE FOLLOWING ANALYSES:

WASTEWATER INORGANIC CONTAMINANTS (cont.)

TKN:	EPA 351.1
Total Phosphorus:	EPA 365.2
Total Phenolics:	EPA 420.1

PCBs IN WASTEWATER

PCB-Aroclor 1016:	EPA 608
PCB-Aroclor 1221:	EPA 608
PCB-Aroclor 1232:	EPA 608
PCB-Aroclor 1242:	EPA 608
PCB-Aroclor 1248:	EPA 608
PCB-Aroclor 1254:	EPA 608
PCB-Aroclor 1260:	EPA 608

PESTICIDES IN WASTEWATER

Aldrin:	EPA 608
a-BHC:	EPA 608
b-BHC:	EPA 608
d-BHC	EPA 608
g-BHC (Lindane):	EPA 608
Chlordane:	EPA 608
4,4'-DDD:	EPA 608
4,4'-DDE:	EPA 608
4,4'-DDT:	EPA 608
Dieldrin:	EPA 608
Endosulfan I:	EPA 608
Endosulfan II:	EPA 608
Endosulfan Sulfate:	EPA 608
Endrin:	EPA 608
Endrin Aldehyde:	EPA 608
Heptachlor:	EPA 608
Heptachlor Epoxide:	EPA 608

VOLATILE ORGANICS IN WASTEWATER

Benzene:	EPA 624
Bromodichloromethane:	EPA 624
Bromoform:	EPA 624
Bromomethane:	EPA 624
Carbon Tetrachloride:	EPA 624
Chloroethane:	EPA 624
Chloroform:	EPA 624
Chloromethane:	EPA 624
1,2-Dichlorobenzene:	EPA 624
1,3-Dichlorobenzene:	EPA 624
1,4-Dichlorobenzene	EPA 624
1,1-Dichloroethane:	EPA 624

VOLATILE ORGANICS IN WASTEWATER (Cont.)

1,2 Dichloroethane:	EPA 624
1,1-Dichloroethene:	EPA 624
t-1,2-Dichloroethene:	EPA 624
1,2-Dichloropropane:	EPA 624
t-1,3-Dichloropropene:	EPA 624
Ethylbenzene:	EPA 624
Methylene Chloride:	EPA 624
Tetrachloroethene:	EPA 624
1,1,2,2-Tetrachloroethane:	EPA 624
Toluene:	EPA 624
1,1,1 Trichloroethane:	EPA 624
1,1,2-Trichloroethane:	EPA 624
Trichloroethene:	EPA 624
Trichlorofluoromethane:	EPA 624
Vinyl Chloride:	EPA 624

WASTEWATER SEMIVOLATILE ORGANICS

Acenaphthene:	EPA 625
Anthracene:	EPA 625
Benzidine:	EPA 625
Benzo(a)anthracene:	EPA 625
Benzo(b)fuoranthene:	EPA 625
Benzo(a)pyrene:	EPA 625
Benzyl butyl phthalate:	EPA 625
Bis(2-chloroethyl) ether:	EPA 625
Bis(2-chloroethoxy) methane:	EPA 625
Bis(2-chloroisopropyl) ether:	EPA 625
Bis(2-ethylhexyl) phthalate:	EPA 625
4-Bromophenyl phenyl ether:	EPA 625
4-Chloro-3-methylphenol:	EPA 625
2-Chloronaphthalene:	EPA 625
2-Chlorophenol:	EPA 625
4-Chlorophenyl phenyl ether:	EPA 625
Chrysene:	EPA 625
Di-n-butyl phthalate:	EPA 625
Di-n-octyl phthalate:	EPA 625
3,3-Dichlorobenzidine:	EPA 625
2,4-Dichlorophenol:	EPA 625
Diethyl phthalate:	EPA 625
Dimethyl phthalate:	EPA 625
2,4-Dimethylphenol:	EPA 625
2,4-Dinitrophenol:	EPA 625
2,4-Dinitrotoluene:	EPA 625
2,6-Dinitrotoluene:	EPA 625
Fluoranthene:	EPA 625
Hexachlorobenzene:	EPA 625
Hexachlorobutadiene:	EPA 625

This certificate supercedes all previously issued certificates.

Charles M. Mayer
Program Manager

NEW HAMPSHIRE ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

Laboratory: AMRO Environmental Laboratories Address: Merrimack, NH
Certificate Number: 100100-C Date of Issue: January 24, 2001 Expiration Date: July 19, 2001

ACCREDITS THE ABOVED MENTIONED LABORATORY FOR THE FOLLOWING ANALYSES:

WASTEWATER SEMIVOLATILE ORGANICS

Hexachlorocyclopentadiene:	EPA 625
Hexachloroethane:	EPA 625
Indeno(1,2,3-c,d)pyrene:	EPA 625
Isophorone:	EPA 625
2-Methyl-4,6-dinitrophenol:	EPA 625
Nitrobenzene:	EPA 625
2-Nitrophenol:	EPA 625
4-Nitrophenol:	EPA 625
n-Nitrosodi-n-propylamine:	EPA 625
n-Nitrosodiphenylamine:	EPA 625
Pentachlorophenol:	EPA 625
Phenol:	EPA 625
Pyrene:	EPA 625
1,2,4-Trichlorobenzene:	EPA 625
2,4,6-Trichlorophenol:	EPA 625

This certificate supercedes all previously issued certificates.

Program Manager

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-NH012

AMRO ENVIRONMENTAL LAB
111 HERRICK ST
MERRIMACK, NH 03054-0000

Laboratory Director: Nancy Stewart

for the analysis of NON POTABLE WATER (CHEMISTRY)
POTABLE WATER (CHEMISTRY)

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Issued: 01 JUL 2000

Expires: 30 JUN 2001

Oscar C. Jacobs

Director, Division of Environmental Analysis

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 28 DEC 2000

M-NH012 AMRO ENVIRONMENTAL LAB
MERRIMACK NH

NON POTABLE WATER (CHEMISTRY) Effective Date 20 DEC 2000 Expiration Date 30 JUN 2001

Analyte	Method
ALDRIN	
ALUMINUM	
AMMONIA-N	
ANTIMONY	
ARSENIC	
BERYLLIUM	
BIOCHEMICAL OXYGEN DEMAND	
CADMIUM	
CALCIUM	
CHEMICAL OXYGEN DEMAND	
CHLORDANE	
CHLORIDE	
CHROMIUM	
COBALT	
COPPER	
DDD	
DDT	
DIELDRIN	
FLUORIDE	
HEPTACHLOR	
HEPTACHLOR EPOXIDE	
IRON	
KJELDAHL-N	
LEAD	
MAGNESIUM	
MANGANESE	
MERCURY	
MOLYBDENUM	
NICKEL	
NITRATE-N	
NON-FILTERABLE RESIDUE	
OIL AND GREASE	
ORTHOPHOSPHATE	
PH	
POLYCHLORINATED BIPHENYLS (OIL)	
POLYCHLORINATED BIPHENYLS (WATER)	
POTASSIUM	
SELENIUM	
SILVER	
SODIUM	
SPECIFIC CONDUCTIVITY	
STRONTIUM	

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 28 DEC 2000

M-NH012 AMRO ENVIRONMENTAL LAB
MERRIMACK NH

NON POTABLE WATER (CHEMISTRY) Effective Date 20 DEC 2000 Expiration Date 30 JUN 2001

Analyte	Method
SULFATE	
THALLIUM	
TOTAL ALKALINITY	
TOTAL CYANIDE	
TOTAL DISSOLVED SOLIDS	
TOTAL HARDNESS (CACO3)	
TOTAL PHENOLICS	
TOTAL PHOSPHORUS	
TOTAL RESIDUAL CHLORINE	
VOLATILE AROMATICS	
VOLATILE HALOCARBONS	
ZINC	

POTABLE WATER (CHEMISTRY) Effective Date 28 DEC 2000 Expiration Date 30 JUN 2001

Analyte	Method
1,2-DIBROMO-3-CHLOROPROPANE	
1,2-DIBROMOETHANE	
ANTIMONY	
ARSENIC	
BARIUM	
BERYLLIUM	
CADMIUM	
CALCIUM	
CHROMIUM	
COPPER	
CYANIDE	
FLUORIDE	
LEAD	
MERCURY	
NICKEL	
NITRATE-N	
NITRITE-N	
PH	
RESIDUAL FREE CHLORINE	
SELENIUM	
SODIUM	
SULFATE	
THALLIUM	
TOTAL ALKALINITY	
TOTAL DISSOLVED SOLIDS	
TURBIDITY	

CASE NARRATIVE

CASE NARRATIVE
0012182

GENERAL

1. Some of the samples were received with broken containers. The client was contacted and instructed the laboratory to do analyses with what ever could be salvaged from the coolers.

2. Some of the samples were received not properly preserved for Total Cyanide and Metals analyses. Additional amount of preservatives (sodium hydroxide for total cyanide and nitric acid for the metals) was added prior analyzing the samples.

3. No other QC deviations were observed.

GC/MS-VOLATILES
WATER

1. The method blank (MBLK-12/27/00) contained Carbon disulfide at 0.93 µg/L below the reporting limit of 2.0 µg/L.

2. The samples MW-8 (0012182-02B) and MW-3 (0012182-05B) both have raised reporting limits due to sample dilution.

3. The pH for sample MW-6 (0012182-03E) was 6 above the recommended pH =<2.

4. The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample MW-1 (0012182-01E. All %R's and %RPD's were within the laboratory control limits with the following exception:

    4.1 The compound Chlorobenzene recovered below the laboratory control limits (84-120%) in both the MS and MSD.

5. No other QC deviations were observed.

GC/MS-SEMIVOLATILES
WATER

1. The surrogate 2-fluorophenol recovered above the laboratory control limits (23-69%) in the following samples: MW-8 (0012182-02F), MW-3 (0012182-05F), and DUP-1 (0012182-07F) probably due to matrix interference.

2. The method blank (MB-3402) contained Bis (2-ethylhexyl) phthalate at 2.22µg/L below the reporting limit of 10µg/L.

3. The Matrix Spike Duplicate was not performed on sample MW-7 (0012182-04F) due to insufficient sample volume.

4. No other QC deviations were observed.

GC/ECD-PESTICIDES
WATER

1. The Matrix Spike Duplicate (MSD) was not performed due to insufficient sample volume. The Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) are provided.

2. Samples MW-8 (0012182-07F) and DUP-1 (0012182-07G) had reported recoveries for the surrogate Tetrachloro-m-xylene at 0% due to co-elution of non-target matrix interference. The surrogate could not be accurately integrated in the appropriate window.

3. The Matrix Spike (MS) was performed on sample MW-6 0012182-03G). All %R's were with in laboratory control limits with the following exceptions:

    3.1 The spike compound Heptachlor recovered above the laboratory control limits (1-164%) at 214% due to non-target matrix interference.

    3.2 The surrogate Tetrachloro-m-xylene recovered above laboratory control limits (40-117%) at 119%.

4. The Laboratory Control Sample (LCS-3407) and Laboratory Control Sample Duplicate (LCSD-3407) samples had all %R's and %RPD's within laboratory control limits with the following exceptions:

    4.1 The %RPD for Gamma-BHC was above the laboratory control limit of 15% at 17.1%.

5. No other QC deviations were observed.

GC/ECD-PCB
WATER

1. The batch Matrix spike (MS) was performed on sample 0012191-06A. All %R's are with in laboratory control limits with the following exception:

    1.1 The surrogate Decachlorobiphenyl recovered above the laboratory control limits (32-111%) at 124%.

2. The Matrix Spike Duplicate (MSD) was not performed due to insufficient sample volume.

3. No other QC deviations were observed.

METALS – WATER

1. The Method Blank (MB) had Zinc concentration at 19.41µg/L below the reporting limit 20µg/L.

2. Sample MW-1 (0012181-01C) had analytical (post digestion) spike recovery for Lead outside the acceptance 85-115% limits at 45.8%. To avoid dilution of the sample to the undetected level Lead concentration was determined by the Method of Standard Addition (MSA).

3. No other QC deviations were observed.

WET CHEMISTRY

1. All samples were analyzed for Nitrates outside the EPA recommended holding time (48 hours).

2. Sample MW-1 (0012182-01D) had Matrix Spike Duplicate (MSD) recovery outside the acceptance limits for Chloride. This failure was possibly due to high sample concentration relative to the spike concentration.

3. No QC deviations were observed.

GC/MS VOLATILES- WATER

SW-846 METHOD 8260B

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-02E

Client Sample ID: MW-8
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **JSL**
Dichlorodifluoromethane	ND	50		µg/L	10	12/26/00 12:45:00 PM
Chloromethane	ND	50		µg/L	10	12/26/00 12:45:00 PM
Vinyl chloride	ND	20		µg/L	10	12/26/00 12:45:00 PM
Chloroethane	370	50		µg/L	10	12/26/00 12:45:00 PM
Bromomethane	ND	50		µg/L	10	12/26/00 12:45:00 PM
Trichlorofluoromethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Acetone	270	100		µg/L	10	12/26/00 12:45:00 PM
1,1-Dichloroethene	ND	10		µg/L	10	12/26/00 12:45:00 PM
Carbon disulfide	ND	20		µg/L	10	12/26/00 12:45:00 PM
Methylene chloride	ND	50		µg/L	10	12/26/00 12:45:00 PM
Methyl tert-butyl ether	ND	20		µg/L	10	12/26/00 12:45:00 PM
trans-1,2-Dichloroethene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,1-Dichloroethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
2-Butanone	100	100		µg/L	10	12/26/00 12:45:00 PM
2,2-Dichloropropane	ND	20		µg/L	10	12/26/00 12:45:00 PM
cis-1,2-Dichloroethene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Chloroform	ND	20		µg/L	10	12/26/00 12:45:00 PM
Bromochloromethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,1,1-Trichloroethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,1-Dichloropropene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Carbon tetrachloride	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2-Dichloroethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Benzene	27	10		µg/L	10	12/26/00 12:45:00 PM
Trichloroethene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2-Dichloropropane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Bromodichloromethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Dibromomethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
4-Methyl-2-pentanone	590	100		µg/L	10	12/26/00 12:45:00 PM
cis-1,3-Dichloropropene	ND	10		µg/L	10	12/26/00 12:45:00 PM
Toluene	1,300	20		µg/L	10	12/26/00 12:45:00 PM
trans-1,3-Dichloropropene	ND	10		µg/L	10	12/26/00 12:45:00 PM
1,1,2-Trichloroethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2-Dibromoethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
2-Hexanone	ND	100		µg/L	10	12/26/00 12:45:00 PM
1,3-Dichloropropane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Tetrachloroethene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Dibromochloromethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Chlorobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,1,1,2-Tetrachloroethane	ND	20		µg/L	10	12/26/00 12:45:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-02E

Client Sample ID: MW-8
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	2,100	20		µg/L	10	12/26/00 12:45:00 PM
m,p-Xylene	8,300	200		µg/L	100	12/27/00 1:05:00 PM
o-Xylene	1,300	20		µg/L	10	12/26/00 12:45:00 PM
Styrene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Bromoform	ND	20		µg/L	10	12/26/00 12:45:00 PM
Isopropylbenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2,3-Trichloropropane	ND	20		µg/L	10	12/26/00 12:45:00 PM
Bromobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
n-Propylbenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
2-Chlorotoluene	ND	20		µg/L	10	12/26/00 12:45:00 PM
4-Chlorotoluene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,3,5-Trimethylbenzene	23	20		µg/L	10	12/26/00 12:45:00 PM
tert-Butylbenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2,4-Trimethylbenzene	78	20		µg/L	10	12/26/00 12:45:00 PM
sec-Butylbenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
4-Isopropyltoluene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,3-Dichlorobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,4-Dichlorobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
n-Butylbenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2-Dichlorobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/L	10	12/26/00 12:45:00 PM
1,2,4-Trichlorobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Hexachlorobutadiene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Naphthalene	55	50		µg/L	10	12/26/00 12:45:00 PM
1,2,3-Trichlorobenzene	ND	20		µg/L	10	12/26/00 12:45:00 PM
Surr: Dibromofluoromethane	97.5	88-120		%REC	10	12/26/00 12:45:00 PM
Surr: 1,2-Dichloroethane-d4	97.1	77-127		%REC	10	12/26/00 12:45:00 PM
Surr: Toluene-d8	96.8	88-109		%REC	10	12/26/00 12:45:00 PM
Surr: 4-Bromofluorobenzene	104	76-109		%REC	10	12/26/00 12:45:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03E	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **JSL**
Dichlorodifluoromethane	8.0	5.0		µg/L	1	12/26/00 2:26:00 PM
Chloromethane	ND	5.0		µg/L	1	12/26/00 2:26:00 PM
Vinyl chloride	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Chloroethane	24	5.0		µg/L	1	12/26/00 2:26:00 PM
Bromomethane	ND	5.0		µg/L	1	12/26/00 2:26:00 PM
Trichlorofluoromethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Acetone	19	10		µg/L	1	12/26/00 2:26:00 PM
1,1-Dichloroethene	ND	1.0		µg/L	1	12/26/00 2:26:00 PM
Carbon disulfide	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Methylene chloride	ND	5.0		µg/L	1	12/26/00 2:26:00 PM
Methyl tert-butyl ether	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,1-Dichloroethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
2-Butanone	12	10		µg/L	1	12/26/00 2:26:00 PM
2,2-Dichloropropane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Chloroform	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Bromochloromethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,1-Dichloropropene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Carbon tetrachloride	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2-Dichloroethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Benzene	12	1.0		µg/L	1	12/26/00 2:26:00 PM
Trichloroethene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2-Dichloropropane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Bromodichloromethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Dibromomethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
4-Methyl-2-pentanone	ND	10		µg/L	1	12/26/00 2:26:00 PM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/26/00 2:26:00 PM
Toluene	2.8	2.0		µg/L	1	12/26/00 2:26:00 PM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/26/00 2:26:00 PM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2-Dibromoethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
2-Hexanone	ND	10		µg/L	1	12/26/00 2:26:00 PM
1,3-Dichloropropane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Tetrachloroethene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Dibromochloromethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Chlorobenzene	32	2.0		µg/L	1	12/26/00 2:26:00 PM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03E	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	4.4	2.0		µg/L	1	12/26/00 2:26:00 PM
m,p-Xylene	99	2.0		µg/L	1	12/26/00 2:26:00 PM
o-Xylene	3.5	2.0		µg/L	1	12/26/00 2:26:00 PM
Styrene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Bromoform	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Isopropylbenzene	7.3	2.0		µg/L	1	12/26/00 2:26:00 PM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Bromobenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
n-Propylbenzene	10	2.0		µg/L	1	12/26/00 2:26:00 PM
2-Chlorotoluene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
4-Chlorotoluene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,3,5-Trimethylbenzene	7.9	2.0		µg/L	1	12/26/00 2:26:00 PM
tert-Butylbenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2,4-Trimethylbenzene	84	2.0		µg/L	1	12/26/00 2:26:00 PM
sec-Butylbenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
4-Isopropyltoluene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,4-Dichlorobenzene	20	2.0		µg/L	1	12/26/00 2:26:00 PM
n-Butylbenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	12/26/00 2:26:00 PM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Hexachlorobutadiene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Naphthalene	52	5.0		µg/L	1	12/26/00 2:26:00 PM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	12/26/00 2:26:00 PM
Surr: Dibromofluoromethane	95.3	88-120		%REC	1	12/26/00 2:26:00 PM
Surr: 1,2-Dichloroethane-d4	91.6	77-127		%REC	1	12/26/00 2:26:00 PM
Surr: Toluene-d8	96.6	88-109		%REC	1	12/26/00 2:26:00 PM
Surr: 4-Bromofluorobenzene	96.5	76-109		%REC	1	12/26/00 2:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04E	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **JSL**
Dichlorodifluoromethane	ND	5.0		µg/L	1	12/27/00 5:34:00 AM
Chloromethane	ND	5.0		µg/L	1	12/27/00 5:34:00 AM
Vinyl chloride	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Chloroethane	63	5.0		µg/L	1	12/27/00 5:34:00 AM
Bromomethane	ND	5.0		µg/L	1	12/27/00 5:34:00 AM
Trichlorofluoromethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Acetone	10	10		µg/L	1	12/27/00 5:34:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	12/27/00 5:34:00 AM
Carbon disulfide	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Methylene chloride	ND	5.0		µg/L	1	12/27/00 5:34:00 AM
Methyl tert-butyl ether	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,1-Dichloroethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
2-Butanone	ND	10		µg/L	1	12/27/00 5:34:00 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
cis-1,2-Dichloroethene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Chloroform	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Bromochloromethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,1-Dichloropropene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Carbon tetrachloride	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2-Dichloroethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Benzene	5.0	1.0		µg/L	1	12/27/00 5:34:00 AM
Trichloroethene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2-Dichloropropane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Bromodichloromethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Dibromomethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	12/27/00 5:34:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/27/00 5:34:00 AM
Toluene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/27/00 5:34:00 AM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2-Dibromoethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
2-Hexanone	ND	10		µg/L	1	12/27/00 5:34:00 AM
1,3-Dichloropropane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Tetrachloroethene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Dibromochloromethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Chlorobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW-7
Lab Order: 0012182
Project: RIAC
Collection Date: 12/13/00
Lab ID: 0012182-04E
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
m,p-Xylene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
o-Xylene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Styrene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Bromoform	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Isopropylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Bromobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
n-Propylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
2-Chlorotoluene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
4-Chlorotoluene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,3,5-Trimethylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
tert-Butylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2,4-Trimethylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
sec-Butylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
4-Isopropyltoluene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,4-Dichlorobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
n-Butylbenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2-Dichlorobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	12/27/00 5:34:00 AM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Hexachlorobutadiene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Naphthalene	ND	5.0		µg/L	1	12/27/00 5:34:00 AM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	12/27/00 5:34:00 AM
Surr: Dibromofluoromethane	99.0	88-120		%REC	1	12/27/00 5:34:00 AM
Surr: 1,2-Dichloroethane-d4	103	77-127		%REC	1	12/27/00 5:34:00 AM
Surr: Toluene-d8	96.2	88-109		%REC	1	12/27/00 5:34:00 AM
Surr: 4-Bromofluorobenzene	96.4	76-109		%REC	1	12/27/00 5:34:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05E	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **JSL**
Dichlorodifluoromethane	ND	50		µg/L	10	12/26/00 1:19:00 PM
Chloromethane	ND	50		µg/L	10	12/26/00 1:19:00 PM
Vinyl chloride	28	20		µg/L	10	12/26/00 1:19:00 PM
Chloroethane	11,000	500		µg/L	100	12/27/00 1:38:00 PM
Bromomethane	ND	50		µg/L	10	12/26/00 1:19:00 PM
Trichlorofluoromethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
Acetone	140	100		µg/L	10	12/26/00 1:19:00 PM
1,1-Dichloroethene	ND	10		µg/L	10	12/26/00 1:19:00 PM
Carbon disulfide	ND	20		µg/L	10	12/26/00 1:19:00 PM
Methylene chloride	610	50		µg/L	10	12/26/00 1:19:00 PM
Methyl tert-butyl ether	ND	20		µg/L	10	12/26/00 1:19:00 PM
trans-1,2-Dichloroethene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,1-Dichloroethane	2,700	20		µg/L	10	12/26/00 1:19:00 PM
2-Butanone	1,800	100		µg/L	10	12/26/00 1:19:00 PM
2,2-Dichloropropane	ND	20		µg/L	10	12/26/00 1:19:00 PM
cis-1,2-Dichloroethene	99	20		µg/L	10	12/26/00 1:19:00 PM
Chloroform	ND	20		µg/L	10	12/26/00 1:19:00 PM
Bromochloromethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,1,1-Trichloroethane	710	20		µg/L	10	12/26/00 1:19:00 PM
1,1-Dichloropropene	ND	20		µg/L	10	12/26/00 1:19:00 PM
Carbon tetrachloride	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2-Dichloroethane	75	20		µg/L	10	12/26/00 1:19:00 PM
Benzene	44	10		µg/L	10	12/26/00 1:19:00 PM
Trichloroethene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2-Dichloropropane	ND	20		µg/L	10	12/26/00 1:19:00 PM
Bromodichloromethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
Dibromomethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
4-Methyl-2-pentanone	ND	100		µg/L	10	12/26/00 1:19:00 PM
cis-1,3-Dichloropropene	ND	10		µg/L	10	12/26/00 1:19:00 PM
Toluene	1,700	20		µg/L	10	12/26/00 1:19:00 PM
trans-1,3-Dichloropropene	ND	10		µg/L	10	12/26/00 1:19:00 PM
1,1,2-Trichloroethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2-Dibromoethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
2-Hexanone	ND	100		µg/L	10	12/26/00 1:19:00 PM
1,3-Dichloropropane	ND	20		µg/L	10	12/26/00 1:19:00 PM
Tetrachloroethene	ND	20		µg/L	10	12/26/00 1:19:00 PM
Dibromochloromethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
Chlorobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,1,1,2-Tetrachloroethane	ND	20		µg/L	10	12/26/00 1:19:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05E	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	2,500	20		µg/L	10	12/26/00 1:19:00 PM
m,p-Xylene	8,200	200		µg/L	100	12/27/00 1:38:00 PM
o-Xylene	2,300	20		µg/L	10	12/26/00 1:19:00 PM
Styrene	ND	20		µg/L	10	12/26/00 1:19:00 PM
Bromoform	ND	20		µg/L	10	12/26/00 1:19:00 PM
Isopropylbenzene	52	20		µg/L	10	12/26/00 1:19:00 PM
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2,3-Trichloropropane	ND	20		µg/L	10	12/26/00 1:19:00 PM
Bromobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
n-Propylbenzene	90	20		µg/L	10	12/26/00 1:19:00 PM
2-Chlorotoluene	ND	20		µg/L	10	12/26/00 1:19:00 PM
4-Chlorotoluene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,3,5-Trimethylbenzene	190	20		µg/L	10	12/26/00 1:19:00 PM
tert-Butylbenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2,4-Trimethylbenzene	660	20		µg/L	10	12/26/00 1:19:00 PM
sec-Butylbenzene	30	20		µg/L	10	12/26/00 1:19:00 PM
4-Isopropyltoluene	25	20		µg/L	10	12/26/00 1:19:00 PM
1,3-Dichlorobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,4-Dichlorobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
n-Butylbenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2-Dichlorobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/L	10	12/26/00 1:19:00 PM
1,2,4-Trichlorobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
Hexachlorobutadiene	ND	20		µg/L	10	12/26/00 1:19:00 PM
Naphthalene	170	50		µg/L	10	12/26/00 1:19:00 PM
1,2,3-Trichlorobenzene	ND	20		µg/L	10	12/26/00 1:19:00 PM
Surr: Dibromofluoromethane	97.8	88-120		%REC	10	12/26/00 1:19:00 PM
Surr: 1,2-Dichloroethane-d4	105	77-127		%REC	10	12/26/00 1:19:00 PM
Surr: Toluene-d8	95.6	88-109		%REC	10	12/26/00 1:19:00 PM
Surr: 4-Bromofluorobenzene	101	76-109		%REC	10	12/26/00 1:19:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-06E

Client Sample ID: MW-5
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS		**SW8260B**				Analyst: **JSL**
Dichlorodifluoromethane	ND	5.0		µg/L	1	12/27/00 6:07:00 AM
Chloromethane	ND	5.0		µg/L	1	12/27/00 6:07:00 AM
Vinyl chloride	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Chloroethane	11	5.0		µg/L	1	12/27/00 6:07:00 AM
Bromomethane	ND	5.0		µg/L	1	12/27/00 6:07:00 AM
Trichlorofluoromethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Acetone	39	10		µg/L	1	12/27/00 6:07:00 AM
1,1-Dichloroethene	ND	1.0		µg/L	1	12/27/00 6:07:00 AM
Carbon disulfide	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Methylene chloride	ND	5.0		µg/L	1	12/27/00 6:07:00 AM
Methyl tert-butyl ether	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
trans-1,2-Dichloroethene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,1-Dichloroethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
2-Butanone	26	10		µg/L	1	12/27/00 6:07:00 AM
2,2-Dichloropropane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
cis-1,2-Dichloroethene	2.8	2.0		µg/L	1	12/27/00 6:07:00 AM
Chloroform	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Bromochloromethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,1,1-Trichloroethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,1-Dichloropropene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Carbon tetrachloride	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2-Dichloroethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Benzene	15	1.0		µg/L	1	12/27/00 6:07:00 AM
Trichloroethene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2-Dichloropropane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Bromodichloromethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Dibromomethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
4-Methyl-2-pentanone	ND	10		µg/L	1	12/27/00 6:07:00 AM
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/27/00 6:07:00 AM
Toluene	10	2.0		µg/L	1	12/27/00 6:07:00 AM
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/27/00 6:07:00 AM
1,1,2-Trichloroethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2-Dibromoethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
2-Hexanone	ND	10		µg/L	1	12/27/00 6:07:00 AM
1,3-Dichloropropane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Tetrachloroethene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Dibromochloromethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Chlorobenzene	100	2.0		µg/L	1	12/27/00 6:07:00 AM
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06E	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	18	2.0		µg/L	1	12/27/00 6:07:00 AM
m,p-Xylene	490	2.0		µg/L	1	12/27/00 6:07:00 AM
o-Xylene	6.4	2.0		µg/L	1	12/27/00 6:07:00 AM
Styrene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Bromoform	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Isopropylbenzene	7.2	2.0		µg/L	1	12/27/00 6:07:00 AM
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Bromobenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
n-Propylbenzene	8.9	2.0		µg/L	1	12/27/00 6:07:00 AM
2-Chlorotoluene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
4-Chlorotoluene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,3,5-Trimethylbenzene	15	2.0		µg/L	1	12/27/00 6:07:00 AM
tert-Butylbenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2,4-Trimethylbenzene	73	2.0		µg/L	1	12/27/00 6:07:00 AM
sec-Butylbenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
4-Isopropyltoluene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,3-Dichlorobenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,4-Dichlorobenzene	18	2.0		µg/L	1	12/27/00 6:07:00 AM
n-Butylbenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2-Dichlorobenzene	4.0	2.0		µg/L	1	12/27/00 6:07:00 AM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	12/27/00 6:07:00 AM
1,2,4-Trichlorobenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Hexachlorobutadiene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Naphthalene	45	5.0		µg/L	1	12/27/00 6:07:00 AM
1,2,3-Trichlorobenzene	ND	2.0		µg/L	1	12/27/00 6:07:00 AM
Surr: Dibromofluoromethane	99.8	88-120		%REC	1	12/27/00 6:07:00 AM
Surr: 1,2-Dichloroethane-d4	98.0	77-127		%REC	1	12/27/00 6:07:00 AM
Surr: Toluene-d8	97.6	88-109		%REC	1	12/27/00 6:07:00 AM
Surr: 4-Bromofluorobenzene	97.0	76-109		%REC	1	12/27/00 6:07:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID **MblK12/26/00** Batch ID: **R6460** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/26/00 9:25:00 AM** Prep Date **12/26/00**
Client ID: Run ID: **V-3_001226A** SeqNo: **98453**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Dichlorodifluoromethane	ND	5.0	µg/L									
Chloromethane	ND	5.0	µg/L									
Vinyl chloride	ND	2.0	µg/L									
Chloroethane	ND	5.0	µg/L									
Bromomethane	ND	5.0	µg/L									
Trichlorofluoromethane	ND	2.0	µg/L									
Acetone	ND	10	µg/L									
1,1-Dichloroethene	ND	1.0	µg/L									
Carbon disulfide	ND	2.0	µg/L									
Methylene chloride	ND	5.0	µg/L									
Methyl tert-butyl ether	ND	2.0	µg/L									
trans-1,2-Dichloroethene	ND	2.0	µg/L									
1,1-Dichloroethane	ND	2.0	µg/L									
2-Butanone	ND	10	µg/L									
2,2-Dichloropropane	ND	2.0	µg/L									
cis-1,2-Dichloroethene	ND	2.0	µg/L									
Chloroform	ND	2.0	µg/L									
Bromochloromethane	ND	2.0	µg/L									
1,1,1-Trichloroethane	ND	2.0	µg/L									
1,1-Dichloropropene	ND	2.0	µg/L									
Carbon tetrachloride	ND	2.0	µg/L									
1,2-Dichloroethane	ND	2.0	µg/L									
Benzene	ND	1.0	µg/L									
Trichloroethene	ND	2.0	µg/L									
1,2-Dichloropropane	ND	2.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Bromodichloromethane	ND	2.0	µg/L
Dibromomethane	ND	2.0	µg/L
4-Methyl-2-pentanone	ND	10	µg/L
cis-1,3-Dichloropropene	ND	1.0	µg/L
Toluene	ND	2.0	µg/L
trans-1,3-Dichloropropene	ND	1.0	µg/L
1,1,2-Trichloroethane	ND	2.0	µg/L
1,2-Dibromoethane	ND	2.0	µg/L
2-Hexanone	ND	10	µg/L
1,3-Dichloropropane	ND	2.0	µg/L
Tetrachloroethene	ND	2.0	µg/L
Dibromochloromethane	ND	2.0	µg/L
Chlorobenzene	ND	2.0	µg/L
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L
Ethylbenzene	ND	2.0	µg/L
m,p-Xylene	ND	2.0	µg/L
o-Xylene	ND	2.0	µg/L
Styrene	ND	2.0	µg/L
Bromoform	ND	2.0	µg/L
Isopropylbenzene	ND	2.0	µg/L
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L
1,2,3-Trichloropropane	ND	2.0	µg/L
Bromobenzene	ND	2.0	µg/L
n-Propylbenzene	ND	2.0	µg/L
2-Chlorotoluene	ND	2.0	µg/L
4-Chlorotoluene	ND	2.0	µg/L
1,3,5-Trimethylbenzene	ND	2.0	µg/L
tert-Butylbenzene	ND	2.0	µg/L
1,2,4-Trimethylbenzene	ND	2.0	µg/L
sec-Butylbenzene	ND	2.0	µg/L
4-Isopropyltoluene	ND	2.0	µg/L

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Method Blank

1,3-Dichlorobenzene	ND	2.0	µg/L						
1,4-Dichlorobenzene	ND	2.0	µg/L						
n-Butylbenzene	ND	2.0	µg/L						
1,2-Dichlorobenzene	ND	2.0	µg/L						
1,2-Dibromo-3-chloropropane	ND	5.0	µg/L						
1,2,4-Trichlorobenzene	ND	2.0	µg/L						
Hexachlorobutadiene	ND	2.0	µg/L						
Naphthalene	ND	5.0	µg/L						
1,2,3-Trichlorobenzene	ND	2.0	µg/L						
Surr: Dibromofluoromethane	24.89	2.0	µg/L	25	0	99.6	88	120	0
Surr: 1,2-Dichloroethane-d4	25.12	2.0	µg/L	25	0	100	77	127	0
Surr: Toluene-d8	24.32	2.0	µg/L	25	0	97.3	88	109	0
Surr: 4-Bromofluorobenzene	23.53	2.0	µg/L	25	0	94.1	76	109	0

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID **MblK12/27/00** Batch ID: **R6486** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/27/00 11:49:00 AM** Prep Date **12/27/00**
Client ID: Run ID: **V-3_001227A** SeqNo: **98861**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Dichlorodifluoromethane	ND	5.0	µg/L									
Chloromethane	ND	5.0	µg/L									
Vinyl chloride	ND	2.0	µg/L									
Chloroethane	ND	5.0	µg/L									
Bromomethane	ND	5.0	µg/L									
Trichlorofluoromethane	ND	2.0	µg/L									
Acetone	ND	10	µg/L									
1,1-Dichloroethene	ND	1.0	µg/L									
Carbon disulfide	0.93	2.0	µg/L									J
Methylene chloride	ND	5.0	µg/L									
Methyl tert-butyl ether	ND	2.0	µg/L									
trans-1,2-Dichloroethene	ND	2.0	µg/L									
1,1-Dichloroethane	ND	2.0	µg/L									
2-Butanone	ND	10	µg/L									
2,2-Dichloropropane	ND	2.0	µg/L									
cis-1,2-Dichloroethene	ND	2.0	µg/L									
Chloroform	ND	2.0	µg/L									
Bromochloromethane	ND	2.0	µg/L									
1,1,1-Trichloroethane	ND	2.0	µg/L									
1,1-Dichloropropene	ND	2.0	µg/L									
Carbon tetrachloride	ND	2.0	µg/L									
1,2-Dichloroethane	ND	2.0	µg/L									
Benzene	ND	1.0	µg/L									
Trichloroethene	ND	2.0	µg/L									
1,2-Dichloropropane	ND	2.0	µg/L									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Method Blank

Bromodichloromethane	ND	2.0	µg/L
Dibromomethane	ND	2.0	µg/L
4-Methyl-2-pentanone	ND	10	µg/L
cis-1,3-Dichloropropene	ND	1.0	µg/L
Toluene	ND	2.0	µg/L
trans-1,3-Dichloropropene	ND	1.0	µg/L
1,1,2-Trichloroethane	ND	2.0	µg/L
1,2-Dibromoethane	ND	2.0	µg/L
2-Hexanone	ND	10	µg/L
1,3-Dichloropropane	ND	2.0	µg/L
Tetrachloroethene	ND	2.0	µg/L
Dibromochloromethane	ND	2.0	µg/L
Chlorobenzene	ND	2.0	µg/L
1,1,1,2-Tetrachloroethane	ND	2.0	µg/L
Ethylbenzene	ND	2.0	µg/L
m,p-Xylene	ND	2.0	µg/L
o-Xylene	ND	2.0	µg/L
Styrene	ND	2.0	µg/L
Bromoform	ND	2.0	µg/L
Isopropylbenzene	ND	2.0	µg/L
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L
1,2,3-Trichloropropane	ND	2.0	µg/L
Bromobenzene	ND	2.0	µg/L
n-Propylbenzene	ND	2.0	µg/L
2-Chlorotoluene	ND	2.0	µg/L
4-Chlorotoluene	ND	2.0	µg/L
1,3,5-Trimethylbenzene	ND	2.0	µg/L
tert-Butylbenzene	ND	2.0	µg/L
1,2,4-Trimethylbenzene	ND	2.0	µg/L
sec-Butylbenzene	ND	2.0	µg/L
4-Isopropyltoluene	ND	2.0	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Method Blank

1,3-Dichlorobenzene	ND	2.0	µg/L						
1,4-Dichlorobenzene	ND	2.0	µg/L						
n-Butylbenzene	ND	2.0	µg/L						
1,2-Dichlorobenzene	ND	2.0	µg/L						
1,2-Dibromo-3-chloropropane	ND	5.0	µg/L						
1,2,4-Trichlorobenzene	ND	2.0	µg/L						
Hexachlorobutadiene	ND	2.0	µg/L						
Naphthalene	ND	5.0	µg/L						
1,2,3-Trichlorobenzene	ND	2.0	µg/L						
Surr: Dibromofluoromethane	23.97	2.0	µg/L	25	0	95.9	88	120	0
Surr: 1,2-Dichloroethane-d4	26.06	2.0	µg/L	25	0	104	77	127	0
Surr: Toluene-d8	24.53	2.0	µg/L	25	0	98.1	88	109	0
Surr: 4-Bromofluorobenzene	24.28	2.0	µg/L	25	0	97.1	76	109	0

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID **0012182-01EMS** Batch ID: **R6460** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/26/00 3:00:00 PM** Prep Date **12/23/00**
Client ID: **MW-1** Run ID: **V-3_001226A** SeqNo: **98463**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	114.7	5.0	µg/L	100	0	115	71	130	0			
Benzene	120.2	5.0	µg/L	100	22.56	97.6	75	127	0			
Trichloroethene	103.4	10	µg/L	100	1.96	101	77	121	0			
Toluene	106.8	10	µg/L	100	2.41	104	80	121	0			
Chlorobenzene	189.4	10	µg/L	100	107.5	81.9	84	120	0			S
Surr: Dibromofluoromethane	120.6	10	µg/L	125	0	96.5	88	120	0			
Surr: 1,2-Dichloroethane-d4	117.8	10	µg/L	125	0	94.2	77	127	0			
Surr: Toluene-d8	122.4	10	µg/L	125	0	97.9	88	109	0			
Surr: 4-Bromofluorobenzene	123.1	10	µg/L	125	0	98.5	76	109	0			

Sample ID **0012182-01EMSD** Batch ID: **R6460** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/26/00 3:34:00 PM** Prep Date **12/23/00**
Client ID: **MW-1** Run ID: **V-3_001226A** SeqNo: **98464**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	111.8	5.0	µg/L	100	0	112	71	130	114.7	2.52	25	
Benzene	123	5.0	µg/L	100	22.56	100	75	127	120.2	2.34	25	
Trichloroethene	102.4	10	µg/L	100	1.96	100	77	121	103.4	0.923	25	
Toluene	107.6	10	µg/L	100	2.41	105	80	121	106.8	0.7	25	
Chlorobenzene	190.1	10	µg/L	100	107.5	82.6	84	120	189.4	0.369	25	S
Surr: Dibromofluoromethane	118.9	10	µg/L	125	0	95.1	88	120	0	0	0	
Surr: 1,2-Dichloroethane-d4	124.8	10	µg/L	125	0	99.9	77	127	0	0	0	
Surr: Toluene-d8	125.4	10	µg/L	125	0	100	88	109	0	0	0	
Surr: 4-Bromofluorobenzene	127.6	10	µg/L	125	0	102	76	109	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0012184-02BMS** Batch ID: **R6486** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/27/00 7:53:00 PM** Prep Date **12/27/00**
Client ID: Run ID: **V-3_001227A** SeqNo: **98874**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	113.8	5.0	µg/L	100	0	114	71	130	0			
Benzene	106.8	5.0	µg/L	100	4	103	75	127	0			
Trichloroethene	102	10	µg/L	100	0	102	77	121	0			
Toluene	105.8	10	µg/L	100	1.17	105	80	121	0			
Chlorobenzene	99.3	10	µg/L	100	0	99.3	84	120	0			
Surr: Dibromofluoromethane	127.2	10	µg/L	125	0	102	88	120	0			
Surr: 1,2-Dichloroethane-d4	122.2	10	µg/L	125	0	97.7	77	127	0			
Surr: Toluene-d8	123.6	10	µg/L	125	0	98.8	88	109	0			
Surr: 4-Bromofluorobenzene	121.3	10	µg/L	125	0	97	76	109	0			

Sample ID **0012184-02BMSD** Batch ID: **R6486** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/27/00 8:26:00 PM** Prep Date **12/27/00**
Client ID: Run ID: **V-3_001227A** SeqNo: **98875**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	110	5.0	µg/L	100	0	110	71	130	113.8	3.31	25	
Benzene	102.1	5.0	µg/L	100	4	98.1	75	127	106.8	4.45	25	
Trichloroethene	96.7	10	µg/L	100	0	96.7	77	121	102	5.29	25	
Toluene	100.2	10	µg/L	100	1.17	99	80	121	105.8	5.53	25	
Chlorobenzene	95.95	10	µg/L	100	0	96	84	120	99.3	3.43	25	
Surr: Dibromofluoromethane	121.8	10	µg/L	125	0	97.4	88	120	0	0	0	
Surr: 1,2-Dichloroethane-d4	122.8	10	µg/L	125	0	98.2	77	127	0	0	0	
Surr: Toluene-d8	124	10	µg/L	125	0	99.2	88	109	0	0	0	
Surr: 4-Bromofluorobenzene	122.6	10	µg/L	125	0	98.1	76	109	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **lcs 12/26/00** Batch ID: **R6460** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/26/00 8:19:00 AM** Prep Date **12/26/00**
Client ID: Run ID: **V-3_001226A** SeqNo: **98450**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	23.32	1.0	µg/L	20	0	117	77	131	0			
Benzene	19.54	1.0	µg/L	20	0	97.7	79	121	0			
Trichloroethene	18.66	2.0	µg/L	20	0	93.3	84	116	0			
Toluene	20.35	2.0	µg/L	20	0	102	84	116	0			
Chlorobenzene	19.7	2.0	µg/L	20	0	98.5	86	116	0			
Surr: Dibromofluoromethane	25.81	2.0	µg/L	25	0	103	88	120	0			
Surr: 1,2-Dichloroethane-d4	24.75	2.0	µg/L	25	0	99	77	127	0			
Surr: Toluene-d8	25.22	2.0	µg/L	25	0	101	88	109	0			
Surr: 4-Bromofluorobenzene	23.7	2.0	µg/L	25	0	94.8	76	109	0			

Sample ID **lcs 12/27/00** Batch ID: **R6486** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/27/00 10:41:00 AM** Prep Date **12/27/00**
Client ID: Run ID: **V-3_001227A** SeqNo: **98860**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	21.86	1.0	µg/L	20	0	109	77	131	0			
Benzene	19.58	1.0	µg/L	20	0	97.9	79	121	0			
Trichloroethene	19.47	2.0	µg/L	20	0	97.4	84	116	0			
Toluene	20.25	2.0	µg/L	20	0	101	84	116	0			
Chlorobenzene	18.84	2.0	µg/L	20	0	94.2	86	116	0			
Surr: Dibromofluoromethane	24.29	2.0	µg/L	25	0	97.2	88	120	0			
Surr: 1,2-Dichloroethane-d4	24.87	2.0	µg/L	25	0	99.5	77	127	0			
Surr: Toluene-d8	24.72	2.0	µg/L	25	0	98.9	88	109	0			
Surr: 4-Bromofluorobenzene	24.18	2.0	µg/L	25	0	96.7	76	109	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

GC/MS SEMIVOLATILES-WATER

METHOD 8270C

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-01F

Client Sample ID: MW-1
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 3:57:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 3:57:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 3:57:00 PM
2-Methylphenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 3:57:00 PM
4-Methylphenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 3:57:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 3:57:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 3:57:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 3:57:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 3:57:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Naphthalene	22	10		µg/L	1	12/18/00 3:57:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 3:57:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 3:57:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 3:57:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 3:57:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 3:57:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 3:57:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 3:57:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 3:57:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 3:57:00 PM
3-Nitroaniline	ND	20		µg/L	1	12/18/00 3:57:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 3:57:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 3:57:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 3:57:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 3:57:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-01F

Client Sample ID: MW-1
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	12/18/00 3:57:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 3:57:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 3:57:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 3:57:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 3:57:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 3:57:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 3:57:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 3:57:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 3:57:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 3:57:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 3:57:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 3:57:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/00 3:57:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 3:57:00 PM
Surr: 2-Fluorophenol	47.9	23-69		%REC	1	12/18/00 3:57:00 PM
Surr: Phenol-d5	25.2	13-50		%REC	1	12/18/00 3:57:00 PM
Surr: Nitrobenzene-d5	75.7	43-104		%REC	1	12/18/00 3:57:00 PM
Surr: 2-Fluorobiphenyl	72.1	42-102		%REC	1	12/18/00 3:57:00 PM
Surr: 2,4,6-Tribromophenol	79.8	42-121		%REC	1	12/18/00 3:57:00 PM
Surr: 4-Terphenyl-d14	80.8	36-113		%REC	1	12/18/00 3:57:00 PM

Qualifiers:

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B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
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R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-02F

Client Sample ID: MW-8
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 7:02:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 7:02:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 7:02:00 PM
2-Methylphenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 7:02:00 PM
4-Methylphenol	17	10		µg/L	1	12/18/00 7:02:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 7:02:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 7:02:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 7:02:00 PM
2,4-Dimethylphenol	25	10		µg/L	1	12/18/00 7:02:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 7:02:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 7:02:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Naphthalene	40	10		µg/L	1	12/18/00 7:02:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 7:02:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 7:02:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 7:02:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 7:02:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 7:02:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 7:02:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 7:02:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 7:02:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 7:02:00 PM
3-Nitroaniline	1,600	400		µg/L	20	12/19/00 7:13:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 7:02:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 7:02:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 7:02:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 7:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-02F

Client Sample ID: MW-8
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	37	10		µg/L	1	12/18/00 7:02:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 7:02:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 7:02:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 7:02:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 7:02:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 7:02:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 7:02:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 7:02:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 7:02:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 7:02:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 7:02:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 7:02:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/00 7:02:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 7:02:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 7:02:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 7:02:00 PM
Surr: 2-Fluorophenol	78.4	23-69	S	%REC	1	12/18/00 7:02:00 PM
Surr: Phenol-d5	28.5	13-50		%REC	1	12/18/00 7:02:00 PM
Surr: Nitrobenzene-d5	73.1	43-104		%REC	1	12/18/00 7:02:00 PM
Surr: 2-Fluorobiphenyl	74.2	42-102		%REC	1	12/18/00 7:02:00 PM
Surr: 2,4,6-Tribromophenol	81.7	42-121		%REC	1	12/18/00 7:02:00 PM
Surr: 4-Terphenyl-d14	80.6	36-113		%REC	1	12/18/00 7:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 4:24:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 4:24:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 4:24:00 PM
2-Methylphenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 4:24:00 PM
4-Methylphenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 4:24:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 4:24:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 4:24:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 4:24:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 4:24:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Naphthalene	20	10		µg/L	1	12/18/00 4:24:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 4:24:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 4:24:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 4:24:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 4:24:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 4:24:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 4:24:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 4:24:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 4:24:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 4:24:00 PM
3-Nitroaniline	ND	20		µg/L	1	12/18/00 4:24:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 4:24:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 4:24:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 4:24:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 4:24:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-03F

Client Sample ID: MW-6
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	12/18/00 4:24:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 4:24:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 4:24:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 4:24:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 4:24:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 4:24:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 4:24:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 4:24:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 4:24:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 4:24:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 4:24:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 4:24:00 PM
Bis(2-ethylhexyl)phthalate	11	10		µg/L	1	12/18/00 4:24:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 4:24:00 PM
Surr: 2-Fluorophenol	44.1	23-69		%REC	1	12/18/00 4:24:00 PM
Surr: Phenol-d5	26.3	13-50		%REC	1	12/18/00 4:24:00 PM
Surr: Nitrobenzene-d5	64.9	43-104		%REC	1	12/18/00 4:24:00 PM
Surr: 2-Fluorobiphenyl	65.0	42-102		%REC	1	12/18/00 4:24:00 PM
Surr: 2,4,6-Tribromophenol	79.7	42-121		%REC	1	12/18/00 4:24:00 PM
Surr: 4-Terphenyl-d14	60.6	36-113		%REC	1	12/18/00 4:24:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 4:50:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 4:50:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 4:50:00 PM
2-Methylphenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 4:50:00 PM
4-Methylphenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 4:50:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 4:50:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 4:50:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 4:50:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 4:50:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Naphthalene	ND	10		µg/L	1	12/18/00 4:50:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 4:50:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 4:50:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 4:50:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 4:50:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 4:50:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 4:50:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 4:50:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 4:50:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 4:50:00 PM
3-Nitroaniline	ND	20		µg/L	1	12/18/00 4:50:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 4:50:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 4:50:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 4:50:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 4:50:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW-7
Lab Order: 0012182
Project: RIAC
Collection Date: 12/13/00
Lab ID: 0012182-04F
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	12/18/00 4:50:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 4:50:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 4:50:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 4:50:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 4:50:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 4:50:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 4:50:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 4:50:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 4:50:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 4:50:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 4:50:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 4:50:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/00 4:50:00 PM
3,3'-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 4:50:00 PM
Surr: 2-Fluorophenol	38.3	23-69		%REC	1	12/18/00 4:50:00 PM
Surr: Phenol-d5	22.1	13-50		%REC	1	12/18/00 4:50:00 PM
Surr: Nitrobenzene-d5	63.8	43-104		%REC	1	12/18/00 4:50:00 PM
Surr: 2-Fluorobiphenyl	65.3	42-102		%REC	1	12/18/00 4:50:00 PM
Surr: 2,4,6-Tribromophenol	71.3	42-121		%REC	1	12/18/00 4:50:00 PM
Surr: 4-Terphenyl-d14	72.7	36-113		%REC	1	12/18/00 4:50:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-05F

Client Sample ID: MW-3
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	16	10		µg/L	1	12/18/00 5:43:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 5:43:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 5:43:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 5:43:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 5:43:00 PM
2-Methylphenol	11	10		µg/L	1	12/18/00 5:43:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 5:43:00 PM
4-Methylphenol	190	20		µg/L	2	12/19/00 6:19:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 5:43:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 5:43:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 5:43:00 PM
2,4-Dimethylphenol	23	10		µg/L	1	12/18/00 5:43:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 5:43:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 5:43:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 5:43:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 5:43:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Naphthalene	130	10		µg/L	1	12/18/00 5:43:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 5:43:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 5:43:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 5:43:00 PM
2-Methylnaphthalene	11	10		µg/L	1	12/18/00 5:43:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 5:43:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 5:43:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 5:43:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 5:43:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 5:43:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 5:43:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 5:43:00 PM
3-Nitroaniline	ND	20		µg/L	1	12/18/00 5:43:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 5:43:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 5:43:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 5:43:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 5:43:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	100	10		µg/L	1	12/18/00 5:43:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 5:43:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 5:43:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 5:43:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 5:43:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 5:43:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 5:43:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 5:43:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 5:43:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 5:43:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 5:43:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 5:43:00 PM
Bis(2-ethylhexyl)phthalate	50	10		µg/L	1	12/18/00 5:43:00 PM
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 5:43:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 5:43:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 5:43:00 PM
Surr: 2-Fluorophenol	88.4	23-69	S	%REC	1	12/18/00 5:43:00 PM
Surr: Phenol-d5	27.9	13-50		%REC	1	12/18/00 5:43:00 PM
Surr: Nitrobenzene-d5	93.3	43-104		%REC	1	12/18/00 5:43:00 PM
Surr: 2-Fluorobiphenyl	82.0	42-102		%REC	1	12/18/00 5:43:00 PM
Surr: 2,4,6-Tribromophenol	94.3	42-121		%REC	1	12/18/00 5:43:00 PM
Surr: 4-Terphenyl-d14	92.2	36-113		%REC	1	12/18/00 5:43:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 6:10:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 6:10:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 6:10:00 PM
2-Methylphenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 6:10:00 PM
4-Methylphenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 6:10:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 6:10:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 6:10:00 PM
2,4-Dimethylphenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 6:10:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 6:10:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Naphthalene	34	10		µg/L	1	12/18/00 6:10:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 6:10:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 6:10:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 6:10:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 6:10:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 6:10:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 6:10:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 6:10:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 6:10:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 6:10:00 PM
3-Nitroaniline	ND	20		µg/L	1	12/18/00 6:10:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 6:10:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 6:10:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 6:10:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 6:10:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	10		µg/L	1	12/18/00 6:10:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 6:10:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 6:10:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 6:10:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 6:10:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 6:10:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 6:10:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 6:10:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 6:10:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 6:10:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 6:10:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 6:10:00 PM
Bis(2-ethylhexyl)phthalate	13	10		µg/L	1	12/18/00 6:10:00 PM
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 6:10:00 PM
Surr: 2-Fluorophenol	46.8	23-69		%REC	1	12/18/00 6:10:00 PM
Surr: Phenol-d5	24.9	13-50		%REC	1	12/18/00 6:10:00 PM
Surr: Nitrobenzene-d5	71.6	43-104		%REC	1	12/18/00 6:10:00 PM
Surr: 2-Fluorobiphenyl	72.4	42-102		%REC	1	12/18/00 6:10:00 PM
Surr: 2,4,6-Tribromophenol	79.7	42-121		%REC	1	12/18/00 6:10:00 PM
Surr: 4-Terphenyl-d14	77.6	36-113		%REC	1	12/18/00 6:10:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0012182
Project: RIAC
Lab ID: 0012182-07F

Client Sample ID: DUP-1
Collection Date: 12/13/00
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/18/00 6:36:00 PM
2-Chlorophenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	12/18/00 6:36:00 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Benzyl alcohol	ND	20		µg/L	1	12/18/00 6:36:00 PM
2-Methylphenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/18/00 6:36:00 PM
4-Methylphenol	18	10		µg/L	1	12/18/00 6:36:00 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/18/00 6:36:00 PM
Hexachloroethane	ND	10		µg/L	1	12/18/00 6:36:00 PM
Nitrobenzene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Isophorone	ND	10		µg/L	1	12/18/00 6:36:00 PM
2,4-Dimethylphenol	20	10		µg/L	1	12/18/00 6:36:00 PM
Benzoic acid	ND	20		µg/L	1	12/18/00 6:36:00 PM
2-Nitrophenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/18/00 6:36:00 PM
2,4-Dichlorophenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Naphthalene	42	10		µg/L	1	12/18/00 6:36:00 PM
4-Chloroaniline	ND	10		µg/L	1	12/18/00 6:36:00 PM
Hexachlorobutadiene	ND	10		µg/L	1	12/18/00 6:36:00 PM
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/18/00 6:36:00 PM
2-Methylnaphthalene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/18/00 6:36:00 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/18/00 6:36:00 PM
2-Chloronaphthalene	ND	10		µg/L	1	12/18/00 6:36:00 PM
2-Nitroaniline	ND	20		µg/L	1	12/18/00 6:36:00 PM
Dimethyl phthalate	ND	10		µg/L	1	12/18/00 6:36:00 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Acenaphthylene	ND	10		µg/L	1	12/18/00 6:36:00 PM
3-Nitroaniline	1,400	400		µg/L	20	12/19/00 6:46:00 PM
4-Nitrophenol	ND	20		µg/L	1	12/18/00 6:36:00 PM
2,4-Dinitrophenol	ND	20		µg/L	1	12/18/00 6:36:00 PM
Acenaphthene	ND	10		µg/L	1	12/18/00 6:36:00 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Dibenzofuran	ND	10		µg/L	1	12/18/00 6:36:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
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E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: DUP-1
Lab Order: 0012182
Project: RIAC
Collection Date: 12/13/00
Lab ID: 0012182-07F
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	35	10		µg/L	1	12/18/00 6:36:00 PM
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/18/00 6:36:00 PM
Fluorene	ND	10		µg/L	1	12/18/00 6:36:00 PM
4-Nitroaniline	ND	20		µg/L	1	12/18/00 6:36:00 PM
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/18/00 6:36:00 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/18/00 6:36:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	10		µg/L	1	12/18/00 6:36:00 PM
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/18/00 6:36:00 PM
Hexachlorobenzene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Pentachlorophenol	ND	20		µg/L	1	12/18/00 6:36:00 PM
Phenanthrene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Anthracene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Carbazole	ND	10		µg/L	1	12/18/00 6:36:00 PM
Di-n-butyl phthalate	ND	10		µg/L	1	12/18/00 6:36:00 PM
Fluoranthene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Pyrene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Butyl benzyl phthalate	ND	10		µg/L	1	12/18/00 6:36:00 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/18/00 6:36:00 PM
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/18/00 6:36:00 PM
Benz(a)anthracene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Chrysene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Di-n-octyl phthalate	ND	10		µg/L	1	12/18/00 6:36:00 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Benzo(a)pyrene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/18/00 6:36:00 PM
Surr: 2-Fluorophenol	73.3	23-69	S	%REC	1	12/18/00 6:36:00 PM
Surr: Phenol-d5	26.9	13-50		%REC	1	12/18/00 6:36:00 PM
Surr: Nitrobenzene-d5	69.1	43-104		%REC	1	12/18/00 6:36:00 PM
Surr: 2-Fluorobiphenyl	66.6	42-102		%REC	1	12/18/00 6:36:00 PM
Surr: 2,4,6-Tribromophenol	78.6	42-121		%REC	1	12/18/00 6:36:00 PM
Surr: 4-Terphenyl-d14	77.4	36-113		%REC	1	12/18/00 6:36:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3402** Batch ID: **3402** Test Code: **SW8270C** Units: **µg/L** Analysis Date **12/18/00 2:28:00 PM** Prep Date **12/15/00**
Client ID: Run ID: **SV-4_001218A** SeqNo: **96585**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	ND	10	µg/L									
Bis(2-chloroethyl)ether	ND	10	µg/L									
2-Chlorophenol	ND	10	µg/L									
1,3-Dichlorobenzene	ND	10	µg/L									
1,4-Dichlorobenzene	ND	10	µg/L									
Benzyl alcohol	ND	20	µg/L									
2-Methylphenol	ND	10	µg/L									
1,2-Dichlorobenzene	ND	10	µg/L									
Bis(2-chloroisopropyl)ether	ND	10	µg/L									
4-Methylphenol	ND	10	µg/L									
N-Nitrosodi-n-propylamine	ND	10	µg/L									
Hexachloroethane	ND	10	µg/L									
Nitrobenzene	ND	10	µg/L									
Isophorone	ND	10	µg/L									
2,4-Dimethylphenol	ND	10	µg/L									
Benzoic acid	ND	20	µg/L									
2-Nitrophenol	ND	10	µg/L									
Bis(2-chloroethoxy)methane	ND	10	µg/L									
2,4-Dichlorophenol	ND	10	µg/L									
1,2,4-Trichlorobenzene	ND	10	µg/L									
Naphthalene	ND	10	µg/L									
4-Chloroaniline	ND	10	µg/L									
Hexachlorobutadiene	ND	10	µg/L									
4-Chloro-3-methylphenol	ND	20	µg/L									
2-Methylnaphthalene	ND	10	µg/L									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Method Blank

Hexachlorocyclopentadiene	ND	10	µg/L
2,4,6-Trichlorophenol	ND	10	µg/L
2,4,5-Trichlorophenol	ND	10	µg/L
2-Chloronaphthalene	ND	10	µg/L
2-Nitroaniline	ND	20	µg/L
Dimethyl phthalate	ND	10	µg/L
2,6-Dinitrotoluene	ND	10	µg/L
Acenaphthylene	ND	10	µg/L
3-Nitroaniline	ND	20	µg/L
4-Nitrophenol	ND	20	µg/L
2,4-Dinitrophenol	ND	20	µg/L
Acenaphthene	ND	10	µg/L
2,4-Dinitrotoluene	ND	10	µg/L
Dibenzofuran	ND	10	µg/L
Diethyl phthalate	ND	10	µg/L
4-Chlorophenyl phenyl ether	ND	10	µg/L
Fluorene	ND	10	µg/L
4-Nitroaniline	ND	20	µg/L
4,6-Dinitro-2-methylphenol	ND	20	µg/L
N-Nitrosodiphenylamine	ND	10	µg/L
1,2-Diphenylhydrazine (as Azobe	ND	10	µg/L
4-Bromophenyl phenyl ether	ND	10	µg/L
Hexachlorobenzene	ND	10	µg/L
Pentachlorophenol	ND	20	µg/L
Phenanthrene	ND	10	µg/L
Anthracene	ND	10	µg/L
Carbazole	ND	10	µg/L
Di-n-butyl phthalate	ND	10	µg/L
Fluoranthene	ND	10	µg/L
Pyrene	ND	10	µg/L
Butyl benzyl phthalate	ND	10	µg/L

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Bis(2-ethylhexyl)phthalate	2.22	10	µg/L						J
3,3´-Dichlorobenzidine	ND	10	µg/L						
Benz(a)anthracene	ND	10	µg/L						
Chrysene	ND	10	µg/L						
Di-n-octyl phthalate	ND	10	µg/L						
Benzo(b)fluoranthene	ND	10	µg/L						
Benzo(k)fluoranthene	ND	10	µg/L						
Benzo(a)pyrene	ND	10	µg/L						
Dibenz(a,h)anthracene	ND	10	µg/L						
Indeno(1,2,3-cd)pyrene	ND	10	µg/L						
Benzo(g,h,i)perylene	ND	10	µg/L						
Surr: 2-Fluorophenol	27.21	1.0	µg/L	75	0	36.3	23	69	0
Surr: Phenol-d5	16.93	1.0	µg/L	75	0	22.6	13	50	0
Surr: Nitrobenzene-d5	31.41	1.0	µg/L	50	0	62.8	43	104	0
Surr: 2-Fluorobiphenyl	31.28	1.0	µg/L	50	0	62.6	42	102	0
Surr: 2,4,6-Tribromophenol	54.26	1.0	µg/L	75	0	72.3	42	121	0
Surr: 4-Terphenyl-d14	35.67	1.0	µg/L	50	0	71.3	36	113	0

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0012182-04FMS** Batch ID: **3402** Test Code: **SW8270C** Units: **µg/L** Analysis Date **12/18/00 5:17:00 PM** Prep Date **12/15/00**
Client ID: **MW-7** Run ID: **SV-4_001218A** SeqNo: **96591**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	22.11	10	µg/L	75	0	29.5	8	64	0			
2-Chlorophenol	54.7	10	µg/L	75	0	72.9	36	98	0			
1,4-Dichlorobenzene	32.47	10	µg/L	50	0	64.9	14	119	0			
N-Nitrosodi-n-propylamine	42.37	10	µg/L	50	0	84.7	34	105	0			
1,2,4-Trichlorobenzene	34.35	10	µg/L	50	0	68.7	27	109	0			
4-Chloro-3-methylphenol	60.61	20	µg/L	75	0	80.8	36	105	0			
4-Nitrophenol	26.29	20	µg/L	75	0	35.1	1	68	0			
Acenaphthene	39.26	10	µg/L	50	0	78.5	36	108	0			
2,4-Dinitrotoluene	41.45	10	µg/L	50	0	82.9	33	105	0			
Pentachlorophenol	52.15	20	µg/L	75	0	69.5	28	112	0			
Pyrene	40.59	10	µg/L	50	0	81.2	38	105	0			
Surr: 2-Fluorophenol	35.46	1.0	µg/L	75	0	47.3	23	69	0			
Surr: Phenol-d5	22.15	1.0	µg/L	75	0	29.5	13	50	0			
Surr: Nitrobenzene-d5	37.84	1.0	µg/L	50	0	75.7	43	104	0			
Surr: 2-Fluorobiphenyl	38.08	1.0	µg/L	50	0	76.2	42	102	0			
Surr: 2,4,6-Tribromophenol	67.18	1.0	µg/L	75	0	89.6	42	121	0			
Surr: 4-Terphenyl-d14	44.41	1.0	µg/L	50	0	88.8	36	113	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-3402** Batch ID: **3402** Test Code: **SW8270C** Units: **µg/L** Analysis Date **12/18/00 3:04:00 PM** Prep Date **12/15/00**

Client ID: Run ID: **SV-4_001218A** SeqNo: **96586**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	15.94	10	µg/L	75	0	21.3	8	64	0			
2-Chlorophenol	44.86	10	µg/L	75	0	59.8	36	98	0			
1,4-Dichlorobenzene	27.83	10	µg/L	50	0	55.7	14	119	0			
N-Nitrosodi-n-propylamine	38.29	10	µg/L	50	0	76.6	34	105	0			
1,2,4-Trichlorobenzene	29.78	10	µg/L	50	0	59.6	27	109	0			
4-Chloro-3-methylphenol	48.26	20	µg/L	75	0	64.3	36	105	0			
4-Nitrophenol	23.88	20	µg/L	75	0	31.8	1	68	0			
Acenaphthene	32.31	10	µg/L	50	0	64.6	36	108	0			
2,4-Dinitrotoluene	32.97	10	µg/L	50	0	65.9	33	105	0			
Pentachlorophenol	47.05	20	µg/L	75	0	62.7	28	112	0			
Pyrene	31.96	10	µg/L	50	0	63.9	38	105	0			
Surr: 2-Fluorophenol	26.83	1.0	µg/L	75	0	35.8	23	69	0			
Surr: Phenol-d5	19.01	1.0	µg/L	75	0	25.3	13	50	0			
Surr: Nitrobenzene-d5	33.2	1.0	µg/L	50	0	66.4	43	104	0			
Surr: 2-Fluorobiphenyl	31.12	1.0	µg/L	50	0	62.2	42	102	0			
Surr: 2,4,6-Tribromophenol	49.95	1.0	µg/L	75	0	66.6	42	121	0			
Surr: 4-Terphenyl-d14	35.47	1.0	µg/L	50	0	70.9	36	113	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **LCSD-3402** Batch ID: **3402** Test Code: **SW8270C** Units: **µg/L** Analysis Date **12/18/00 3:30:00 PM** Prep Date **12/15/00**
Client ID: Run ID: **SV-4_001218A** SeqNo: **96587**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	16.78	10	µg/L	75	0	22.4	8	64	15.94	5.13	42	
2-Chlorophenol	49.75	10	µg/L	75	0	66.3	36	98	44.86	10.3	40	
1,4-Dichlorobenzene	31.31	10	µg/L	50	0	62.6	14	119	27.83	11.8	28	
N-Nitrosodi-n-propylamine	42.51	10	µg/L	50	0	85	34	105	38.29	10.4	38	
1,2,4-Trichlorobenzene	32.49	10	µg/L	50	0	65	27	109	29.78	8.7	27	
4-Chloro-3-methylphenol	58.89	20	µg/L	75	0	78.5	36	105	48.26	19.8	42	
4-Nitrophenol	23.14	20	µg/L	75	0	30.9	1	68	23.88	3.15	50	
Acenaphthene	40.08	10	µg/L	50	0	80.2	36	108	32.31	21.5	31	
2,4-Dinitrotoluene	39.21	10	µg/L	50	0	78.4	33	105	32.97	17.3	38	
Pentachlorophenol	51.75	20	µg/L	75	0	69	28	112	47.05	9.51	50	
Pyrene	38.43	10	µg/L	50	0	76.9	38	105	31.96	18.4	31	
Surr: 2-Fluorophenol	30.15	1.0	µg/L	75	0	40.2	23	69	0	0	0	
Surr: Phenol-d5	19.24	1.0	µg/L	75	0	25.7	13	50	0	0	0	
Surr: Nitrobenzene-d5	36.83	1.0	µg/L	50	0	73.7	43	104	0	0	0	
Surr: 2-Fluorobiphenyl	39.57	1.0	µg/L	50	0	79.1	42	102	0	0	0	
Surr: 2,4,6-Tribromophenol	64.6	1.0	µg/L	75	0	86.1	42	121	0	0	0	
Surr: 4-Terphenyl-d14	40.84	1.0	µg/L	50	0	81.7	36	113	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

PESTICIDES-WATER

SW-846 METHOD 8081

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-01F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	0.011	0.0064		µg/L	1	12/20/00 10:05:00 PM
beta-BHC	0.0082	0.0064		µg/L	1	12/20/00 10:05:00 PM
delta-BHC	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
gamma-BHC	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
Heptachlor	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
Aldrin	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
Heptachlor epoxide	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
Endosulfan I	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
alpha-Chlordane	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
gamma-Chlordane	ND	0.0064		µg/L	1	12/20/00 10:05:00 PM
Dieldrin	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
4,4'-DDE	0.055	0.013		µg/L	1	12/20/00 10:05:00 PM
Endrin	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
Endosulfan II	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
4,4'-DDD	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
Endrin aldehyde	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
Endrin ketone	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
Endosulfan sulfate	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
4,4'-DDT	ND	0.013		µg/L	1	12/20/00 10:05:00 PM
Methoxychlor	ND	0.064		µg/L	1	12/20/00 10:05:00 PM
Toxaphene	ND	0.20		µg/L	1	12/20/00 10:05:00 PM
Technical Chlordane	ND	0.20		µg/L	1	12/20/00 10:05:00 PM
Surr: Tetrachloro-m-xylene	60.2	40-117		%REC	1	12/20/00 10:05:00 PM
Surr: Decachlorobiphenyl	76.6	23-124		%REC	1	12/20/00 10:05:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-8
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-02G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
beta-BHC	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
delta-BHC	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
gamma-BHC	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
Heptachlor	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
Aldrin	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
Heptachlor epoxide	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
Endosulfan I	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
alpha-Chlordane	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
gamma-Chlordane	ND	0.0065		µg/L	1	12/20/00 10:34:00 PM
Dieldrin	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
4,4'-DDE	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
Endrin	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
Endosulfan II	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
4,4'-DDD	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
Endrin aldehyde	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
Endrin ketone	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
Endosulfan sulfate	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
4,4'-DDT	ND	0.013		µg/L	1	12/20/00 10:34:00 PM
Methoxychlor	ND	0.065		µg/L	1	12/20/00 10:34:00 PM
Toxaphene	ND	0.20		µg/L	1	12/20/00 10:34:00 PM
Technical Chlordane	ND	0.20		µg/L	1	12/20/00 10:34:00 PM
Surr: Tetrachloro-m-xylene	0	40-117	S	%REC	1	12/20/00 10:34:00 PM
Surr: Decachlorobiphenyl	50.8	23-124		%REC	1	12/20/00 10:34:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
beta-BHC	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
delta-BHC	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
gamma-BHC	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
Heptachlor	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
Aldrin	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
Heptachlor epoxide	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
Endosulfan I	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
alpha-Chlordane	ND	0.0065		µg/L	1	12/20/00 11:02:00 PM
gamma-Chlordane	0.038	0.0065		µg/L	1	12/20/00 11:02:00 PM
Dieldrin	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
4,4´-DDE	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
Endrin	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
Endosulfan II	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
4,4´-DDD	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
Endrin aldehyde	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
Endrin ketone	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
Endosulfan sulfate	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
4,4´-DDT	ND	0.013		µg/L	1	12/20/00 11:02:00 PM
Methoxychlor	ND	0.065		µg/L	1	12/20/00 11:02:00 PM
Toxaphene	ND	0.20		µg/L	1	12/20/00 11:02:00 PM
Technical Chlordane	ND	0.20		µg/L	1	12/20/00 11:02:00 PM
Surr: Tetrachloro-m-xylene	124	40-117	S	%REC	1	12/20/00 11:02:00 PM
Surr: Decachlorobiphenyl	54.6	23-124		%REC	1	12/20/00 11:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.0064		µg/L	1	12/21/00
beta-BHC	ND	0.0064		µg/L	1	12/21/00
delta-BHC	0.015	0.0064		µg/L	1	12/21/00
gamma-BHC	ND	0.0064		µg/L	1	12/21/00
Heptachlor	ND	0.0064		µg/L	1	12/21/00
Aldrin	ND	0.0064		µg/L	1	12/21/00
Heptachlor epoxide	ND	0.0064		µg/L	1	12/21/00
Endosulfan I	ND	0.0064		µg/L	1	12/21/00
alpha-Chlordane	ND	0.0064		µg/L	1	12/21/00
gamma-Chlordane	ND	0.0064		µg/L	1	12/21/00
Dieldrin	ND	0.013		µg/L	1	12/21/00
4,4'-DDE	ND	0.013		µg/L	1	12/21/00
Endrin	ND	0.013		µg/L	1	12/21/00
Endosulfan II	ND	0.013		µg/L	1	12/21/00
4,4'-DDD	ND	0.013		µg/L	1	12/21/00
Endrin aldehyde	ND	0.013		µg/L	1	12/21/00
Endrin ketone	ND	0.013		µg/L	1	12/21/00
Endosulfan sulfate	ND	0.013		µg/L	1	12/21/00
4,4'-DDT	ND	0.013		µg/L	1	12/21/00
Methoxychlor	ND	0.064		µg/L	1	12/21/00
Toxaphene	ND	0.20		µg/L	1	12/21/00
Technical Chlordane	ND	0.20		µg/L	1	12/21/00
Surr: Tetrachloro-m-xylene	66.5	40-117		%REC	1	12/21/00
Surr: Decachlorobiphenyl	76.0	23-124		%REC	1	12/21/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
beta-BHC	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
delta-BHC	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
gamma-BHC	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
Heptachlor	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
Aldrin	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
Heptachlor epoxide	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
Endosulfan I	ND	0.0064		µg/L	1	12/21/00 12:28:00 AM
alpha-Chlordane	0.13	0.0064		µg/L	1	12/21/00 12:28:00 AM
gamma-Chlordane	0.063	0.0064		µg/L	1	12/21/00 12:28:00 AM
Dieldrin	0.021	0.013		µg/L	1	12/21/00 12:28:00 AM
4,4´-DDE	0.060	0.013		µg/L	1	12/21/00 12:28:00 AM
Endrin	ND	0.013		µg/L	1	12/21/00 12:28:00 AM
Endosulfan II	0.084	0.013		µg/L	1	12/21/00 12:28:00 AM
4,4´-DDD	0.058	0.013		µg/L	1	12/21/00 12:28:00 AM
Endrin aldehyde	ND	0.013		µg/L	1	12/21/00 12:28:00 AM
Endrin ketone	ND	0.013		µg/L	1	12/21/00 12:28:00 AM
Endosulfan sulfate	ND	0.013		µg/L	1	12/21/00 12:28:00 AM
4,4´-DDT	0.22	0.013		µg/L	1	12/21/00 12:28:00 AM
Methoxychlor	ND	0.064		µg/L	1	12/21/00 12:28:00 AM
Toxaphene	ND	0.20		µg/L	1	12/21/00 12:28:00 AM
Technical Chlordane	ND	0.20		µg/L	1	12/21/00 12:28:00 AM
Surr: Tetrachloro-m-xylene	44.2	40-117		%REC	1	12/21/00 12:28:00 AM
Surr: Decachlorobiphenyl	44.6	23-124		%REC	1	12/21/00 12:28:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
beta-BHC	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
delta-BHC	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
gamma-BHC	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
Heptachlor	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
Aldrin	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
Heptachlor epoxide	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
Endosulfan I	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
alpha-Chlordane	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
gamma-Chlordane	ND	0.0067		µg/L	1	12/21/00 12:57:00 AM
Dieldrin	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
4,4´-DDE	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
Endrin	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
Endosulfan II	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
4,4´-DDD	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
Endrin aldehyde	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
Endrin ketone	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
Endosulfan sulfate	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
4,4´-DDT	ND	0.013		µg/L	1	12/21/00 12:57:00 AM
Methoxychlor	ND	0.067		µg/L	1	12/21/00 12:57:00 AM
Toxaphene	ND	0.21		µg/L	1	12/21/00 12:57:00 AM
Technical Chlordane	ND	0.21		µg/L	1	12/21/00 12:57:00 AM
Surr: Tetrachloro-m-xylene	82.0	40-117		%REC	1	12/21/00 12:57:00 AM
Surr: Decachlorobiphenyl	74.5	23-124		%REC	1	12/21/00 12:57:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	DUP-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-07G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
beta-BHC	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
delta-BHC	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
gamma-BHC	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
Heptachlor	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
Aldrin	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
Heptachlor epoxide	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
Endosulfan I	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
alpha-Chlordane	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
gamma-Chlordane	ND	0.0064		µg/L	1	12/21/00 1:26:00 AM
Dieldrin	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
4,4´-DDE	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
Endrin	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
Endosulfan II	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
4,4´-DDD	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
Endrin aldehyde	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
Endrin ketone	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
Endosulfan sulfate	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
4,4´-DDT	ND	0.013		µg/L	1	12/21/00 1:26:00 AM
Methoxychlor	ND	0.064		µg/L	1	12/21/00 1:26:00 AM
Toxaphene	ND	0.20		µg/L	1	12/21/00 1:26:00 AM
Technical Chlordane	ND	0.20		µg/L	1	12/21/00 1:26:00 AM
Surr: Tetrachloro-m-xylene	0	40-117	S	%REC	1	12/21/00 1:26:00 AM
Surr: Decachlorobiphenyl	45.5	23-124		%REC	1	12/21/00 1:26:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3407** Batch ID: **3407** Test Code: **SW8081A** Units: **µg/L** Analysis Date **12/20/00 8:39:00 PM** Prep Date **12/18/00**
Client ID: Run ID: **GC-TRENT_001220A** SeqNo: **97795**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
alpha-BHC	ND	0.0064	µg/L									
beta-BHC	ND	0.0064	µg/L									
delta-BHC	ND	0.0064	µg/L									
gamma-BHC	ND	0.0064	µg/L									
Heptachlor	ND	0.0064	µg/L									
Aldrin	ND	0.0064	µg/L									
Heptachlor epoxide	ND	0.0064	µg/L									
Endosulfan I	ND	0.0064	µg/L									
alpha-Chlordane	ND	0.0064	µg/L									
gamma-Chlordane	ND	0.0064	µg/L									
Dieldrin	ND	0.013	µg/L									
4,4´-DDE	ND	0.013	µg/L									
Endrin	ND	0.013	µg/L									
Endosulfan II	ND	0.013	µg/L									
4,4´-DDD	ND	0.013	µg/L									
Endrin aldehyde	ND	0.013	µg/L									
Endrin ketone	ND	0.013	µg/L									
Endosulfan sulfate	ND	0.013	µg/L									
4,4´-DDT	ND	0.013	µg/L									
Methoxychlor	ND	0.064	µg/L									
Toxaphene	ND	0.20	µg/L									
Technical Chlordane	ND	0.20	µg/L									
Surr: Tetrachloro-m-xylene	0.06519	0	µg/L	0.064	0	102	40	117	0			
Surr: Decachlorobiphenyl	0.07098	0	µg/L	0.064	0	111	23	124	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0012182-03GMS** Batch ID: **3407** Test Code: **SW8081A** Units: **µg/L** Analysis Date **12/20/00 11:31:00 PM** Prep Date **12/18/00**
Client ID: **MW-6** Run ID: **GC-TRENT_001220A** SeqNo: **97801**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	0.07138	0.0064	µg/L	0.08	0	89.2	20	136	0			
Heptachlor	0.1752	0.0064	µg/L	0.08	0	219	1	164	0			S
Aldrin	0.08736	0.0064	µg/L	0.08	0	109	24	112	0			
Dieldrin	0.175	0.013	µg/L	0.2	0	87.5	30	146	0			
Endrin	0.2285	0.013	µg/L	0.2	0	114	33	161	0			
4,4'-DDT	0.2021	0.013	µg/L	0.2	0	101	27	149	0			
Surr: Tetrachloro-m-xylene	0.0763	0	µg/L	0.064	0	119	40	117	0			S
Surr: Decachlorobiphenyl	0.03055	0	µg/L	0.064	0	47.7	23	124	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-3407** Batch ID: **3407** Test Code: **SW8081A** Units: **µg/L** Analysis Date **12/20/00 9:08:00 PM** Prep Date **12/18/00**
Client ID: Run ID: **GC-TRENT_001220A** SeqNo: **97796**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	0.08191	0.0064	µg/L	0.08	0	102	20	136	0			
Heptachlor	0.05905	0.0064	µg/L	0.08	0	73.8	1	164	0			
Aldrin	0.05293	0.0064	µg/L	0.08	0	66.2	24	112	0			
Dieldrin	0.2088	0.013	µg/L	0.2	0	104	30	146	0			
Endrin	0.2459	0.013	µg/L	0.2	0	123	33	161	0			
4,4´-DDT	0.2607	0.013	µg/L	0.2	0	130	27	149	0			
Surr: Tetrachloro-m-xylene	0.05488	0	µg/L	0.064	0	85.7	40	117	0			
Surr: Decachlorobiphenyl	0.06585	0	µg/L	0.064	0	103	23	124	0			

Sample ID **LCSD-3407** Batch ID: **3407** Test Code: **SW8081A** Units: **µg/L** Analysis Date **12/20/00 9:36:00 PM** Prep Date **12/18/00**
Client ID: Run ID: **GC-TRENT_001220A** SeqNo: **97797**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	0.09722	0.0064	µg/L	0.08	0	122	20	136	0.08191	17.1	15	R
Heptachlor	0.06379	0.0064	µg/L	0.08	0	79.7	1	164	0.05905	7.72	20	
Aldrin	0.05538	0.0064	µg/L	0.08	0	69.2	24	112	0.05293	4.54	22	
Dieldrin	0.2318	0.013	µg/L	0.2	0	116	30	146	0.2088	10.5	18	
Endrin	0.2635	0.013	µg/L	0.2	0	132	33	161	0.2459	6.89	21	
4,4´-DDT	0.2658	0.013	µg/L	0.2	0	133	27	149	0.2607	1.95	27	
Surr: Tetrachloro-m-xylene	0.0439	0	µg/L	0.064	0	68.6	40	117	0	0	0	
Surr: Decachlorobiphenyl	0.06786	0	µg/L	0.064	0	106	23	124	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

PCB-WATER

SW-846 METHOD 8082

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-01F	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Aroclor 1221	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Aroclor 1232	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Aroclor 1242	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Aroclor 1248	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Aroclor 1254	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Aroclor 1260	ND	0.20		µg/L	1	12/20/00 1:23:00 AM
Surr: Decachlorobiphenyl	73.1	32-111		%REC	1	12/20/00 1:23:00 AM
Surr: Tetrachloro-m-xylene	81.2	36-110		%REC	1	12/20/00 1:23:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-8
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-02G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	0.27	0.20		µg/L	1	12/20/00 1:54:00 AM
Aroclor 1221	ND	0.20		µg/L	1	12/20/00 1:54:00 AM
Aroclor 1232	ND	0.20		µg/L	1	12/20/00 1:54:00 AM
Aroclor 1242	ND	0.20		µg/L	1	12/20/00 1:54:00 AM
Aroclor 1248	ND	0.20		µg/L	1	12/20/00 1:54:00 AM
Aroclor 1254	ND	0.20		µg/L	1	12/20/00 1:54:00 AM
Aroclor 1260	ND	0.20		µg/L	1	12/20/00 1:54:00 AM
Surr: Decachlorobiphenyl	50.0	32-111		%REC	1	12/20/00 1:54:00 AM
Surr: Tetrachloro-m-xylene	69.4	36-110		%REC	1	12/20/00 1:54:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Aroclor 1221	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Aroclor 1232	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Aroclor 1242	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Aroclor 1248	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Aroclor 1254	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Aroclor 1260	ND	0.20		µg/L	1	12/20/00 2:25:00 AM
Surr: Decachlorobiphenyl	44.8	32-111		%REC	1	12/20/00 2:25:00 AM
Surr: Tetrachloro-m-xylene	57.0	36-110		%REC	1	12/20/00 2:25:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Aroclor 1221	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Aroclor 1232	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Aroclor 1242	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Aroclor 1248	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Aroclor 1254	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Aroclor 1260	ND	0.20		µg/L	1	12/20/00 2:56:00 AM
Surr: Decachlorobiphenyl	76.2	32-111		%REC	1	12/20/00 2:56:00 AM
Surr: Tetrachloro-m-xylene	77.8	36-110		%REC	1	12/20/00 2:56:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Aroclor 1221	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Aroclor 1232	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Aroclor 1242	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Aroclor 1248	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Aroclor 1254	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Aroclor 1260	ND	0.20		µg/L	1	12/20/00 3:28:00 AM
Surr: Decachlorobiphenyl	42.7	32-111		%REC	1	12/20/00 3:28:00 AM
Surr: Tetrachloro-m-xylene	96.2	36-110		%REC	1	12/20/00 3:28:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Aroclor 1221	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Aroclor 1232	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Aroclor 1242	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Aroclor 1248	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Aroclor 1254	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Aroclor 1260	ND	0.21		µg/L	1	12/20/00 3:59:00 AM
Surr: Decachlorobiphenyl	50.9	32-111		%REC	1	12/20/00 3:59:00 AM
Surr: Tetrachloro-m-xylene	72.6	36-110		%REC	1	12/20/00 3:59:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *29-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	DUP-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-07G	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Aroclor 1221	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Aroclor 1232	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Aroclor 1242	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Aroclor 1248	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Aroclor 1254	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Aroclor 1260	ND	0.20		µg/L	1	12/20/00 4:30:00 AM
Surr: Decachlorobiphenyl	48.6	32-111		%REC	1	12/20/00 4:30:00 AM
Surr: Tetrachloro-m-xylene	63.9	36-110		%REC	1	12/20/00 4:30:00 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3406** Batch ID: **3406** Test Code: **SW8082** Units: **µg/L** Analysis Date **12/19/00 11:18:00 PM** Prep Date **12/18/00**
Client ID: Run ID: **GC-DALI_001219A** SeqNo: **96792**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	ND	0.20	µg/L									
Aroclor 1221	ND	0.20	µg/L									
Aroclor 1232	ND	0.20	µg/L									
Aroclor 1242	ND	0.20	µg/L									
Aroclor 1248	ND	0.20	µg/L									
Aroclor 1254	ND	0.20	µg/L									
Aroclor 1260	ND	0.20	µg/L									
Surr: Decachlorobiphenyl	0.06482	0	µg/L	0.064	0	101	32	111	0			
Surr: Tetrachloro-m-xylene	0.04348	0	µg/L	0.064	0	67.9	36	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0012191-06AMS** Batch ID: **3406** Test Code: **SW8082** Units: **µg/L** Analysis Date **12/20/00 5:32:00 AM** Prep Date **12/18/00**
Client ID: Run ID: **GC-DALI_001219A** SeqNo: **96805**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	4.367	0.23	µg/L	4.545	0	96.1	40	119	0			
Aroclor 1260	4.689	0.23	µg/L	4.545	0.1516	99.8	42	124	0			
Surr: Decachlorobiphenyl	0.08987	0	µg/L	0.07273	0	124	32	111	0			S
Surr: Tetrachloro-m-xylene	0.06358	0	µg/L	0.07273	0	87.4	36	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

LABORATORY CONTROL SAMPLE/LABORATORY

CONTROL SAMPLE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *12-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-3406** Batch ID: **3406** Test Code: **SW8082** Units: **µg/L** Analysis Date **12/19/00 11:49:00 PM** Prep Date **12/18/00**
Client ID: Run ID: **GC-DALI_001219A** SeqNo: **96793**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	3.338	0.20	µg/L	4	0	83.4	55	115	0			
Aroclor 1260	3.512	0.20	µg/L	4	0	87.8	56	118	0			
Surr: Decachlorobiphenyl	0.05518	0	µg/L	0.064	0	86.2	32	111	0			
Surr: Tetrachloro-m-xylene	0.04911	0	µg/L	0.064	0	76.7	36	110	0			

Sample ID **LCSD-3406** Batch ID: **3406** Test Code: **SW8082** Units: **µg/L** Analysis Date **12/20/00 12:21:00 AM** Prep Date **12/18/00**
Client ID: Run ID: **GC-DALI_001219A** SeqNo: **96794**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	3.491	0.20	µg/L	4	0	87.3	55	115	3.338	4.49	50	
Aroclor 1260	3.704	0.20	µg/L	4	0	92.6	56	118	3.512	5.33	50	
Surr: Decachlorobiphenyl	0.0626	0	µg/L	0.064	0	97.8	32	111	0	0	0	
Surr: Tetrachloro-m-xylene	0.04759	0	µg/L	0.064	0	74.4	36	110	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

TRACE METALS & WET CHEMISTRY

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-01A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	78	50		mg/L	1	12/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-01B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/27/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-01C	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846		**SW6010B**				Analyst: **REB**
Aluminum	2,700	200		µg/L	1	12/21/00 5:42:02 PM
Antimony	ND	20		µg/L	1	12/21/00 5:42:02 PM
Barium	250	200		µg/L	1	12/21/00 5:42:02 PM
Beryllium	ND	5.0		µg/L	1	12/21/00 5:42:02 PM
Cadmium	ND	5.0		µg/L	1	12/21/00 5:42:02 PM
Calcium	110,000	2,500		µg/L	1	12/21/00 5:42:02 PM
Chromium	ND	10		µg/L	1	12/21/00 5:42:02 PM
Cobalt	ND	50		µg/L	1	12/21/00 5:42:02 PM
Copper	ND	25		µg/L	1	12/21/00 5:42:02 PM
Iron	94,000	100		µg/L	1	12/21/00 5:42:02 PM
Magnesium	11,000	2,500		µg/L	1	12/21/00 5:42:02 PM
Manganese	1,200	15		µg/L	1	12/21/00 5:42:02 PM
Nickel	ND	40		µg/L	1	12/21/00 5:42:02 PM
Potassium	12,000	2,500		µg/L	1	12/22/00 10:49:38 AM
Silver	ND	7.0		µg/L	1	12/21/00 5:42:02 PM
Sodium	33,000	2,500		µg/L	1	12/22/00 10:49:38 AM
Vanadium	ND	50		µg/L	1	12/21/00 5:42:02 PM
Zinc	36	20		µg/L	1	12/21/00 5:42:02 PM
ARSENIC, TOTAL		**SW7060A**				Analyst: **APL**
Arsenic	58	5.0		µg/L	1	12/22/00
MERCURY, TOTAL		**SW7470A**				Analyst: **MT**
Mercury	ND	0.20		µg/L	1	12/26/00
LEAD, TOTAL		**SW7421**				Analyst: **APL**
Lead	11	5.0	#	µg/L	1	12/22/00
SELENIUM, TOTAL		**SW7740**				Analyst: **APL**
Selenium	ND	5.0		µg/L	1	12/22/00
THALLIUM, TOTAL		**SW7841**				Analyst: **APL**
Thallium	ND	5.0		µg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-01D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	510	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	30	2.5		mg/L	5	12/27/00
Sulfate	5.4	1.0		mg/L	1	12/27/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	400	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	ND	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-8
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-02A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	260	50		mg/L	1	12/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-8
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-02B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/27/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-8
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-02C	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846		**SW6010B**				Analyst: **REB**
Aluminum	890	200		µg/L	1	12/21/00 5:46:58 PM
Antimony	ND	20		µg/L	1	12/21/00 5:46:58 PM
Barium	520	200		µg/L	1	12/21/00 5:46:58 PM
Beryllium	ND	5.0		µg/L	1	12/21/00 5:46:58 PM
Cadmium	ND	5.0		µg/L	1	12/21/00 5:46:58 PM
Calcium	120,000	2,500		µg/L	1	12/21/00 5:46:58 PM
Chromium	16	10		µg/L	1	12/21/00 5:46:58 PM
Cobalt	ND	50		µg/L	1	12/21/00 5:46:58 PM
Copper	ND	25		µg/L	1	12/21/00 5:46:58 PM
Iron	86,000	100		µg/L	1	12/21/00 5:46:58 PM
Magnesium	22,000	2,500		µg/L	1	12/21/00 5:46:58 PM
Manganese	1,200	15		µg/L	1	12/21/00 5:46:58 PM
Nickel	ND	40		µg/L	1	12/21/00 5:46:58 PM
Potassium	31,000	2,500		µg/L	1	12/22/00 10:53:09 AM
Silver	ND	7.0		µg/L	1	12/21/00 5:46:58 PM
Sodium	62,000	2,500		µg/L	1	12/22/00 10:53:09 AM
Vanadium	ND	50		µg/L	1	12/21/00 5:46:58 PM
Zinc	260	20		µg/L	1	12/21/00 5:46:58 PM
ARSENIC, TOTAL		**SW7060A**				Analyst: **APL**
Arsenic	ND	5.0		µg/L	1	12/26/00
MERCURY, TOTAL		**SW7470A**				Analyst: **MT**
Mercury	0.50	0.20		µg/L	1	12/26/00
LEAD, TOTAL		**SW7421**				Analyst: **APL**
Lead	680	50		µg/L	10	12/22/00
SELENIUM, TOTAL		**SW7740**				Analyst: **APL**
Selenium	ND	5.0		µg/L	1	12/26/00
THALLIUM, TOTAL		**SW7841**				Analyst: **APL**
Thallium	ND	5.0		µg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-8
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-02D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	710	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	73	2.5		mg/L	5	12/27/00
Sulfate	1.6	1.0		mg/L	1	12/27/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	750	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	ND	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	520	50		mg/L	1	12/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03C	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846		**SW6010B**				Analyst: **REB**
Aluminum	3,200	200		µg/L	1	12/21/00 5:51:47 PM
Antimony	ND	20		µg/L	1	12/21/00 5:51:47 PM
Barium	570	200		µg/L	1	12/21/00 5:51:47 PM
Beryllium	ND	5.0		µg/L	1	12/21/00 5:51:47 PM
Cadmium	ND	5.0		µg/L	1	12/21/00 5:51:47 PM
Calcium	60,000	2,500		µg/L	1	12/21/00 5:51:47 PM
Chromium	37	10		µg/L	1	12/21/00 5:51:47 PM
Cobalt	ND	50		µg/L	1	12/21/00 5:51:47 PM
Copper	ND	25		µg/L	1	12/21/00 5:51:47 PM
Iron	31,000	100		µg/L	1	12/21/00 5:51:47 PM
Magnesium	60,000	2,500		µg/L	1	12/21/00 5:51:47 PM
Manganese	290	15		µg/L	1	12/21/00 5:51:47 PM
Nickel	130	40		µg/L	1	12/21/00 5:51:47 PM
Potassium	190,000	2,500		µg/L	1	12/22/00 11:02:31 AM
Silver	ND	7.0		µg/L	1	12/21/00 5:51:47 PM
Sodium	410,000	2,500		µg/L	1	12/22/00 11:02:31 AM
Vanadium	ND	50		µg/L	1	12/21/00 5:51:47 PM
Zinc	850	20		µg/L	1	12/21/00 5:51:47 PM
ARSENIC, TOTAL		**SW7060A**				Analyst: **APL**
Arsenic	ND	5.0		µg/L	1	12/22/00
MERCURY, TOTAL		**SW7470A**				Analyst: **MT**
Mercury	ND	0.20		µg/L	1	12/26/00
LEAD, TOTAL		**SW7421**				Analyst: **APL**
Lead	ND	5.0		µg/L	1	12/22/00
SELENIUM, TOTAL		**SW7740**				Analyst: **APL**
Selenium	ND	5.0		µg/L	1	12/22/00
THALLIUM, TOTAL		**SW7841**				Analyst: **APL**
Thallium	ND	5.0		µg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-6
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-03D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	1,900	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	650	5.0		mg/L	10	12/27/00
Sulfate	ND	1.0		mg/L	1	12/27/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	1,800	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	0.62	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	69	50		mg/L	1	12/28/00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-7
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-04D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	560	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	210	2.5		mg/L	5	12/28/00
Sulfate	2.5	1.0		mg/L	1	12/28/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	300	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	0.21	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	370	50		mg/L	1	12/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05C	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846		**SW6010B**				Analyst: **REB**
Aluminum	670	200		µg/L	1	12/21/00 5:56:36 PM
Antimony	ND	20		µg/L	1	12/21/00 5:56:36 PM
Barium	820	200		µg/L	1	12/21/00 5:56:36 PM
Beryllium	ND	5.0		µg/L	1	12/21/00 5:56:36 PM
Cadmium	ND	5.0		µg/L	1	12/21/00 5:56:36 PM
Calcium	150,000	2,500		µg/L	1	12/21/00 5:56:36 PM
Chromium	ND	10		µg/L	1	12/21/00 5:56:36 PM
Cobalt	ND	50		µg/L	1	12/21/00 5:56:36 PM
Copper	ND	25		µg/L	1	12/21/00 5:56:36 PM
Iron	100,000	100		µg/L	1	12/21/00 5:56:36 PM
Magnesium	17,000	2,500		µg/L	1	12/21/00 5:56:36 PM
Manganese	690	15		µg/L	1	12/21/00 5:56:36 PM
Nickel	ND	40		µg/L	1	12/21/00 5:56:36 PM
Potassium	22,000	2,500		µg/L	1	12/22/00 11:05:57 AM
Silver	ND	7.0		µg/L	1	12/21/00 5:56:36 PM
Sodium	92,000	2,500		µg/L	1	12/22/00 11:05:57 AM
Vanadium	ND	50		µg/L	1	12/21/00 5:56:36 PM
Zinc	590	20		µg/L	1	12/21/00 5:56:36 PM
ARSENIC, TOTAL		**SW7060A**				Analyst: **APL**
Arsenic	ND	5.0		µg/L	1	12/22/00
MERCURY, TOTAL		**SW7470A**				Analyst: **MT**
Mercury	ND	0.20		µg/L	1	12/26/00
LEAD, TOTAL		**SW7421**				Analyst: **APL**
Lead	ND	5.0		µg/L	1	12/22/00
SELENIUM, TOTAL		**SW7740**				Analyst: **APL**
Selenium	ND	5.0		µg/L	1	12/22/00
THALLIUM, TOTAL		**SW7841**				Analyst: **APL**
Thallium	ND	5.0		µg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-3
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-05D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	920	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	160	2.5		mg/L	5	12/28/00
Sulfate	1.2	1.0		mg/L	1	12/28/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	720	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	ND	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	240	50		mg/L	1	12/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/27/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06C	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846		**SW6010B**				Analyst: **REB**
Aluminum	520	200		µg/L	1	12/21/00 6:01:26 PM
Antimony	ND	20		µg/L	1	12/21/00 6:01:26 PM
Barium	290	200		µg/L	1	12/21/00 6:01:26 PM
Beryllium	ND	5.0		µg/L	1	12/21/00 6:01:26 PM
Cadmium	ND	5.0		µg/L	1	12/21/00 6:01:26 PM
Calcium	73,000	2,500		µg/L	1	12/21/00 6:01:26 PM
Chromium	ND	10		µg/L	1	12/21/00 6:01:26 PM
Cobalt	ND	50		µg/L	1	12/21/00 6:01:26 PM
Copper	ND	25		µg/L	1	12/21/00 6:01:26 PM
Iron	38,000	100		µg/L	1	12/21/00 6:01:26 PM
Magnesium	56,000	2,500		µg/L	1	12/21/00 6:01:26 PM
Manganese	350	15		µg/L	1	12/21/00 6:01:26 PM
Nickel	50	40		µg/L	1	12/21/00 6:01:26 PM
Potassium	100,000	2,500		µg/L	1	12/22/00 11:09:23 AM
Silver	ND	7.0		µg/L	1	12/21/00 6:01:26 PM
Sodium	150,000	2,500		µg/L	1	12/22/00 11:09:23 AM
Vanadium	ND	50		µg/L	1	12/21/00 6:01:26 PM
Zinc	130	20		µg/L	1	12/21/00 6:01:26 PM
ARSENIC, TOTAL		**SW7060A**				Analyst: **APL**
Arsenic	ND	5.0		µg/L	1	12/22/00
MERCURY, TOTAL		**SW7470A**				Analyst: **MT**
Mercury	ND	0.20		µg/L	1	12/26/00
LEAD, TOTAL		**SW7421**				Analyst: **APL**
Lead	ND	5.0		µg/L	1	12/22/00
SELENIUM, TOTAL		**SW7740**				Analyst: **APL**
Selenium	ND	5.0		µg/L	1	12/22/00
THALLIUM, TOTAL		**SW7841**				Analyst: **APL**
Thallium	ND	5.0		µg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW-5
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-06D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	1,000	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	190	5.0		mg/L	10	12/28/00
Sulfate	ND	1.0		mg/L	1	12/28/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	1,300	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	ND	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	DUP-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-07A	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
COD, HIGH LEVEL		**E410.4**				Analyst: **RK**
Chemical Oxygen Demand	280	50		mg/L	1	12/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	DUP-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-07B	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
CYANIDE, TOTAL		**E335.2**				Analyst: **SB**
Cyanide	ND	0.020		mg/L	1	12/27/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	DUP-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-07C	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846		**SW6010B**				Analyst: **REB**
Aluminum	1,300	200		µg/L	1	12/21/00 6:14:37 PM
Antimony	ND	20		µg/L	1	12/21/00 6:14:37 PM
Barium	480	200		µg/L	1	12/21/00 6:14:37 PM
Beryllium	ND	5.0		µg/L	1	12/21/00 6:14:37 PM
Cadmium	ND	5.0		µg/L	1	12/21/00 6:14:37 PM
Calcium	130,000	2,500		µg/L	1	12/21/00 6:14:37 PM
Chromium	26	10		µg/L	1	12/21/00 6:14:37 PM
Cobalt	ND	50		µg/L	1	12/21/00 6:14:37 PM
Copper	ND	25		µg/L	1	12/21/00 6:14:37 PM
Iron	100,000	100		µg/L	1	12/21/00 6:14:37 PM
Magnesium	15,000	2,500		µg/L	1	12/21/00 6:14:37 PM
Manganese	1,600	15		µg/L	1	12/21/00 6:14:37 PM
Nickel	ND	40		µg/L	1	12/21/00 6:14:37 PM
Potassium	18,000	2,500		µg/L	1	12/22/00 11:12:50 AM
Silver	ND	7.0		µg/L	1	12/21/00 6:14:37 PM
Sodium	33,000	2,500		µg/L	1	12/22/00 11:12:50 AM
Vanadium	ND	50		µg/L	1	12/21/00 6:14:37 PM
Zinc	450	20		µg/L	1	12/21/00 6:14:37 PM
ARSENIC, TOTAL		**SW7060A**				Analyst: **APL**
Arsenic	ND	5.0		µg/L	1	12/26/00
MERCURY, TOTAL		**SW7470A**				Analyst: **MT**
Mercury	0.86	0.20		µg/L	1	12/26/00
LEAD, TOTAL		**SW7421**				Analyst: **APL**
Lead	1,200	500		µg/L	100	12/26/00
SELENIUM, TOTAL		**SW7740**				Analyst: **APL**
Selenium	ND	5.0		µg/L	1	12/26/00
THALLIUM, TOTAL		**SW7841**				Analyst: **APL**
Thallium	ND	5.0		µg/L	1	12/26/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	DUP-1
Lab Order:	0012182		
Project:	RIAC	**Collection Date:**	12/13/00
Lab ID:	0012182-07D	**Matrix:**	AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		**E160.1**				Analyst: **ZD**
Total Dissolved Solids (Residue, Filterable)	530	10		mg/L	1	12/20/00
ION CHROMATOGRAPHY		**E300**				Analyst: **RK**
Chloride	36	2.5		mg/L	5	12/28/00
Sulfate	2.0	1.0		mg/L	1	12/28/00
ALKALINITY, TOTAL		**E310.1**				Analyst: **ZD**
Alkalinity, Total (As CaCO3)	580	2.0		mg/L	1	12/27/00
NITROGEN, NITRATE (AS N)		**E353.2**				Analyst: **RK**
Nitrogen, Nitrate (As N)	ND	0.20	H	mg/L	1	12/15/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3439** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/21/00 4:31:34 PM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001221A** SeqNo: **97480**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	ND	200	µg/L									
Antimony	ND	20	µg/L									
Barium	ND	200	µg/L									
Beryllium	ND	5.0	µg/L									
Cadmium	ND	5.0	µg/L									
Calcium	ND	2,500	µg/L									
Chromium	ND	10	µg/L									
Cobalt	ND	50	µg/L									
Copper	ND	25	µg/L									
Iron	ND	100	µg/L									
Magnesium	ND	2,500	µg/L									
Manganese	ND	15	µg/L									
Nickel	ND	40	µg/L									
Silver	ND	7.0	µg/L									
Vanadium	ND	50	µg/L									
Zinc	19.41	20	µg/L									J

Sample ID: **MB-3439** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/22/00 10:30:32 AM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001222A** SeqNo: **97730**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	ND	2,500	µg/L									
Sodium	ND	2,500	µg/L									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3439** Batch ID: **3439** Test Code: **SW7060A** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97975**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Arsenic	ND	5.0	µg/L									

Sample ID: **MB-R6415** Batch ID: **R6415** Test Code: **E160.1** Units: **mg/L** Analysis Date **12/20/00** Prep Date:
Client ID: Run ID: **ING-WET_001220D** SeqNo: **97664**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Dissolved Solids (Residue,	ND	10	mg/L									

Sample ID: **MB-R6489** Batch ID: **R6489** Test Code: **E300** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227G** SeqNo: **98903**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chloride	ND	0.50	mg/L									
Sulfate	ND	1.0	mg/L									

Sample ID: **MB-R6498** Batch ID: **R6498** Test Code: **E300** Units: **mg/L** Analysis Date **12/28/00** Prep Date:
Client ID: Run ID: **ING-WET_001228C** SeqNo: **99022**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chloride	ND	0.50	mg/L									
Sulfate	ND	1.0	mg/L									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-R6470** Batch ID: **R6470** Test Code: **E310.1** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227D** SeqNo: **98587**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Alkalinity, Total (As CaCO3)	ND	2.0	mg/L									

Sample ID: **MB-122600A** Batch ID: **R6447** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/26/00** Prep Date:
Client ID: Run ID: **ING-WET_001226C** SeqNo: **98261**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	ND	0.020	mg/L									

Sample ID: **MB-R6448** Batch ID: **R6448** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227A** SeqNo: **98263**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	ND	0.020	mg/L									

Sample ID: **MB-R6467** Batch ID: **R6467** Test Code: **E353.2** Units: **mg/L** Analysis Date **12/15/00** Prep Date:
Client ID: Run ID: **ING-WET_001215M** SeqNo: **98540**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Nitrogen, Nitrate (As N)	ND	0.20	mg/L									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-R6496** Batch ID: **R6496** Test Code: **E410.4** Units: **mg/L** Analysis Date **12/28/00** Prep Date:
Client ID: Run ID: **ING-WET_001228B** SeqNo: **98993**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chemical Oxygen Demand	ND	50	mg/L									

Sample ID: **MB-3438** Batch ID: **3438** Test Code: **SW7470A** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/26/00**
Client ID: Run ID: **HG-FIMS_001226C** SeqNo: **98211**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	ND	0.20	µg/L									

Sample ID: **MB-3439** Batch ID: **3439** Test Code: **SW7421** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97976**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Lead	ND	5.0	µg/L									

Sample ID: **MB-3439** Batch ID: **3439** Test Code: **SW7740** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97977**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Selenium	ND	5.0	µg/L									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3439** Batch ID: **3439** Test Code: **SW7841** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/21/00**

Client ID: Run ID: **GFAA-6000_001226A** SeqNo: **98366**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Thallium	ND	5.0	µg/L									

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

SAMPLE & SAMPLE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Duplicate

Sample ID: **0012182-04Dd** Batch ID: **R6415** Test Code: **E160.1** Units: **mg/L** Analysis Date **12/20/00** Prep Date:
Client ID: **MW-7** Run ID: **ING-WET_001220D** SeqNo: **97678**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Dissolved Solids (Residue,	561	10	mg/L	0	0	0	0	0	557	0.716	20	

Sample ID: **0012182-07Dd** Batch ID: **R6415** Test Code: **E160.1** Units: **mg/L** Analysis Date **12/20/00** Prep Date:
Client ID: **DUP-1** Run ID: **ING-WET_001220D** SeqNo: **97679**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Dissolved Solids (Residue,	607	10	mg/L	0	0	0	0	0	534	12.8	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0012162-01DMS** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/21/00 4:50:26 PM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001221A** SeqNo: **97485**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	7744	200	µg/L	8000	0	96.8	75	125	0			
Antimony	1957	20	µg/L	2000	0	97.9	75	125	0			
Barium	4012	200	µg/L	4000	28.7	99.6	75	125	0			
Beryllium	787.3	5.0	µg/L	800	0	98.4	75	125	0			
Cadmium	787.5	5.0	µg/L	800	0	98.4	75	125	0			
Calcium	39680	2,500	µg/L	20000	20180	97.5	75	125	0			
Chromium	4041	10	µg/L	4000	0	101	75	125	0			
Cobalt	3985	50	µg/L	4000	0	99.6	75	125	0			
Copper	1941	25	µg/L	2000	15.54	96.3	75	125	0			
Iron	8514	100	µg/L	8000	709.9	97.5	75	125	0			
Magnesium	28690	2,500	µg/L	20000	8808	99.4	75	125	0			
Manganese	4077	15	µg/L	4000	4.76	102	75	125	0			
Nickel	4001	40	µg/L	4000	0	100	75	125	0			
Silver	394.4	7.0	µg/L	400	0	98.6	75	125	0			
Vanadium	4053	50	µg/L	4000	0	101	75	125	0			
Zinc	3931	20	µg/L	4000	23.42	97.7	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012162-01DMSD** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/21/00 4:55:16 PM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001221A** SeqNo: **97486**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	7914	200	µg/L	8000	0	98.9	75	125	7744	2.18	20	
Antimony	2011	20	µg/L	2000	0	101	75	125	1957	2.71	20	
Barium	4082	200	µg/L	4000	28.7	101	75	125	4012	1.72	20	
Beryllium	801.7	5.0	µg/L	800	0	100	75	125	787.3	1.81	20	
Cadmium	799.5	5.0	µg/L	800	0	99.9	75	125	787.5	1.52	20	
Calcium	41150	2,500	µg/L	20000	20180	105	75	125	39680	3.64	20	
Chromium	4118	10	µg/L	4000	0	103	75	125	4041	1.89	20	
Cobalt	4050	50	µg/L	4000	0	101	75	125	3985	1.61	20	
Copper	1989	25	µg/L	2000	15.54	98.7	75	125	1941	2.45	20	
Iron	8724	100	µg/L	8000	709.9	100	75	125	8514	2.44	20	
Magnesium	29320	2,500	µg/L	20000	8808	103	75	125	28690	2.18	20	
Manganese	4145	15	µg/L	4000	4.76	103	75	125	4077	1.65	20	
Nickel	4064	40	µg/L	4000	0	102	75	125	4001	1.55	20	
Silver	401.5	7.0	µg/L	400	0	100	75	125	394.4	1.79	20	
Vanadium	4133	50	µg/L	4000	0	103	75	125	4053	1.94	20	
Zinc	4027	20	µg/L	4000	23.42	100	75	125	3931	2.41	20	

Sample ID: **0012162-01DMS** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/22/00 10:42:39 AM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001222A** SeqNo: **97735**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	21770	2,500	µg/L	20000	733.1	105	75	125	0			
Sodium	29820	2,500	µg/L	20000	9304	103	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012162-01DMSD** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/22/00 10:46:09 AM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001222A** SeqNo: **97736**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	22060	2,500	µg/L	20000	733.1	107	75	125	21770	1.35	20	
Sodium	30210	2,500	µg/L	20000	9304	105	75	125	29820	1.29	20	

Sample ID: **0012162-01DMS** Batch ID: **3439** Test Code: **SW7060A** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97942**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Arsenic	56.23	5.0	µg/L	50	0	112	75	125	0			

Sample ID: **0012162-01DMSD** Batch ID: **3439** Test Code: **SW7060A** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97945**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Arsenic	60.44	5.0	µg/L	50	0	121	75	125	56.23	7.21	20	

Sample ID: **0012182-01DMS** Batch ID: **R6489** Test Code: **E300** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: **MW-1** Run ID: **ING-WET_001227G** SeqNo: **98908**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Sulfate	20.16	1.0	mg/L	15	5.444	98.1	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: **0012182-01DMSD** Batch ID: **R6489** Test Code: **E300** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: **MW-1** Run ID: **ING-WET_001227G** SeqNo: **98909**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Sulfate	20.16	1.0	mg/L	15	5.444	98.1	80	120	20.16	0.0149	20	

Sample ID: **0012182-01DMS** Batch ID: **R6489** Test Code: **E300** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: **MW-1** Run ID: **ING-WET_001227G** SeqNo: **98913**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chloride	33.12	0.50	mg/L	3	29.54	119	80	120	0			

Sample ID: **0012182-01DMSD** Batch ID: **R6489** Test Code: **E300** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: **MW-1** Run ID: **ING-WET_001227G** SeqNo: **98914**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chloride	33.19	0.50	mg/L	3	29.54	122	80	120	33.12	0.211	20	S

Sample ID: **0012162-01AMS** Batch ID: **R6470** Test Code: **E310.1** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227D** SeqNo: **98601**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Alkalinity, Total (As CaCO3)	98	2.0	mg/L	50	47	102	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
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AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012162-01AMSD** Batch ID: **R6470** Test Code: **E310.1** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227D** SeqNo: **98602**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Alkalinity, Total (As CaCO3)	100	2.0	mg/L	50	47	106	80	120	98	2.02	20	

Sample ID: **0012147-11CMS** Batch ID: **R6447** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/26/00** Prep Date:
Client ID: Run ID: **ING-WET_001226C** SeqNo: **98259**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	0.189	0.020	mg/L	0.2	0	94.5	80	120	0			

Sample ID: **0012147-11CMSD** Batch ID: **R6447** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/26/00** Prep Date:
Client ID: Run ID: **ING-WET_001226C** SeqNo: **98260**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	0.187	0.020	mg/L	0.2	0	93.5	80	120	0.189	1.06	20	

Sample ID: **0012182-01BMS** Batch ID: **R6448** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: **MW-1** Run ID: **ING-WET_001227A** SeqNo: **98269**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	0.188	0.020	mg/L	0.2	0	94	80	120	0			

Qualifiers:
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RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012182-01BMSD** Batch ID: **R6448** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: **MW-1** Run ID: **ING-WET_001227A** SeqNo: **98270**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	0.189	0.020	mg/L	0.2	0	94.5	80	120	0.188	0.531	20	

Sample ID: **0012182-07DMS** Batch ID: **R6467** Test Code: **E353.2** Units: **mg/L** Analysis Date **12/15/00** Prep Date:
Client ID: **DUP-1** Run ID: **ING-WET_001215M** SeqNo: **98550**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Nitrogen, Nitrate (As N)	3.746	0.20	mg/L	4	0	93.7	80	120	0			H

Sample ID: **0012182-07DMSD** Batch ID: **R6467** Test Code: **E353.2** Units: **mg/L** Analysis Date **12/15/00** Prep Date:
Client ID: **DUP-1** Run ID: **ING-WET_001215M** SeqNo: **98551**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Nitrogen, Nitrate (As N)	3.726	0.20	mg/L	4	0	93.2	80	120	3.746	0.546	20	H

Sample ID: **0012243-01CMS** Batch ID: **R6496** Test Code: **E410.4** Units: **mg/L** Analysis Date **12/28/00** Prep Date:
Client ID: Run ID: **ING-WET_001228B** SeqNo: **99010**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chemical Oxygen Demand	520.6	50	mg/L	500	26.23	98.9	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012243-01CMSD** Batch ID: **R6496** Test Code: **E410.4** Units: **mg/L** Analysis Date **12/28/00** Prep Date:
Client ID: Run ID: **ING-WET_001228B** SeqNo: **99011**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chemical Oxygen Demand	525.1	50	mg/L	500	26.23	99.8	80	120	520.6	0.864	20	

Sample ID: **0012161-01CMS** Batch ID: **3438** Test Code: **SW7470A** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/26/00**
Client ID: Run ID: **HG-FIMS_001226C** SeqNo: **98190**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	4.804	0.20	µg/L	4	0	120	75	125	0			

Sample ID: **0012161-01CMSD** Batch ID: **3438** Test Code: **SW7470A** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/26/00**
Client ID: Run ID: **HG-FIMS_001226C** SeqNo: **98191**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	4.932	0.20	µg/L	4	0	123	75	125	4.804	2.63	20	

Sample ID: **0012162-01DMS** Batch ID: **3439** Test Code: **SW7421** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97943**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Lead	51.79	5.0	µg/L	50	11.77	80	75	125	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012162-01DMSD** Batch ID: **3439** Test Code: **SW7421** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97946**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Lead	53.53	5.0	µg/L	50	11.77	83.5	75	125	51.79	3.32	20	

Sample ID: **0012162-01DMS** Batch ID: **3439** Test Code: **SW7740** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97944**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Selenium	36.42	5.0	µg/L	40	0	91.1	75	125	0			

Sample ID: **0012162-01DMSD** Batch ID: **3439** Test Code: **SW7740** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97947**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Selenium	36.05	5.0	µg/L	40	0	90.1	75	125	36.42	1.04	20	

Sample ID: **0012162-01DMS** Batch ID: **3439** Test Code: **SW7841** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001226A** SeqNo: **98355**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Thallium	36.48	5.0	µg/L	40	0	91.2	75	125	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0012162-01DMSD** Batch ID: **3439** Test Code: **SW7841** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001226A** SeqNo: **98356**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Thallium	36.68	5.0	µg/L	40	0	91.7	75	125	36.48	0.545	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-3439** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/21/00 4:35:02 PM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001221A** SeqNo: **97481**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	7784	200	µg/L	8000	0	97.3	80	120	0			
Antimony	1969	20	µg/L	2000	0	98.5	80	120	0			
Barium	4008	200	µg/L	4000	0	100	80	120	0			
Beryllium	794.6	5.0	µg/L	800	0	99.3	80	120	0			
Cadmium	798.7	5.0	µg/L	800	0	99.8	80	120	0			
Calcium	19350	2,500	µg/L	20000	0	96.7	80	120	0			
Chromium	4078	10	µg/L	4000	0	102	80	120	0			
Cobalt	4059	50	µg/L	4000	0	101	80	120	0			
Copper	1953	25	µg/L	2000	0	97.6	80	120	0			
Iron	8032	100	µg/L	8000	0	100	80	120	0			
Magnesium	20240	2,500	µg/L	20000	0	101	80	120	0			
Manganese	4081	15	µg/L	4000	0	102	80	120	0			
Nickel	4055	40	µg/L	4000	0	101	80	120	0			
Silver	395.3	7.0	µg/L	400	0	98.8	80	120	0			
Vanadium	4047	50	µg/L	4000	0	101	80	120	0			
Zinc	3986	20	µg/L	4000	19.41	99.2	80	120	0			

Sample ID: **LCS-3439** Batch ID: **3439** Test Code: **SW6010B** Units: **µg/L** Analysis Date **12/22/00 10:32:55 AM** Prep Date: **12/21/00**
Client ID: Run ID: **ICP-OPTIMA_001222A** SeqNo: **97731**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	20910	2,500	µg/L	20000	0	105	80	120	0			
Sodium	20380	2,500	µg/L	20000	0	102	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-3439** Batch ID: **3439** Test Code: **SW7060A** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97972**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Arsenic	53.57	5.0	µg/L	50	0	107	80	120	0			

Sample ID: **LCS-R6415** Batch ID: **R6415** Test Code: **E160.1** Units: **mg/L** Analysis Date **12/20/00** Prep Date:
Client ID: Run ID: **ING-WET_001220D** SeqNo: **97665**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Dissolved Solids (Residue,	2958	10	mg/L	2970	0	99.6	80	120	0			

Sample ID: **LCS-R6489** Batch ID: **R6489** Test Code: **E300** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227G** SeqNo: **98904**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chloride	2.89	0.50	mg/L	3	0	96.3	80	120	0			
Sulfate	14.6	1.0	mg/L	15	0	97.4	80	120	0			

Sample ID: **LCS-R6498** Batch ID: **R6498** Test Code: **E300** Units: **mg/L** Analysis Date **12/28/00** Prep Date:
Client ID: Run ID: **ING-WET_001228C** SeqNo: **99023**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chloride	2.873	0.50	mg/L	3	0	95.8	80	120	0			
Sulfate	14.66	1.0	mg/L	15	0	97.8	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-R6470** Batch ID: **R6470** Test Code: **E310.1** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227D** SeqNo: **98588**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Alkalinity, Total (As CaCO3)	52	2.0	mg/L	50	0	104	80	120	0			

Sample ID: **LCS-122600A** Batch ID: **R6447** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/26/00** Prep Date:
Client ID: Run ID: **ING-WET_001226C** SeqNo: **98262**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	0.189	0.020	mg/L	0.2	0	94.5	90	110	0			

Sample ID: **LCS-R6448** Batch ID: **R6448** Test Code: **E335.2** Units: **mg/L** Analysis Date **12/27/00** Prep Date:
Client ID: Run ID: **ING-WET_001227A** SeqNo: **98264**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Cyanide	0.191	0.020	mg/L	0.2	0	95.5	90	110	0			

Sample ID: **LCS-R6467** Batch ID: **R6467** Test Code: **E353.2** Units: **mg/L** Analysis Date **12/15/00** Prep Date:
Client ID: Run ID: **ING-WET_001215M** SeqNo: **98541**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Nitrogen, Nitrate (As N)	4.278	0.20	mg/L	4	0	107	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-R6496** Batch ID: **R6496** Test Code: **E410.4** Units: **mg/L** Analysis Date **12/28/00** Prep Date:
Client ID: Run ID: **ING-WET_001228B** SeqNo: **98994**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Chemical Oxygen Demand	510	50	mg/L	500	0	102	80	120	0			

Sample ID: **LCS-3438** Batch ID: **3438** Test Code: **SW7470A** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/26/00**
Client ID: Run ID: **HG-FIMS_001226C** SeqNo: **98210**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	4.77	0.20	µg/L	4	0	119	80	120	0			

Sample ID: **LCS-3439** Batch ID: **3439** Test Code: **SW7421** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97973**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Lead	52.31	5.0	µg/L	50	0	105	80	120	0			

Sample ID: **LCS-3439** Batch ID: **3439** Test Code: **SW7740** Units: **µg/L** Analysis Date **12/22/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001222A** SeqNo: **97974**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Selenium	40.15	5.0	µg/L	40	0	100	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *24-Jan-01*

CLIENT: Camp Dresser and McKee
Work Order: 0012182
Project: RIAC

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-3439** Batch ID: **3439** Test Code: **SW7841** Units: **µg/L** Analysis Date **12/26/00** Prep Date: **12/21/00**
Client ID: Run ID: **GFAA-6000_001226A** SeqNo: **98323**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Thallium	41.33	5.0	µg/L	40	0	103	80	120	0			

Qualifiers:
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J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

AMRO Environmental Laboratories Corporation

111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 · FAX: (603) 429-8496

December 07, 2000

Matt Dentch
Camp Dresser and McKee
1 Cambridge Place
50 Hampshire Street
Cambridge, MA 02139
TEL: (617) 452-6326
FAX (617) 452-8000

RE: RIAC- TF Green Airport

Order No.: 0011179

Dear Matt Dentch:

AMRO Environmental Laboratories Corp. received 5 samples on 11/16/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please see the enclosed Case Narrative for quality control deviations that were encountered during the analyses associated with this project.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

WORK ORDER SAMPLE SUMMARY

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Project: RIAC- TF Green Airport
Lab Order: 0011179
Date Received: 11/16/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0011179-01A	MW6 S-11	11/15/00
0011179-02A	MW5 S-10	11/15/00
0011179-03A	MW6 S-11	11/15/00
0011179-04A	MW5 S-10	11/15/00
0011179-05A	TRIP BLANK	11/15/00

Lab Order: 0011179
Client: Camp Dresser and McKee
Project: RIAC- TF Green Airport

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011179-01A	MW6 S-11	11/15/00	Soil	ICP METALS, 3051/6010		11/24/00	11/27/00
				ICP METALS, 3051/6010		11/24/00	11/28/00
				MERCURY, Soil		11/20/00	11/21/00
				ORGANOCHLORINE PESTICIDES		11/17/00	11/21/00
				PCBS IN SOIL/SOLIDS		11/17/00	11/18/00
				Percent Moisture			11/17/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/17/00	11/20/00
				TOC, Soil			11/22/00
				TPH/IR (Modified for Soils/Solids)			11/24/00
0011179-02A	MW5 S-10			ICP METALS, 3051/6010		11/24/00	11/27/00
				ICP METALS, 3051/6010		11/24/00	11/28/00
				MERCURY, Soil		11/20/00	11/21/00
				ORGANOCHLORINE PESTICIDES		11/17/00	11/21/00
				PCBS IN SOIL/SOLIDS		11/17/00	11/18/00
				Percent Moisture			11/17/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/17/00	11/20/00
				TOC, Soil			11/22/00
				TPH/IR (Modified for Soils/Solids)			11/24/00
0011179-03A	MW6 S-11			VOLATILES by GC/MS, Medium-Level		11/15/00	11/17/00
0011179-04A	MW5 S-10			VOLATILES by GC/MS, Medium-Level		11/15/00	11/17/00
0011179-05A	TRIP BLANK			VOLATILES by GC/MS, Medium-Level		11/15/00	11/17/00

GC/MS VOLATILES

SW-846 METHOD 8260B/MEDIUM LEVEL

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW6 S-11
Lab Order: 0011179
Project: RIAC- TF Green Airport
Collection Date: 11/15/00
Lab ID: 0011179-03A
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: **LN**
Dichlorodifluoromethane	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Chloromethane	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Vinyl chloride	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Chloroethane	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Bromomethane	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Trichlorofluoromethane	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Acetone	ND	420		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1-Dichloroethene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Carbon disulfide	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Methylene chloride	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
Methyl tert-butyl ether	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
trans-1,2-Dichloroethene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1-Dichloroethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
2-Butanone	ND	420		µg/Kg-dry	1	11/17/00 9:07:00 PM
2,2-Dichloropropane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
cis-1,2-Dichloroethene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Chloroform	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Bromochloromethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1,1-Trichloroethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1-Dichloropropene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Carbon tetrachloride	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2-Dichloroethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Benzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Trichloroethene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2-Dichloropropane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Bromodichloromethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Dibromomethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
4-Methyl-2-pentanone	ND	420		µg/Kg-dry	1	11/17/00 9:07:00 PM
cis-1,3-Dichloropropene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Toluene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
trans-1,3-Dichloropropene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1,2-Trichloroethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2-Dibromoethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
2-Hexanone	ND	420		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,3-Dichloropropane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Tetrachloroethene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Dibromochloromethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Chlorobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1,1,2-Tetrachloroethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW6 S-11
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-03A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
m,p-Xylene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
o-Xylene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Styrene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Bromoform	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Isopropylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,1,2,2-Tetrachloroethane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2,3-Trichloropropane	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Bromobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
n-Propylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
2-Chlorotoluene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
4-Chlorotoluene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,3,5-Trimethylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
tert-Butylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2,4-Trimethylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
sec-Butylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
4-Isopropyltoluene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,3-Dichlorobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,4-Dichlorobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
n-Butylbenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2-Dichlorobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2-Dibromo-3-chloropropane	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2,4-Trichlorobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Hexachlorobutadiene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Naphthalene	ND	84		µg/Kg-dry	1	11/17/00 9:07:00 PM
1,2,3-Trichlorobenzene	ND	42		µg/Kg-dry	1	11/17/00 9:07:00 PM
Surr: Dibromofluoromethane	76.6	66-121		%REC	1	11/17/00 9:07:00 PM
Surr: 1,2-Dichloroethane-d4	81.6	64-125		%REC	1	11/17/00 9:07:00 PM
Surr: Toluene-d8	83.9	67-124		%REC	1	11/17/00 9:07:00 PM
Surr: 4-Bromofluorobenzene	87.2	62-119		%REC	1	11/17/00 9:07:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW5 S-10
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-04A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: **LN**
Dichlorodifluoromethane	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Chloromethane	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Vinyl chloride	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Chloroethane	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Bromomethane	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Trichlorofluoromethane	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Acetone	ND	500		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1-Dichloroethene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Carbon disulfide	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Methylene chloride	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
Methyl tert-butyl ether	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
trans-1,2-Dichloroethene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1-Dichloroethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
2-Butanone	ND	500		µg/Kg-dry	1	11/17/00 9:43:00 PM
2,2-Dichloropropane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
cis-1,2-Dichloroethene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Chloroform	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Bromochloromethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1,1-Trichloroethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1-Dichloropropene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Carbon tetrachloride	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2-Dichloroethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Benzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Trichloroethene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2-Dichloropropane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Bromodichloromethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Dibromomethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
4-Methyl-2-pentanone	ND	500		µg/Kg-dry	1	11/17/00 9:43:00 PM
cis-1,3-Dichloropropene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Toluene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
trans-1,3-Dichloropropene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1,2-Trichloroethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2-Dibromoethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
2-Hexanone	ND	500		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,3-Dichloropropane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Tetrachloroethene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Dibromochloromethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Chlorobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1,1,2-Tetrachloroethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW5 S-10
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-04A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
m,p-Xylene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
o-Xylene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Styrene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Bromoform	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Isopropylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,1,2,2-Tetrachloroethane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2,3-Trichloropropane	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Bromobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
n-Propylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
2-Chlorotoluene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
4-Chlorotoluene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,3,5-Trimethylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
tert-Butylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2,4-Trimethylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
sec-Butylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
4-Isopropyltoluene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,3-Dichlorobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,4-Dichlorobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
n-Butylbenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2-Dichlorobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2-Dibromo-3-chloropropane	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2,4-Trichlorobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Hexachlorobutadiene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Naphthalene	ND	100		µg/Kg-dry	1	11/17/00 9:43:00 PM
1,2,3-Trichlorobenzene	ND	50		µg/Kg-dry	1	11/17/00 9:43:00 PM
Surr: Dibromofluoromethane	81.5	66-121		%REC	1	11/17/00 9:43:00 PM
Surr: 1,2-Dichloroethane-d4	88.2	64-125		%REC	1	11/17/00 9:43:00 PM
Surr: Toluene-d8	90.1	67-124		%REC	1	11/17/00 9:43:00 PM
Surr: 4-Bromofluorobenzene	90.3	62-119		%REC	1	11/17/00 9:43:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

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- See Case Narrative

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AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	TRIP BLANK
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-05A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: **LN**
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Chloromethane	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Chloroethane	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Bromomethane	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Acetone	ND	250		µg/Kg	1	11/17/00 8:32:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
2-Butanone	ND	250		µg/Kg	1	11/17/00 8:32:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Chloroform	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Benzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/17/00 8:32:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Toluene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/17/00 8:32:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM

Qualifiers:

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AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	TRIP BLANK
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-05A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
o-Xylene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Styrene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Bromoform	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Naphthalene	ND	50		µg/Kg	1	11/17/00 8:32:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	11/17/00 8:32:00 PM
Surr: Dibromofluoromethane	93.9	66-121		%REC	1	11/17/00 8:32:00 PM
Surr: 1,2-Dichloroethane-d4	100	64-125		%REC	1	11/17/00 8:32:00 PM
Surr: Toluene-d8	103	67-124		%REC	1	11/17/00 8:32:00 PM
Surr: 4-Bromofluorobenzene	98.7	62-119		%REC	1	11/17/00 8:32:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MBLK-11/17/00** Batch ID: **R5950** Test Code: **SW8260B** Units: **µg/Kg** Analysis Date **11/17/00 4:57:00 PM** Prep Date **11/17/00**
Client ID: Run ID: **V-1_001117A** SeqNo: **89766**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Dichlorodifluoromethane	ND	50	µg/Kg									
Chloromethane	ND	50	µg/Kg									
Vinyl chloride	ND	25	µg/Kg									
Chloroethane	ND	50	µg/Kg									
Bromomethane	ND	50	µg/Kg									
Trichlorofluoromethane	ND	50	µg/Kg									
Acetone	ND	250	µg/Kg									
1,1-Dichloroethene	ND	25	µg/Kg									
Carbon disulfide	30	50	µg/Kg									J
Methylene chloride	ND	50	µg/Kg									
Methyl tert-butyl ether	ND	25	µg/Kg									
trans-1,2-Dichloroethene	ND	25	µg/Kg									
1,1-Dichloroethane	ND	25	µg/Kg									
2-Butanone	ND	250	µg/Kg									
2,2-Dichloropropane	ND	25	µg/Kg									
cis-1,2-Dichloroethene	ND	25	µg/Kg									
Chloroform	ND	25	µg/Kg									
Bromochloromethane	ND	25	µg/Kg									
1,1,1-Trichloroethane	ND	25	µg/Kg									
1,1-Dichloropropene	ND	25	µg/Kg									
Carbon tetrachloride	ND	25	µg/Kg									
1,2-Dichloroethane	ND	25	µg/Kg									
Benzene	ND	25	µg/Kg									
Trichloroethene	ND	25	µg/Kg									
1,2-Dichloropropane	ND	25	µg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT

Method Blank

Bromodichloromethane	ND	25	µg/Kg	
Dibromomethane	ND	25	µg/Kg	
4-Methyl-2-pentanone	ND	250	µg/Kg	
cis-1,3-Dichloropropene	ND	25	µg/Kg	
Toluene	ND	25	µg/Kg	
trans-1,3-Dichloropropene	ND	25	µg/Kg	
1,1,2-Trichloroethane	ND	25	µg/Kg	
1,2-Dibromoethane	ND	25	µg/Kg	
2-Hexanone	ND	250	µg/Kg	
1,3-Dichloropropane	ND	25	µg/Kg	
Tetrachloroethene	ND	25	µg/Kg	
Dibromochloromethane	ND	25	µg/Kg	
Chlorobenzene	ND	25	µg/Kg	
1,1,1,2-Tetrachloroethane	ND	25	µg/Kg	
Ethylbenzene	ND	25	µg/Kg	
m,p-Xylene	ND	25	µg/Kg	
o-Xylene	ND	25	µg/Kg	
Styrene	ND	25	µg/Kg	
Bromoform	ND	25	µg/Kg	
Isopropylbenzene	ND	25	µg/Kg	
1,1,2,2-Tetrachloroethane	ND	25	µg/Kg	
1,2,3-Trichloropropane	ND	25	µg/Kg	
Bromobenzene	ND	25	µg/Kg	
n-Propylbenzene	ND	25	µg/Kg	
2-Chlorotoluene	ND	25	µg/Kg	
4-Chlorotoluene	ND	25	µg/Kg	
1,3,5-Trimethylbenzene	ND	25	µg/Kg	
tert-Butylbenzene	ND	25	µg/Kg	
1,2,4-Trimethylbenzene	ND	25	µg/Kg	
sec-Butylbenzene	13.75	25	µg/Kg	J
4-Isopropyltoluene	ND	25	µg/Kg	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

1,3-Dichlorobenzene	ND	25	µg/Kg						
1,4-Dichlorobenzene	ND	25	µg/Kg						
n-Butylbenzene	ND	25	µg/Kg						
1,2-Dichlorobenzene	ND	25	µg/Kg						
1,2-Dibromo-3-chloropropane	ND	50	µg/Kg						
1,2,4-Trichlorobenzene	ND	25	µg/Kg						
Hexachlorobutadiene	ND	25	µg/Kg						
Naphthalene	ND	50	µg/Kg						
1,2,3-Trichlorobenzene	ND	25	µg/Kg						
Surr: Dibromofluoromethane	2284	25	µg/Kg	2500	0	91.4	66	121	0
Surr: 1,2-Dichloroethane-d4	2474	25	µg/Kg	2500	0	99	64	125	0
Surr: Toluene-d8	2318	25	µg/Kg	2500	0	92.7	67	124	0
Surr: 4-Bromofluorobenzene	2229	25	µg/Kg	2500	0	89.2	62	119	0

Qualifiers:
ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011169-05BMS** Batch ID: **R5950** Test Code: **SW8260B** Units: **µg/Kg-dry** Analysis Date **11/17/00 2:32:00 PM** Prep Date **11/15/00**
Client ID: Run ID: **V-1_001117A** SeqNo: **89764**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	460.7	24	µg/Kg-dry	486.5	0	94.7	61	140	0			
Benzene	515.7	24	µg/Kg-dry	486.5	0	106	71	123	0			
Trichloroethene	472.9	24	µg/Kg-dry	486.5	0	97.2	72	124	0			
Toluene	494.8	24	µg/Kg-dry	486.5	0	102	71	126	0			
Chlorobenzene	473.1	24	µg/Kg-dry	486.5	0	97.2	73	126	0			
Surr: Dibromofluoromethane	2109	24	µg/Kg-dry	2433	0	86.7	66	121	0			
Surr: 1,2-Dichloroethane-d4	2287	24	µg/Kg-dry	2433	0	94	64	125	0			
Surr: Toluene-d8	2070	24	µg/Kg-dry	2433	0	85.1	67	124	0			
Surr: 4-Bromofluorobenzene	2024	24	µg/Kg-dry	2433	0	83.2	62	119	0			

Sample ID **0011169-05BMSD** Batch ID: **R5950** Test Code: **SW8260B** Units: **µg/Kg-dry** Analysis Date **11/17/00 3:09:00 PM** Prep Date **11/15/00**
Client ID: Run ID: **V-1_001117A** SeqNo: **89765**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	497.2	24	µg/Kg-dry	486.5	0	102	61	140	460.7	7.62	25	
Benzene	525	24	µg/Kg-dry	486.5	0	108	71	123	515.7	1.78	25	
Trichloroethene	490.7	24	µg/Kg-dry	486.5	0	101	72	124	472.9	3.69	25	
Toluene	509.6	24	µg/Kg-dry	486.5	0	105	71	126	494.8	2.95	25	
Chlorobenzene	488	24	µg/Kg-dry	486.5	0	100	73	126	473.1	3.09	25	
Surr: Dibromofluoromethane	2076	24	µg/Kg-dry	2433	0	85.4	66	121	0	0	0	
Surr: 1,2-Dichloroethane-d4	2307	24	µg/Kg-dry	2433	0	94.8	64	125	0	0	0	
Surr: Toluene-d8	2063	24	µg/Kg-dry	2433	0	84.8	67	124	0	0	0	
Surr: 4-Bromofluorobenzene	2035	24	µg/Kg-dry	2433	0	83.7	62	119	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-11/17/00** Batch ID: **R5950** Test Code: **SW8260B** Units: **µg/Kg** Analysis Date **11/17/00 1:56:00 PM** Prep Date **11/17/00**

Client ID: Run ID: **V-1_001117A** SeqNo: **89763**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	446.8	25	µg/Kg	500	0	89.4	66	138	0			
Benzene	511.5	25	µg/Kg	500	0	102	76	118	0			
Trichloroethene	453.5	25	µg/Kg	500	0	90.7	72	123	0			
Toluene	489	25	µg/Kg	500	0	97.8	74	119	0			
Chlorobenzene	480.8	25	µg/Kg	500	0	96.2	76	125	0			
Surr: Dibromofluoromethane	2252	25	µg/Kg	2500	0	90.1	66	121	0			
Surr: 1,2-Dichloroethane-d4	2454	25	µg/Kg	2500	0	98.2	64	125	0			
Surr: Toluene-d8	2219	25	µg/Kg	2500	0	88.8	67	124	0			
Surr: 4-Bromofluorobenzene	2273	25	µg/Kg	2500	0	90.9	62	119	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

GC/MS SEMIVOLATILES-SOIL

METHOD 8270C

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011179
Project: RIAC- TF Green Airport
Lab ID: 0011179-01A

Client Sample ID: MW6 S-11
Collection Date: 11/15/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benzyl alcohol	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benzoic acid	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Naphthalene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Chloro-3-methylphenol	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
2-Methylnaphthalene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2-Nitroaniline	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Acenaphthylene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
3-Nitroaniline	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Nitrophenol	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,4-Dinitrophenol	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
Acenaphthene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Dibenzofuran	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011179
Project: RIAC- TF Green Airport
Lab ID: 0011179-01A

Client Sample ID: MW6 S-11
Collection Date: 11/15/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Fluorene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Nitroaniline	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
4,6-Dinitro-2-methylphenol	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Pentachlorophenol	ND	590		µg/Kg-dry	1	11/20/00 7:13:00 PM
Phenanthrene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Anthracene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Carbazole	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Fluoranthene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Pyrene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
3,3´-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benz(a)anthracene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Chrysene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benzo(b)fluoranthene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benzo(k)fluoranthene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benzo(a)pyrene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Dibenz(a,h)anthracene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Indeno(1,2,3-cd)pyrene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Benzo(g,h,i)perylene	ND	300		µg/Kg-dry	1	11/20/00 7:13:00 PM
Surr: 2-Fluorophenol	60.2	27-98		%REC	1	11/20/00 7:13:00 PM
Surr: Phenol-d5	60.5	31-102		%REC	1	11/20/00 7:13:00 PM
Surr: Nitrobenzene-d5	60.8	33-97		%REC	1	11/20/00 7:13:00 PM
Surr: 2-Fluorobiphenyl	63.8	42-100		%REC	1	11/20/00 7:13:00 PM
Surr: 2,4,6-Tribromophenol	73.3	40-117		%REC	1	11/20/00 7:13:00 PM
Surr: 4-Terphenyl-d14	75.4	44-109		%REC	1	11/20/00 7:13:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011179
Project: RIAC- TF Green Airport
Lab ID: 0011179-02A

Client Sample ID: MW5 S-10
Collection Date: 11/15/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Bis(2-chloroethyl)ether	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2-Chlorophenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
1,3-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
1,4-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benzyl alcohol	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
2-Methylphenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
1,2-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Bis(2-chloroisopropyl)ether	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Methylphenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
N-Nitrosodi-n-propylamine	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Hexachloroethane	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Nitrobenzene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Isophorone	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,4-Dimethylphenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benzoic acid	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
2-Nitrophenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Bis(2-chloroethoxy)methane	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,4-Dichlorophenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
1,2,4-Trichlorobenzene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Naphthalene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Chloroaniline	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Hexachlorobutadiene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Chloro-3-methylphenol	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
2-Methylnaphthalene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Hexachlorocyclopentadiene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,4,6-Trichlorophenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,4,5-Trichlorophenol	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2-Chloronaphthalene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2-Nitroaniline	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
Dimethyl phthalate	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,6-Dinitrotoluene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Acenaphthylene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
3-Nitroaniline	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Nitrophenol	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,4-Dinitrophenol	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
Acenaphthene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
2,4-Dinitrotoluene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Dibenzofuran	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011179
Project: RIAC- TF Green Airport
Lab ID: 0011179-02A

Client Sample ID: MW5 S-10
Collection Date: 11/15/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Chlorophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Fluorene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Nitroaniline	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
4,6-Dinitro-2-methylphenol	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
N-Nitrosodiphenylamine	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
4-Bromophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Hexachlorobenzene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Pentachlorophenol	ND	570		µg/Kg-dry	1	11/20/00 7:39:00 PM
Phenanthrene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Anthracene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Carbazole	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Di-n-butyl phthalate	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Fluoranthene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Pyrene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Butyl benzyl phthalate	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Bis(2-ethylhexyl)phthalate	4,500	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
3,3'-Dichlorobenzidine	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benz(a)anthracene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Chrysene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Di-n-octyl phthalate	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benzo(b)fluoranthene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benzo(k)fluoranthene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benzo(a)pyrene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Dibenz(a,h)anthracene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Indeno(1,2,3-cd)pyrene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Benzo(g,h,i)perylene	ND	290		µg/Kg-dry	1	11/20/00 7:39:00 PM
Surr: 2-Fluorophenol	53.6	27-98		%REC	1	11/20/00 7:39:00 PM
Surr: Phenol-d5	51.6	31-102		%REC	1	11/20/00 7:39:00 PM
Surr: Nitrobenzene-d5	53.3	33-97		%REC	1	11/20/00 7:39:00 PM
Surr: 2-Fluorobiphenyl	55.9	42-100		%REC	1	11/20/00 7:39:00 PM
Surr: 2,4,6-Tribromophenol	68.9	40-117		%REC	1	11/20/00 7:39:00 PM
Surr: 4-Terphenyl-d14	67.7	44-109		%REC	1	11/20/00 7:39:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3194** Batch ID: **3194** Test Code: **SW8270C** Units: **µg/Kg** Analysis Date **11/20/00 6:20:00 PM** Prep Date **11/17/00**

Client ID: Run ID: **SV-4_001120A** SeqNo: **89638**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	ND	250	µg/Kg									
Bis(2-chloroethyl)ether	ND	250	µg/Kg									
2-Chlorophenol	ND	250	µg/Kg									
1,3-Dichlorobenzene	ND	250	µg/Kg									
1,4-Dichlorobenzene	ND	250	µg/Kg									
Benzyl alcohol	ND	500	µg/Kg									
2-Methylphenol	ND	250	µg/Kg									
1,2-Dichlorobenzene	ND	250	µg/Kg									
Bis(2-chloroisopropyl)ether	ND	250	µg/Kg									
4-Methylphenol	ND	250	µg/Kg									
N-Nitrosodi-n-propylamine	ND	250	µg/Kg									
Hexachloroethane	ND	250	µg/Kg									
Nitrobenzene	ND	250	µg/Kg									
Isophorone	ND	250	µg/Kg									
2,4-Dimethylphenol	ND	250	µg/Kg									
Benzoic acid	ND	500	µg/Kg									
2-Nitrophenol	ND	250	µg/Kg									
Bis(2-chloroethoxy)methane	ND	250	µg/Kg									
2,4-Dichlorophenol	ND	250	µg/Kg									
1,2,4-Trichlorobenzene	ND	250	µg/Kg									
Naphthalene	ND	250	µg/Kg									
4-Chloroaniline	ND	250	µg/Kg									
Hexachlorobutadiene	ND	250	µg/Kg									
4-Chloro-3-methylphenol	ND	500	µg/Kg									
2-Methylnaphthalene	ND	250	µg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Hexachlorocyclopentadiene	ND	250	µg/Kg
2,4,6-Trichlorophenol	ND	250	µg/Kg
2,4,5-Trichlorophenol	ND	250	µg/Kg
2-Chloronaphthalene	ND	250	µg/Kg
2-Nitroaniline	ND	500	µg/Kg
Dimethyl phthalate	ND	250	µg/Kg
2,6-Dinitrotoluene	ND	250	µg/Kg
Acenaphthylene	ND	250	µg/Kg
3-Nitroaniline	ND	500	µg/Kg
4-Nitrophenol	ND	500	µg/Kg
2,4-Dinitrophenol	ND	500	µg/Kg
Acenaphthene	ND	250	µg/Kg
2,4-Dinitrotoluene	ND	250	µg/Kg
Dibenzofuran	ND	250	µg/Kg
Diethyl phthalate	ND	250	µg/Kg
4-Chlorophenyl phenyl ether	ND	250	µg/Kg
Fluorene	ND	250	µg/Kg
4-Nitroaniline	ND	500	µg/Kg
4,6-Dinitro-2-methylphenol	ND	500	µg/Kg
N-Nitrosodiphenylamine	ND	250	µg/Kg
1,2-Diphenylhydrazine (as Azobe	ND	250	µg/Kg
4-Bromophenyl phenyl ether	ND	250	µg/Kg
Hexachlorobenzene	ND	250	µg/Kg
Pentachlorophenol	ND	500	µg/Kg
Phenanthrene	ND	250	µg/Kg
Anthracene	ND	250	µg/Kg
Carbazole	ND	250	µg/Kg
Di-n-butyl phthalate	ND	250	µg/Kg
Fluoranthene	ND	250	µg/Kg
Pyrene	ND	250	µg/Kg
Butyl benzyl phthalate	ND	250	µg/Kg

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Bis(2-ethylhexyl)phthalate	ND	250	µg/Kg						
3,3'-Dichlorobenzidine	ND	250	µg/Kg						
Benz(a)anthracene	ND	250	µg/Kg						
Chrysene	ND	250	µg/Kg						
Di-n-octyl phthalate	ND	250	µg/Kg						
Benzo(b)fluoranthene	ND	250	µg/Kg						
Benzo(k)fluoranthene	ND	250	µg/Kg						
Benzo(a)pyrene	ND	250	µg/Kg						
Dibenz(a,h)anthracene	ND	250	µg/Kg						
Indeno(1,2,3-cd)pyrene	ND	250	µg/Kg						
Benzo(g,h,i)perylene	ND	250	µg/Kg						
Surr: 2-Fluorophenol	1948	50	µg/Kg	3750	0	51.9	27	98	0
Surr: Phenol-d5	1963	50	µg/Kg	3750	0	52.3	31	102	0
Surr: Nitrobenzene-d5	1295	50	µg/Kg	2500	0	51.8	33	97	0
Surr: 2-Fluorobiphenyl	1418	50	µg/Kg	2500	0	56.7	42	100	0
Surr: 2,4,6-Tribromophenol	2308	50	µg/Kg	3750	0	61.5	40	117	0
Surr: 4-Terphenyl-d14	1687	50	µg/Kg	2500	0	67.5	44	109	0

Qualifiers:
ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011177-01AMS** Batch ID: **3194** Test Code: **SW8270C** Units: **µg/Kg-dry** Analysis Date **11/20/00 8:58:00 PM** Prep Date **11/17/00**
Client ID: Run ID: **SV-4_001120A** SeqNo: **89652**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	2174	300	µg/Kg-dry	4511	0	48.2	31	90	0			
2-Chlorophenol	2082	300	µg/Kg-dry	4511	0	46.1	40	88	0			
1,4-Dichlorobenzene	1010	300	µg/Kg-dry	3007	0	33.6	32	83	0			
N-Nitrosodi-n-propylamine	1836	300	µg/Kg-dry	3007	0	61	36	94	0			
1,2,4-Trichlorobenzene	1508	300	µg/Kg-dry	3007	0	50.2	36	96	0			
4-Chloro-3-methylphenol	2789	600	µg/Kg-dry	4511	0	61.8	43	102	0			
4-Nitrophenol	3058	600	µg/Kg-dry	4511	0	67.8	34	116	0			
Acenaphthene	1584	300	µg/Kg-dry	3007	0	52.7	36	110	0			
2,4-Dinitrotoluene	1096	300	µg/Kg-dry	3007	0	36.5	29	105	0			
Pentachlorophenol	3106	600	µg/Kg-dry	4511	0	68.9	23	113	0			
Pyrene	4447	300	µg/Kg-dry	3007	3098	44.8	28	125	0			
Surr: 2-Fluorophenol	2053	60	µg/Kg-dry	4511	0	45.5	27	98	0			
Surr: Phenol-d5	2182	60	µg/Kg-dry	4511	0	48.4	31	102	0			
Surr: Nitrobenzene-d5	1428	60	µg/Kg-dry	3007	0	47.5	33	97	0			
Surr: 2-Fluorobiphenyl	1644	60	µg/Kg-dry	3007	0	54.7	42	100	0			
Surr: 2,4,6-Tribromophenol	2637	60	µg/Kg-dry	4511	0	58.5	40	117	0			
Surr: 4-Terphenyl-d14	2043	60	µg/Kg-dry	3007	0	67.9	44	109	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID **0011177-01AMSD** Batch ID: **3194** Test Code: **SW8270C** Units: **µg/Kg-dry** Analysis Date **11/20/00 9:24:00 PM** Prep Date **11/17/00**
Client ID: Run ID: **SV-4_001120A** SeqNo: **89644**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	2313	300	µg/Kg-dry	4461	0	51.8	31	90	0			
2-Chlorophenol	2211	300	µg/Kg-dry	4461	0	49.6	40	88	0			
1,4-Dichlorobenzene	1277	300	µg/Kg-dry	2974	0	42.9	32	83	0			
N-Nitrosodi-n-propylamine	1991	300	µg/Kg-dry	2974	0	67	36	94	0			
1,2,4-Trichlorobenzene	1595	300	µg/Kg-dry	2974	0	53.6	36	96	0			
4-Chloro-3-methylphenol	2583	590	µg/Kg-dry	4461	0	57.9	43	102	0			
4-Nitrophenol	2611	590	µg/Kg-dry	4461	0	58.5	34	116	0			
Acenaphthene	1595	300	µg/Kg-dry	2974	0	53.6	36	110	0			
2,4-Dinitrotoluene	686.4	300	µg/Kg-dry	2974	0	23.1	29	105	0			S
Pentachlorophenol	3296	590	µg/Kg-dry	4461	0	73.9	23	113	0			
Pyrene	4337	300	µg/Kg-dry	2974	3098	41.7	28	125	0			
Surr: 2-Fluorophenol	2140	59	µg/Kg-dry	4461	0	48	27	98	0			
Surr: Phenol-d5	2299	59	µg/Kg-dry	4461	0	51.5	31	102	0			
Surr: Nitrobenzene-d5	1524	59	µg/Kg-dry	2974	0	51.3	33	97	0			
Surr: 2-Fluorobiphenyl	1665	59	µg/Kg-dry	2974	0	56	42	100	0			
Surr: 2,4,6-Tribromophenol	2551	59	µg/Kg-dry	4461	0	57.2	40	117	0			
Surr: 4-Terphenyl-d14	2076	59	µg/Kg-dry	2974	0	69.8	44	109	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-3194** Batch ID: **3194** Test Code: **SW8270C** Units: **µg/Kg** Analysis Date **11/20/00 6:46:00 PM** Prep Date **11/17/00**

Client ID: Run ID: **SV-4_001120A** SeqNo: **89639**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	2306	250	µg/Kg	3750	0	61.5	36	92	0			
2-Chlorophenol	2293	250	µg/Kg	3750	0	61.1	43	93	0			
1,4-Dichlorobenzene	1418	250	µg/Kg	2500	0	56.7	35	88	0			
N-Nitrosodi-n-propylamine	1500	250	µg/Kg	2500	0	60	38	95	0			
1,2,4-Trichlorobenzene	1524	250	µg/Kg	2500	0	61	38	98	0			
4-Chloro-3-methylphenol	2331	500	µg/Kg	3750	0	62.2	48	102	0			
4-Nitrophenol	2634	500	µg/Kg	3750	0	70.2	40	120	0			
Acenaphthene	1494	250	µg/Kg	2500	0	59.7	55	95	0			
2,4-Dinitrotoluene	1545	250	µg/Kg	2500	0	61.8	42	108	0			
Pentachlorophenol	2936	500	µg/Kg	3750	0	78.3	35	105	0			
Pyrene	1596	250	µg/Kg	2500	0	63.8	48	107	0			
Surr: 2-Fluorophenol	2280	50	µg/Kg	3750	0	60.8	27	98	0			
Surr: Phenol-d5	2274	50	µg/Kg	3750	0	60.7	31	102	0			
Surr: Nitrobenzene-d5	1550	50	µg/Kg	2500	0	62	33	97	0			
Surr: 2-Fluorobiphenyl	1592	50	µg/Kg	2500	0	63.7	42	100	0			
Surr: 2,4,6-Tribromophenol	2849	50	µg/Kg	3750	0	76	40	117	0			
Surr: 4-Terphenyl-d14	1869	50	µg/Kg	2500	0	74.7	44	109	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

PESTICIDES-SOIL

SW-846 METHOD 8081

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW6 S-11
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-01A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
beta-BHC	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
delta-BHC	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
gamma-BHC	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
Heptachlor	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
Aldrin	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
Heptachlor epoxide	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
Endosulfan I	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
alpha-Chlordane	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
gamma-Chlordane	ND	0.95		µg/Kg-dry	1	11/21/00 5:12:00 PM
Dieldrin	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
4,4'-DDE	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
Endrin	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
Endosulfan II	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
4,4'-DDD	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
Endrin aldehyde	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
Endrin ketone	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
Endosulfan sulfate	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
4,4'-DDT	ND	1.9		µg/Kg-dry	1	11/21/00 5:12:00 PM
Methoxychlor	ND	9.5		µg/Kg-dry	1	11/21/00 5:12:00 PM
Toxaphene	ND	30		µg/Kg-dry	1	11/21/00 5:12:00 PM
Technical Chlordane	ND	30		µg/Kg-dry	1	11/21/00 5:12:00 PM
Surr: Tetrachloro-m-xylene	51.9	50-150		%REC	1	11/21/00 5:12:00 PM
Surr: Decachlorobiphenyl	61.3	41-154		%REC	1	11/21/00 5:12:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW5 S-10
Lab Order: 0011179
Project: RIAC- TF Green Airport
Collection Date: 11/15/00
Lab ID: 0011179-02A
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
beta-BHC	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
delta-BHC	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
gamma-BHC	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
Heptachlor	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
Aldrin	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
Heptachlor epoxide	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
Endosulfan I	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
alpha-Chlordane	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
gamma-Chlordane	ND	0.91		µg/Kg-dry	1	11/21/00 4:44:00 PM
Dieldrin	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
4,4´-DDE	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
Endrin	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
Endosulfan II	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
4,4´-DDD	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
Endrin aldehyde	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
Endrin ketone	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
Endosulfan sulfate	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
4,4´-DDT	ND	1.8		µg/Kg-dry	1	11/21/00 4:44:00 PM
Methoxychlor	ND	9.1		µg/Kg-dry	1	11/21/00 4:44:00 PM
Toxaphene	ND	28		µg/Kg-dry	1	11/21/00 4:44:00 PM
Technical Chlordane	ND	28		µg/Kg-dry	1	11/21/00 4:44:00 PM
Surr: Tetrachloro-m-xylene	52.6	50-150		%REC	1	11/21/00 4:44:00 PM
Surr: Decachlorobiphenyl	56.5	41-154		%REC	1	11/21/00 4:44:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3186** Batch ID: **3186** Test Code: **SW8081A** Units: **µg/Kg** Analysis Date **11/21/00 2:49:00 PM** Prep Date **11/17/00**
Client ID: Run ID: **GC-TRENT_001121A** SeqNo: **89867**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
alpha-BHC	ND	0.80	µg/Kg									
beta-BHC	ND	0.80	µg/Kg									
delta-BHC	ND	0.80	µg/Kg									
gamma-BHC	ND	0.80	µg/Kg									
Heptachlor	ND	0.80	µg/Kg									
Aldrin	ND	0.80	µg/Kg									
Heptachlor epoxide	ND	0.80	µg/Kg									
Endosulfan I	ND	0.80	µg/Kg									
alpha-Chlordane	ND	0.80	µg/Kg									
gamma-Chlordane	ND	0.80	µg/Kg									
Dieldrin	ND	1.6	µg/Kg									
4,4´-DDE	ND	1.6	µg/Kg									
Endrin	ND	1.6	µg/Kg									
Endosulfan II	ND	1.6	µg/Kg									
4,4´-DDD	ND	1.6	µg/Kg									
Endrin aldehyde	ND	1.6	µg/Kg									
Endrin ketone	ND	1.6	µg/Kg									
Endosulfan sulfate	ND	1.6	µg/Kg									
4,4´-DDT	ND	1.6	µg/Kg									
Methoxychlor	ND	8.0	µg/Kg									
Toxaphene	ND	25	µg/Kg									
Technical Chlordane	ND	25	µg/Kg									
Surr: Tetrachloro-m-xylene	5.87	0	µg/Kg	8	0	73.4	50	150	0			
Surr: Decachlorobiphenyl	6.488	0	µg/Kg	8	0	81.1	41	154	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011179-02AMS** Batch ID: **3186** Test Code: **SW8081A** Units: **µg/Kg-dry** Analysis Date **11/21/00 3:46:00 PM** Prep Date **11/17/00**
Client ID: **MW5 S-10** Run ID: **GC-TRENT_001121A** SeqNo: **89869**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	8.337	0.91	µg/Kg-dry	11.33	0	73.6	31	154	0			
Heptachlor	8.125	0.91	µg/Kg-dry	11.33	0	71.7	38	143	0			
Aldrin	8.498	0.91	µg/Kg-dry	11.33	0	75	43	142	0			
Dieldrin	18.55	1.8	µg/Kg-dry	28.34	0	65.5	43	150	0			
Endrin	29.26	1.8	µg/Kg-dry	28.34	0	103	40	162	0			
4,4´-DDT	19.72	1.8	µg/Kg-dry	28.34	0	69.6	33	156	0			
Surr: Tetrachloro-m-xylene	6.031	0	µg/Kg-dry	9.067	0	66.5	50	150	0			
Surr: Decachlorobiphenyl	6.453	0	µg/Kg-dry	9.067	0	71.2	41	154	0			

Sample ID **0011179-02AMSD** Batch ID: **3186** Test Code: **SW8081A** Units: **µg/Kg-dry** Analysis Date **11/21/00 4:15:00 PM** Prep Date **11/17/00**
Client ID: **MW5 S-10** Run ID: **GC-TRENT_001121A** SeqNo: **89870**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	9.21	0.90	µg/Kg-dry	11.23	0	82	31	154	8.337	9.94	50	
Heptachlor	8.081	0.90	µg/Kg-dry	11.23	0	72	38	143	8.125	0.537	50	
Aldrin	8.263	0.90	µg/Kg-dry	11.23	0	73.6	43	142	8.498	2.81	50	
Dieldrin	20.21	1.8	µg/Kg-dry	28.07	0	72	43	150	18.55	8.57	50	
Endrin	25.15	1.8	µg/Kg-dry	28.07	0	89.6	40	162	29.26	15.1	50	
4,4´-DDT	20.87	1.8	µg/Kg-dry	28.07	0	74.3	33	156	19.72	5.65	50	
Surr: Tetrachloro-m-xylene	6.301	0	µg/Kg-dry	8.984	0	70.1	50	150	0	0	0	
Surr: Decachlorobiphenyl	7.016	0	µg/Kg-dry	8.984	0	78.1	41	154	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-3186** Batch ID: **3186** Test Code: **SW8081A** Units: **µg/Kg** Analysis Date **11/21/00 3:18:00 PM** Prep Date **11/17/00**
Client ID: Run ID: **GC-TRENT_001121A** SeqNo: **89868**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	4.134	0.80	µg/Kg	10	0	41.3	40	141	0			
Heptachlor	4.362	0.80	µg/Kg	10	0	43.6	47	137	0			S
Aldrin	4.608	0.80	µg/Kg	10	0	46.1	45	140	0			
Dieldrin	10.89	1.6	µg/Kg	25	0	43.6	43	150	0			
Endrin	12.35	1.6	µg/Kg	25	0	49.4	43	184	0			
4,4´-DDT	11.01	1.6	µg/Kg	25	0	44	38	153	0			
Surr: Tetrachloro-m-xylene	3.606	0	µg/Kg	8	0	45.1	50	150	0			S
Surr: Decachlorobiphenyl	3.76	0	µg/Kg	8	0	47	41	154	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

CONTINUING CALIBRATION SUMMARY

AMRO Environmental Laboratories Corporation

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

CONTINUING CALIBRATION SUMMARY

Analysis Date: 11/21/00 V6 Analyst: KEM

Instrument ID: [Trent] Dali Elvis (circle one)

COLUMN ID:

	FRONT	**BACK**
	CLP Pesticide 1; 0.32mm	CLP Pesticide 2; 0.32mm

BREAKDOWN (1):

DDT	0.819	DDT	1.03
ENDRIN	4.59	ENDRIN	1.63

INDA

	Response:>15%	Response:>15%
TCX		
ALPHA-BHC		
GAMMA-BHC		
HEPTACHLOR		
ENDOSULFAN I		
DIELDRIN		
ENDRIN		
DDD		
DDT		
METHOXYCHLOR		
DCB		
Ave. %D for all analytes (2):	3.1	2.42

INDB

	Response:>15%	Response:>15%
TCX		
ALDRIN		
BETA-BHC		
DELTA-BHC		
HEPTACHLOR EPOXIDE		
ISODRIN		
GAMMA-CHLORDANE		
ALPHA-CHLORDANE		
DDE		
ENDOSULFAN II		
ENDRIN ALDEHYDE		
ENDOSULFAN SULFATE		
ENDRIN KETONE	-30.1	-17.5
DCB		
Ave. %D for all analytes (2):	6.58	4.81

Notes:
1. 4,4' DDT and Endrin <15%
2. Ave %D = ±15%

AMRO Environmental Laboratories Corporation

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

CONTINUING CALIBRATION SUMMARY

Analysis Date: 11/21/00 V6 Analyst: KEM

Instrument ID: [Trent] Dali Elvis (circle one)

COLUMN ID: **FRONT** CLP Pesticide 1; 0.32mm **BACK** CLP Pesticide 2; 0.32mm

BREAKDOWN (1):

	FRONT		BACK
DDT	0.819	DDT	1.03
ENDRIN	4.59	ENDRIN	1.63

INDA

	FRONT Response:>15%	BACK Response:>15%
TCX		
ALPHA-BHC		
GAMMA-BHC		
HEPTACHLOR		
ENDOSULFAN I		
DIELDRIN		
ENDRIN		
DDD		
DDT		
METHOXYCHLOR		
DCB		
Ave. %D for all analytes (2):	3.1	2.42

INDB

	FRONT Response:>15%	BACK Response:>15%
TCX		
ALDRIN		
BETA-BHC		
DELTA-BHC		
HEPTACHLOR EPOXIDE		
ISODRIN		
GAMMA-CHLORDANE		
ALPHA-CHLORDANE		
DDE		
ENDOSULFAN II		
ENDRIN ALDEHYDE		
ENDOSULFAN SULFATE		
ENDRIN KETONE	-30.1	-17.5
DCB		
Ave. %D for all analytes (2):	6.58	4.81

Notes:
1. 4,4' DDT and Endrin <15%
2. Ave %D = ±15%

PCB-SOIL

SW-846 METHOD 8082

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW6 S-11
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-01A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Aroclor 1221	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Aroclor 1232	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Aroclor 1242	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Aroclor 1248	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Aroclor 1254	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Aroclor 1260	ND	30		µg/Kg-dry	1	11/18/00 10:06:00 PM
Surr: Tetrachloro-m-xylene	99.8	43-117		%REC	1	11/18/00 10:06:00 PM
Surr: Decachlorobiphenyl	125	36-130		%REC	1	11/18/00 10:06:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW5 S-10
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-02A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **RAP**
Aroclor 1016	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Aroclor 1221	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Aroclor 1232	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Aroclor 1242	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Aroclor 1248	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Aroclor 1254	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Aroclor 1260	ND	29		µg/Kg-dry	1	11/18/00 11:25:00 PM
Surr: Tetrachloro-m-xylene	105	43-117		%REC	1	11/18/00 11:25:00 PM
Surr: Decachlorobiphenyl	125	36-130		%REC	1	11/18/00 11:25:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3185** Batch ID: **3185** Test Code: **SW8082** Units: **µg/Kg** Analysis Date **11/18/00 9:13:00 PM** Prep Date **11/17/00**

Client ID: Run ID: **GC-ELVIS_001118A** SeqNo: **89502**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	ND	25	µg/Kg									
Aroclor 1221	ND	25	µg/Kg									
Aroclor 1232	ND	25	µg/Kg									
Aroclor 1242	ND	25	µg/Kg									
Aroclor 1248	ND	25	µg/Kg									
Aroclor 1254	ND	25	µg/Kg									
Aroclor 1260	ND	25	µg/Kg									
Surr: Tetrachloro-m-xylene	6.772	0	µg/Kg	8	0	84.6	43	117	0			
Surr: Decachlorobiphenyl	8.173	0	µg/Kg	8	0	102	36	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011179-01AMS** Batch ID: **3185** Test Code: **SW8082** Units: **µg/Kg-dry** Analysis Date **11/18/00 10:32:00 PM** Prep Date **11/17/00**
Client ID: **MW6 S-11** Run ID: **GC-ELVIS_001118A** SeqNo: **89505**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	476.6	30	µg/Kg-dry	619.6	0	78.7	41	125	0			
Aroclor 1260	504.1	30	µg/Kg-dry	619.6	0	83.3	39	120	0			
Surr: Tetrachloro-m-xylene	8.526	0	µg/Kg-dry	9.913	0	88	43	117	0			
Surr: Decachlorobiphenyl	9.427	0	µg/Kg-dry	9.913	0	97.3	36	130	0			

Sample ID **0011179-01AMSD** Batch ID: **3185** Test Code: **SW8082** Units: **µg/Kg-dry** Analysis Date **11/18/00 10:59:00 PM** Prep Date **11/17/00**
Client ID: **MW6 S-11** Run ID: **GC-ELVIS_001118A** SeqNo: **89506**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	231.2	30	µg/Kg-dry	619.6	0	38.8	41	125	384.6	69.4	50	SR
Aroclor 1260	249.2	30	µg/Kg-dry	619.6	0	41.8	39	120	406.8	67.7	50	R
Surr: Tetrachloro-m-xylene	3.795	0	µg/Kg-dry	9.913	0	39.8	43	117	0	0	0	S
Surr: Decachlorobiphenyl	4.182	0	µg/Kg-dry	9.913	0	43.9	36	130	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID **LCS-3185** Batch ID: **3185** Test Code: **SW8082** Units: **µg/Kg** Analysis Date **11/18/00 9:39:00 PM** Prep Date **11/17/00**

Client ID: Run ID: **GC-ELVIS_001118A** SeqNo: **89503**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	359.8	25	µg/Kg	500	0	72	60	118	0			
Aroclor 1260	398.8	25	µg/Kg	500	0	79.8	61	125	0			
Surr: Tetrachloro-m-xylene	6.555	0	µg/Kg	8	0	81.9	43	117	0			
Surr: Decachlorobiphenyl	7.416	0	µg/Kg	8	0	92.7	36	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

TRACE METALS & WET CHEMISTRY

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW6 S-11
Lab Order: 0011179
Project: RIAC- TF Green Airport
Collection Date: 11/15/00
Lab ID: 0011179-01A
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846 - 3051/6010		**SW6010B**				Analyst: **REB**
Aluminum	5,200	29		mg/Kg-dry	1	11/27/00 5:07:04 PM
Antimony	ND	5.8		mg/Kg-dry	1	11/27/00 5:07:04 PM
Arsenic	ND	7.3		mg/Kg-dry	1	11/27/00 5:07:04 PM
Barium	ND	29		mg/Kg-dry	1	11/27/00 5:07:04 PM
Beryllium	ND	0.73		mg/Kg-dry	1	11/27/00 5:07:04 PM
Cadmium	ND	0.73		mg/Kg-dry	1	11/27/00 5:07:04 PM
Calcium	4,000	360		mg/Kg-dry	1	11/27/00 5:07:04 PM
Chromium	13	1.5		mg/Kg-dry	1	11/27/00 5:07:04 PM
Cobalt	ND	7.3		mg/Kg-dry	1	11/27/00 5:07:04 PM
Copper	7.7	3.6		mg/Kg-dry	1	11/27/00 5:07:04 PM
Iron	9,900	15		mg/Kg-dry	1	11/27/00 5:07:04 PM
Lead	4.8	3.6		mg/Kg-dry	1	11/27/00 5:07:04 PM
Magnesium	1,700	360		mg/Kg-dry	1	11/27/00 5:07:04 PM
Manganese	230	2.2		mg/Kg-dry	1	11/27/00 5:07:04 PM
Nickel	7.1	5.8		mg/Kg-dry	1	11/27/00 5:07:04 PM
Potassium	1,500	360		mg/Kg-dry	1	11/28/00 12:19:06 PM
Selenium	ND	12		mg/Kg-dry	1	11/27/00 5:07:04 PM
Silver	ND	2.0		mg/Kg-dry	1	11/27/00 5:07:04 PM
Sodium	ND	360		mg/Kg-dry	1	11/28/00 12:19:06 PM
Thallium	ND	7.3		mg/Kg-dry	1	11/27/00 5:07:04 PM
Vanadium	13	7.3		mg/Kg-dry	1	11/27/00 5:07:04 PM
Zinc	30	2.9		mg/Kg-dry	1	11/27/00 5:07:04 PM
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		**E418.1**				Analyst: **JA**
Petroleum Hydrocarbons, TR	ND	36		mg/Kg-dry	1	11/24/00
MERCURY, 7471A		**SW7471A**				Analyst: **GM**
Mercury	ND	0.032		mg/Kg-dry	1	11/21/00
PERCENT MOISTURE		**D2216**				Analyst: **CB**
Percent Moisture	19.3	0		wt%	1	11/17/00
TOTAL ORGANIC CARBON, SOIL		**CFAS18**				Analyst: **RK**
Total Organic Carbon	850	700		mg/Kg-dry	1	11/22/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *30-Nov-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW5 S-10
Lab Order:	0011179		
Project:	RIAC- TF Green Airport	**Collection Date:**	11/15/00
Lab ID:	0011179-02A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846 - 3051/6010		**SW6010B**				Analyst: **REB**
Aluminum	2,900	28		mg/Kg-dry	1	11/27/00 5:11:45 PM
Antimony	ND	5.7		mg/Kg-dry	1	11/27/00 5:11:45 PM
Arsenic	ND	7.1		mg/Kg-dry	1	11/27/00 5:11:45 PM
Barium	ND	28		mg/Kg-dry	1	11/27/00 5:11:45 PM
Beryllium	ND	0.71		mg/Kg-dry	1	11/27/00 5:11:45 PM
Cadmium	ND	0.71		mg/Kg-dry	1	11/27/00 5:11:45 PM
Calcium	710	360		mg/Kg-dry	1	11/27/00 5:11:45 PM
Chromium	6.7	1.4		mg/Kg-dry	1	11/27/00 5:11:45 PM
Cobalt	ND	7.1		mg/Kg-dry	1	11/27/00 5:11:45 PM
Copper	9.5	3.6		mg/Kg-dry	1	11/27/00 5:11:45 PM
Iron	8,300	14		mg/Kg-dry	1	11/27/00 5:11:45 PM
Lead	9.7	3.6		mg/Kg-dry	1	11/27/00 5:11:45 PM
Magnesium	1,500	360		mg/Kg-dry	1	11/27/00 5:11:45 PM
Manganese	170	2.1		mg/Kg-dry	1	11/27/00 5:11:45 PM
Nickel	7.4	5.7		mg/Kg-dry	1	11/27/00 5:11:45 PM
Potassium	690	360		mg/Kg-dry	1	11/28/00 12:21:21 PM
Selenium	ND	11		mg/Kg-dry	1	11/27/00 5:11:45 PM
Silver	ND	2.0		mg/Kg-dry	1	11/27/00 5:11:45 PM
Sodium	ND	360		mg/Kg-dry	1	11/28/00 12:21:21 PM
Thallium	ND	7.1		mg/Kg-dry	1	11/27/00 5:11:45 PM
Vanadium	ND	7.1		mg/Kg-dry	1	11/27/00 5:11:45 PM
Zinc	22	2.8		mg/Kg-dry	1	11/27/00 5:11:45 PM
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		**E418.1**				Analyst: **JA**
Petroleum Hydrocarbons, TR	ND	33		mg/Kg-dry	1	11/24/00
MERCURY, 7471A		**SW7471A**				Analyst: **GM**
Mercury	ND	0.029		mg/Kg-dry	1	11/21/00
PERCENT MOISTURE		**D2216**				Analyst: **CB**
Percent Moisture	13.5	0		wt%	1	11/17/00
TOTAL ORGANIC CARBON, SOIL		**CFAS18**				Analyst: **RK**
Total Organic Carbon	2,100	700		mg/Kg-dry	1	11/22/00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3232** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/27/00 4:11:17 PM** Prep Date: **11/24/00**

Client ID: Run ID: **ICP-OPTIMA_001127A** SeqNo: **91369**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	ND	20	mg/Kg									
Antimony	ND	4.0	mg/Kg									
Arsenic	ND	5.0	mg/Kg									
Barium	ND	20	mg/Kg									
Beryllium	ND	0.50	mg/Kg									
Cadmium	ND	0.50	mg/Kg									
Calcium	ND	250	mg/Kg									
Chromium	ND	1.0	mg/Kg									
Cobalt	ND	5.0	mg/Kg									
Copper	ND	2.5	mg/Kg									
Iron	ND	10	mg/Kg									
Lead	ND	2.5	mg/Kg									
Magnesium	ND	250	mg/Kg									
Manganese	ND	1.5	mg/Kg									
Nickel	ND	4.0	mg/Kg									
Selenium	ND	8.0	mg/Kg									
Silver	ND	1.4	mg/Kg									
Thallium	ND	5.0	mg/Kg									
Vanadium	ND	5.0	mg/Kg									
Zinc	ND	2.0	mg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3232** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/28/00 12:03:44 PM** Prep Date: **11/24/00**
Client ID: Run ID: **ICP-OPTIMA_001128A** SeqNo: **91531**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	ND	250	mg/Kg									
Sodium	ND	250	mg/Kg									

Sample ID: **MBLK** Batch ID: **R5992** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/24/00** Prep Date:
Client ID: Run ID: **ING-IR_001124A** SeqNo: **90315**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	ND	25	mg/Kg									

Sample ID: **MB-3188** Batch ID: **3188** Test Code: **SW7471A** Units: **mg/Kg** Analysis Date **11/21/00** Prep Date: **11/20/00**
Client ID: Run ID: **HG-FIMS_001121A** SeqNo: **89634**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	ND	0.025	mg/Kg									

Sample ID: **MB-R5974** Batch ID: **R5974** Test Code: **CFAS18** Units: **mg/Kg** Analysis Date **11/22/00** Prep Date:
Client ID: Run ID: **ING-WET_001122A** SeqNo: **90018**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Organic Carbon	ND	700	mg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0011229-04BMS** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/27/00 4:34:00 PM** Prep Date: **11/24/00**

Client ID: Run ID: **ICP-OPTIMA_001127A** SeqNo: **91374**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	12820	29	mg/Kg-dry	1147	11200	141	75	125	0			S
Antimony	248.3	5.7	mg/Kg-dry	286.7	2.938	85.6	75	125	0			
Arsenic	304.3	7.2	mg/Kg-dry	286.7	17.02	100	75	125	0			
Barium	1388	29	mg/Kg-dry	573.3	1048	59.3	75	125	0			S
Beryllium	111.9	0.72	mg/Kg-dry	114.7	0.512	97.2	75	125	0			
Cadmium	118.1	0.72	mg/Kg-dry	114.7	1.003	102	75	125	0			
Calcium	17860	360	mg/Kg-dry	2867	14040	133	75	125	0			S
Chromium	600.7	1.4	mg/Kg-dry	573.3	26.52	100	75	125	0			
Cobalt	609.5	7.2	mg/Kg-dry	573.3	7.857	105	75	125	0			
Copper	344.8	3.6	mg/Kg-dry	286.7	37.79	107	75	125	0			
Iron	21800	14	mg/Kg-dry	1147	20550	109	75	125	0			
Lead	516.9	3.6	mg/Kg-dry	286.7	224.3	102	75	125	0			
Magnesium	7798	360	mg/Kg-dry	2867	5333	86	75	125	0			
Manganese	838.6	2.1	mg/Kg-dry	573.3	224.3	107	75	125	0			
Nickel	611.8	5.7	mg/Kg-dry	573.3	14.77	104	75	125	0			
Selenium	227.1	11	mg/Kg-dry	229.3	0	99	75	125	0			
Silver	58.41	2.0	mg/Kg-dry	57.33	0	102	75	125	0			
Thallium	191.8	7.2	mg/Kg-dry	229.3	0	83.6	75	125	0			
Vanadium	609.4	7.2	mg/Kg-dry	573.3	35.59	100	75	125	0			
Zinc	1192	2.9	mg/Kg-dry	573.3	762.8	74.8	75	125	0			S

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike Duplicate

Sample ID: **0011229-04BMSD** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/27/00 4:39:12 PM** Prep Date: **11/24/00**

Client ID: Run ID: **ICP-OPTIMA_001127A** SeqNo: **91375**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	11640	28	mg/Kg-dry	1111	11200	39	75	125	12820	9.67	20	S
Antimony	243.6	5.6	mg/Kg-dry	277.8	2.938	86.6	75	125	248.3	1.9	20	
Arsenic	277.4	6.9	mg/Kg-dry	277.8	17.02	93.7	75	125	304.3	9.27	20	
Barium	1627	28	mg/Kg-dry	555.6	1048	104	75	125	1388	15.8	20	
Beryllium	107.8	0.69	mg/Kg-dry	111.1	0.512	96.5	75	125	111.9	3.77	20	
Cadmium	107.2	0.69	mg/Kg-dry	111.1	1.003	95.6	75	125	118.1	9.65	20	
Calcium	22220	350	mg/Kg-dry	2778	14040	294	75	125	17860	21.8	20	SR
Chromium	574.8	1.4	mg/Kg-dry	555.6	26.52	98.7	75	125	600.7	4.4	20	
Cobalt	552.9	6.9	mg/Kg-dry	555.6	7.857	98.1	75	125	609.5	9.74	20	
Copper	316.4	3.5	mg/Kg-dry	277.8	37.79	100	75	125	344.8	8.6	20	
Iron	20240	14	mg/Kg-dry	1111	20550	-27.6	75	125	21800	7.41	20	S
Lead	505.4	3.5	mg/Kg-dry	277.8	224.3	101	75	125	516.9	2.25	20	
Magnesium	7622	350	mg/Kg-dry	2778	5333	82.4	75	125	7798	2.28	20	
Manganese	794.2	2.1	mg/Kg-dry	555.6	224.3	103	75	125	838.6	5.43	20	
Nickel	555.9	5.6	mg/Kg-dry	555.6	14.77	97.4	75	125	611.8	9.58	20	
Selenium	207.4	11	mg/Kg-dry	222.3	0	93.3	75	125	227.1	9.06	20	
Silver	53.11	1.9	mg/Kg-dry	55.56	0	95.6	75	125	58.41	9.5	20	
Thallium	203.2	6.9	mg/Kg-dry	222.3	0	91.4	75	125	191.8	5.79	20	
Vanadium	589.5	6.9	mg/Kg-dry	555.6	35.59	99.7	75	125	609.4	3.32	20	
Zinc	1307	2.8	mg/Kg-dry	555.6	762.8	98	75	125	1192	9.25	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0011229-04BMS** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/28/00 12:12:34 PM** Prep Date: **11/24/00**
Client ID: Run ID: **ICP-OPTIMA_001128A** SeqNo: **91535**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	5419	360	mg/Kg-dry	2867	3187	77.9	75	125	0			
Sodium	3171	360	mg/Kg-dry	2867	206.2	103	75	125	0			

Sample ID: **0011229-04BMSD** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/28/00 12:15:50 PM** Prep Date: **11/24/00**
Client ID: Run ID: **ICP-OPTIMA_001128A** SeqNo: **91536**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	5119	350	mg/Kg-dry	2778	3187	69.5	75	125	5419	5.7	20	S
Sodium	3032	350	mg/Kg-dry	2778	206.2	102	75	125	3171	4.48	20	

Sample ID: **0011179-02AMS** Batch ID: **R5992** Test Code: **E418.1** Units: **mg/Kg-dry** Analysis Date **11/24/00** Prep Date:
Client ID: **MW5 S-10** Run ID: **ING-IR_001124A** SeqNo: **90321**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	354	33	mg/Kg-dry	381.6	0	92.8	80	120	0			

Sample ID: **0011179-02AMSD** Batch ID: **R5992** Test Code: **E418.1** Units: **mg/Kg-dry** Analysis Date **11/24/00** Prep Date:
Client ID: **MW5 S-10** Run ID: **ING-IR_001124A** SeqNo: **90322**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	359.2	33	mg/Kg-dry	376.3	0	95.4	80	120	354	1.47	20	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0011123-01BMS** Batch ID: **3188** Test Code: **SW7471A** Units: **mg/Kg-dry** Analysis Date **11/21/00** Prep Date: **11/20/00**
Client ID: Run ID: **HG-FIMS_001121A** SeqNo: **89621**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	0.639	0.030	mg/Kg-dry	0.5924	0	108	75	125	0			

Sample ID: **0011123-01BMSD** Batch ID: **3188** Test Code: **SW7471A** Units: **mg/Kg-dry** Analysis Date **11/21/00** Prep Date: **11/20/00**
Client ID: Run ID: **HG-FIMS_001121A** SeqNo: **89622**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	0.6582	0.031	mg/Kg-dry	0.6261	0	105	75	125	0.639	2.95	20	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-3232** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/27/00 4:14:41 PM** Prep Date: **11/24/00**

Client ID: Run ID: **ICP-OPTIMA_001127A** SeqNo: **91370**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	773	20	mg/Kg	800	0	96.6	80	120	0			
Antimony	186.9	4.0	mg/Kg	200	0	93.5	80	120	0			
Arsenic	193.8	5.0	mg/Kg	200	0	96.9	80	120	0			
Barium	414.7	20	mg/Kg	400	0	104	80	120	0			
Beryllium	78.77	0.50	mg/Kg	80	0	98.5	80	120	0			
Cadmium	80.34	0.50	mg/Kg	80	0	100	80	120	0			
Calcium	1889	250	mg/Kg	2000	0	94.5	80	120	0			
Chromium	418.7	1.0	mg/Kg	400	0	105	80	120	0			
Cobalt	412	5.0	mg/Kg	400	0	103	80	120	0			
Copper	196.3	2.5	mg/Kg	200	0	98.2	80	120	0			
Iron	815.3	10	mg/Kg	800	0	102	80	120	0			
Lead	205.3	2.5	mg/Kg	200	0	103	80	120	0			
Magnesium	1990	250	mg/Kg	2000	0	99.5	80	120	0			
Manganese	417.5	1.5	mg/Kg	400	0	104	80	120	0			
Nickel	410.1	4.0	mg/Kg	400	0	103	80	120	0			
Selenium	150.8	8.0	mg/Kg	160	0	94.3	80	120	0			
Silver	38.88	1.4	mg/Kg	40	0	97.2	80	120	0			
Thallium	157	5.0	mg/Kg	160	0	98.1	80	120	0			
Vanadium	417.6	5.0	mg/Kg	400	0	104	80	120	0			
Zinc	400.5	2.0	mg/Kg	400	0	100	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-3232** Batch ID: **3232** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/28/00 12:05:54 PM** Prep Date: **11/24/00**
Client ID: Run ID: **ICP-OPTIMA_001128A** SeqNo: **91532**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	2000	250	mg/Kg	2000	0	100	80	120	0			
Sodium	2015	250	mg/Kg	2000	0	101	80	120	0			

Sample ID: **LCS** Batch ID: **R5992** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/24/00** Prep Date:
Client ID: Run ID: **ING-IR_001124A** SeqNo: **90316**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	281.7	25	mg/Kg	267.6	0	105	80	120	0			

Sample ID: **LCS-3188** Batch ID: **3188** Test Code: **SW7471A** Units: **mg/Kg** Analysis Date **11/21/00** Prep Date: **11/20/00**
Client ID: Run ID: **HG-FIMS_001121A** SeqNo: **89633**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	0.5336	0.025	mg/Kg	0.5	0	107	80	120	0			

Sample ID: **LCS-R5974** Batch ID: **R5974** Test Code: **CFAS18** Units: **mg/Kg** Analysis Date **11/22/00** Prep Date:
Client ID: Run ID: **ING-WET_001122A** SeqNo: **90019**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Organic Carbon	4816	700	mg/Kg	4750	0	101	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011179
Project: RIAC- TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **lcs_dup** Batch ID: **R5974** Test Code: **CFAS18** Units: **mg/Kg** Analysis Date **11/22/00** Prep Date:

Client ID: Run ID: **ING-WET_001122A** SeqNo: **90020**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Organic Carbon	5257	700	mg/Kg	4750	0	111	80	120	4816	8.76	20	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

CHAIN-OF-CUSTODY

AMRO Env' mental Laboratories Corporation
111 Herrick Stre.
Merrimack, N.H. 03054
Office: 603-424-2022 Fax: 603-429-8496

32649

CHAIN OF CUSTODY RECORD

Proj. No.	Project Name	Project State
	RIAC - TF GREEN AIRPORT	

Samplers (Signature)

PAGE____ OF_____

Sta. No.	Date	Time	Comp	Grab	Station Location	Type Size, & No. of Containers	MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain	TPH (EPA 418.1)	VOC's (EPA 8260)	SVOC's (EPA 8270)	RCRA's (EPA 6010)	TCLP TAL (EPA 7000/7000 series)	Remarks
	11/15/00	11:50	X		MW6 S-11	2-VIALS			X				
	11/15/00	11:55	X		MW6 S-11	1-16OZ		X		X	X	X	X
	11/15/00	11:45	X		MW5 S-10	1-16OZ		X		X	X	X	X
	11/15/00	11:40	X		MW5 S-10	2-VIALS			X				

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded **T.A.T. AUTHORIZATION NUMBER.**

AUTHORIZATION NO._____**T.A.T. authorized by:**_____

Relinquished by (Signature)	Date Time	Received by (Signature)
	11/15/00 6PM	
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time 11/16/00	Received for Laboratory by: (Signature)

☐ Fax to (phone)

Results needed

PO#

AMRO Project No. 11179

Seal Intact? Yes No N/A

Send Results to:
MATI MONTCH / CDM
90 HAMPSHIRE ST
ONE CAMBRIDGE PLACE
CAMBRIDGE, MA 02139

Remarks

White: Lab copy Yellow: Accompanies report Pink: Client copy

SAMPLE RECEIPT CHECKLIST

AMRO Environmental Laboratories Corporation

SAMPLE RECEIPT CHECKLIST

111 Herrick Street
Merrimack, NH 03054
(603) 424-2022

Client: CDM
Project Name: RIAL - TF GREEN AIRPORT
Ship via: (circle one) Fed Ex., UPS, AMRO Courier,
Hand Del., Other Courier, Other:

AMRO ID: 001179
Date Rec.: 11-16-00
Date Due: 11-30-00

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Army Samples received in individual plastic bags?			✓	
2. Custody Seals present?			✓	
3. Custody Seals Intact?			✓	
4. Air Bill included in folder if received?			✓	
5. Is COC included with samples?	✓			
6. Is COC signed and dated by client?	✓			
7. Laboratory receipt temperature. TEMP = 10				
Samples rec. with ice ✓ ice packs ___ neither ___				
8. Were samples received the same day they were sampled?		✓		
Is client temperature 4°C ± 2°C?	~~✓~~ CB ✓			
If no obtain authorization from the client for the analyses.				
Client authorization from: Date: Obtained by:				
9. Is the COC filled out correctly and completely?	✓			
10. Does the info on the COC match the samples?	✓			
11. Were samples rec. within holding time?	✓			
12. Were all samples properly labeled?	✓			
13. Were all samples properly preserved?	✓			
14. Were proper sample containers used?	✓			
15. Were all samples received intact? (none broken or leaking)	✓			
16. Were VOA vials rec. with no air bubbles?			✓	
17. Were the sample volumes sufficient for requested analysis?	✓			
18. Were all samples received?	✓			
19. VPH and VOA Soils only:				
Sampling Method VPH (circle one): ~~M=Methanol~~, E=EnCore (air-tight container)				
Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk				
If M or SB:				
Does preservative cover the soil?	✓			
If NO then client must be faxed.				
Does preservation level come close to the fill line on the vial?	✓			
If NO then client must be faxed.				
Were vials provided by AMRO?	✓			
If NO then weights MUST be obtained from client				
Was dry weight aliquot provided?			✓	
If NO then fax client and inform the VOA lab ASAP.				
20. Subcontracted Samples:			✓	
What samples sent:				
Where sent:				
Date:				
Analysis:				
TAT:				
21. Information entered into:				
Internal Tracking Log?	✓			
Dry Weight Log?	✓			
Client Log?	✓			
Composite Log?			✓	
Filtration Log?			✓	

Received By: ~~CB~~ ST Date: 11-16-00 Logged in By: CB Date: 11-17-00
Labeled By: CB Date: 11-17-00 Checked By: Date:

NA= Not Applicable

STATE CERTIFICATE

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

D E P A R T M E N T O F H E A L T H

Safe and Healthy Lives in Safe and Healthy Communities

April 24, 2000

APR 2 8 2000

Dear Laboratory Director:

Retain this letter for your records.

This letter is to inform you that there has been legislative changes made in the laboratory licensure renewal cycle. The laboratory license expiration date has been changed to December 30, of the appropriate year.

Therefore, your current license will remain in effect until December 30, 2000.

You will receive a new license renewal form approximately 8 weeks before your license is due to expire.

If you have any questions regarding the new license renewal format, please call me at (401) 222-1999.

Sincerely,

Ewa King

Ewa King, Ph.D.
Certification Officer

CHAPIN BUILDING LABORATORIES (401) 222-5600
50 Orms Street, Providence, RI 02904-2283
Fax: (401) 222-6985 - Hearing/Speech Impaired, Call 1-800-745-5555 (TTY)
Web Site: www.health.state.ri.us

CASE NARRATIVE

CASE NARRATIVE
0011179

GENERAL

1. The samples were received in the laboratory at 1°C outside the recommended temperature of 4°C ± 2°C.

2. No other QC deviations were observed.

GC/MS-VOLATILES

1. The method blank-11/17/00 contained sec-Butylbenzene at 14 µg/Kg below the reporting limit of 25 µg/Kg and Carbon disulfide at 30 µg/Kg below the reporting limit of 50 µg/Kg.

2. No other QC deviations were observed.

GC/MS-SEMIVOLATILES

1. The batch Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample 0011177-01A. All %R's and %RPD's were within laboratory control limits with the following exception:

    1.1 The spike compound 2,4-Dinitrotoluene recovered below the laboratory limits (29-105%) at 23.1% in the MS.

2. No other QC deviations were observed.

GC-ECD-PESTICIDES

1. The Endrin Ketone %difference (%D) in the opening Continuing Calibration Verification analyzed on 11/21/00 exceeded the ±15% limit. The laboratory used the average percent difference for all analytes as per SW-846 Method 8081A Section 7.5. Please refer to the Continuing Calibration Summary Form in the Pesticide Section.

2. The closing continuing calibration verification standard (CCV) analyzed on 11/21/00 had the compound Endrin Ketone outside the acceptance criteria (±15%).

3. The laboratory control sample LCS-3186 had all %R's with in laboratory control limits with the following exceptions:

   3.1 The spike compound Heptachlor recovered below the laboratory control limits (47-137%) at 43.6%.

   3.2 The surrogate Tetrachloro-m-xylene recovered below the laboratory control limits (50-150%) at 45.1%.

4. No other QC deviations were observed.

GC/ECD-PCB

1. The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) were performed on sample MW6 S-11 (0011179-01A). All %R's and %RPD's were with in laboratory control limits with the following exceptions:

   1.1 The spike compound Aroclor 1016 recovered below the laboratory control limits (41-125%) in the MSD at 38.8%.

1. The surrogate Tetrachloro-m-xylene recovered below the laboratory limits (43-117%) in the MSD at 39.8%.

2. The %RPD's for Aroclor 1016 and 1260 were above the laboratory control limit of 50%.

2. No other QC deviations were observed.

METALS – SOIL

3. Batch QC sample (0011229-04B) had Matrix Spike (MS) recoveries outside the acceptance limits for Aluminum, Barium, Calcium and Zinc and Matrix Spike Duplicate (MSD) recoveries outside the acceptance limits for Aluminum, Calcium, Iron and Potassium as well as %RPD – outside the acceptance limits for Calcium. These failures were possibly due to high concentration of Aluminum, Calcium and Iron in sample relative to spike concentration and sample non-homogeneity.

4. Laboratory Control Sample (LCS) recoveries for all analytes were within acceptance limits.

5. No other QC deviations were observed.

WET CHEMISTRY

1. No QC deviations were observed.

AMRO Environmental Laboratories Corporation

111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 · FAX: (603) 429-8496

December 07, 2000

Matt Dentch
Camp Dresser and McKee
1 Cambridge Place
50 Hampshire Street
Cambridge, MA 02139
TEL: (617) 452-6326
FAX (617) 452-8000

RE: 26553 RIAC TF Green Airport

Order No.: 0011255

Dear Matt Dentch:

AMRO Environmental Laboratories Corp. received 4 samples on 11/22/00 for the analyses presented in the following report.

The enclosed results are additional analyses requested after the original report was issued. AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

WORK ORDER SAMPLE SUMMARY

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Project: 26553 RIAC TF Green Airport
Lab Order: 0011255
Date Received: 11/22/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0011255-01A	MW1 S-5	11/21/00
0011255-01B	MW1 S-5	11/21/00
0011255-02A	MW3 S-15	11/21/00
0011255-02B	MW3 S-15	11/21/00
0011255-03A	MW8 S-10	11/21/00
0011255-03B	MW8 S-10	11/21/00
0011255-04A	Trip Blank	11/21/00

AMRO Environmental Laboratories Corp.

05-Dec-00

Lab Order: 0011255
Client: Camp Dresser and McKee
Project: 26553 RIAC TF Green Airport

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011255-01A	MW1 S-5	11/21/00	Soil	ICP METALS, 3051/6010		11/28/00	11/29/00
				ICP METALS, 3051/6010		11/28/00	11/30/00
				ICP METALS, 3051/6010		11/28/00	11/29/00
				MERCURY, Soil		11/27/00	11/28/00
				ORGANOCHLORINE PESTICIDES		11/27/00	11/29/00
				PCBS IN SOIL/SOLIDS		11/27/00	11/30/00
				Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/28/00	11/29/00
				TOC, Soil			11/29/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011255-01B				VOLATILES by GC/MS, Medium-Level		11/21/00	11/28/00
0011255-02A	MW3 S-15			ICP METALS, 3051/6010		11/28/00	11/29/00
				ICP METALS, 3051/6010		11/28/00	11/29/00
				ICP METALS, 3051/6010		11/28/00	11/30/00
				MERCURY, Soil		11/27/00	11/28/00
				ORGANOCHLORINE PESTICIDES		11/27/00	11/29/00
				PCBS IN SOIL/SOLIDS		11/27/00	11/30/00
				Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/28/00	11/30/00
				TOC, Soil			11/29/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011255-02B				VOLATILES by GC/MS, Medium-Level		11/21/00	11/28/00
0011255-03A	MW8 S-10			ICP METALS, 3051/6010		11/28/00	11/29/00
				ICP METALS, 3051/6010		11/28/00	11/29/00
				ICP METALS, 3051/6010		11/28/00	11/30/00
				MERCURY, Soil		11/27/00	11/28/00
				ORGANOCHLORINE PESTICIDES		11/27/00	11/29/00
				PCBS IN SOIL/SOLIDS		11/27/00	11/30/00

Lab Order: 0011255
Client: Camp Dresser and McKee
Project: 26553 RIAC TF Green Airport

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011255-03A	MW8 S-10	11/21/00	Soil	Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/28/00	11/30/00
				TOC, Soil			11/29/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011255-03B				VOLATILES by GC/MS, Medium-Level		11/21/00	11/28/00
0011255-04A	Trip Blank			VOLATILES by GC/MS, Medium-Level		11/21/00	11/28/00

CHAIN-OF-CUSTODY

AMRO Environmental Laboratories Corporation
111 Herrick Street
Merrimack, N.H. 03054
Office: 603-424-2022 Fax: 603-429-8496

32650

CHAIN OF CUSTODY RECORD

Proj. No.	Project Name	Project State
26553	RIAC - TF GREEN AIRPORT	RI

Samplers (Signature)

PAGE____ OF_____

Sta. No.	Date	Time	Comp	Grab	Station Location	Type Size, & No. of Containers	MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain	TPH (EPA 418.1)	VOC's (EPA 8260)	SVOC's (EPA 8270)	PESTICIDES (EPA 8081)	PCB's (EPA 8082)	TOC ; TAL (EPA 200/6000/7000 series)	Remarks
	11/21/00	12PM	X		MW1 S-5	2 VIALS			X					
		1PM	X		MW3 S-15	2 VIALS			X					
		12PM	X		MW8 S-10	2 VIALS			X					
		12PM	X		MW1 S-5	1 160Z		X		X	X	X	X	
		1PM	X		MW3 S-15	1 160Z		X		X	X	X	X	
	↓	12PM	X		MW8 S-10	1 160Z		X		X	X	X	X	
					TRIP BLANK				X					

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded **T.A.T. AUTHORIZATION NUMBER.**

AUTHORIZATION NO._____ **T.A.T. authorized by:**_____

Relinquished by (Signature)	Date Time	Received by (Signature)
[signature]	11/22/00 12PM	[signature]
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time 1630 11/22/00	Received for Laboratory by: (Signature) Constance Brady

☐ Fax to (phone)

Results needed

PO#

AMRO Project No. 0011255

Seal Intact? Yes No N/A

Send Results to:
MATT DENTCH / CDM
50 HAMPSHIRE STREET
ONE CAMBRIDGE PLACE
CAMBRIDGE, MA 02139

Remarks

White: Lab copy Yellow: Accompanies report Pink: Client copy

SAMPLE RECEIPT CHECKLIST

AMRO Environmental Laboratories Corporation

SAMPLE RECEIPT CHECKLIST

111 Herrick Street
Merrimack, NH 03054
~~(603) 424-2022~~

Client: CDM
Project Name: TF Green Airport RIAC
Ship via: (circle one) Fed Ex.. UPS . ~~AMRO Courier~~
Hand Del.. Other Courier.. Other:

AMRO ID: 11255
Date Rec.: 11/22
Date Due: 12/5/00

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Army Samples received in individual plastic bags?			x	
2. Custody Seals present?		x		
3. Custody Seals Intact?			x	
4. Air Bill included in folder if received?			x	
5. Is COC included with samples?	x			
6. Is COC signed and dated by client?	x			
7. Laboratory receipt temperature. TEMP = 16.3				
Samples rec. with ice x ice packs ___ neither ___				
8. Were samples received the same day they were sampled?		x		
Is client temperature 4°C ± 2°C?	x			
If no obtain authorization from the client for the analyses.				
Client authorization from: Date: Obtained by:				
9. Is the COC filled out correctly and completely?	x			
10. Does the info on the COC match the samples?	x			
11. Were samples rec. within holding time?	x			
12. Were all samples properly labeled?	x			
13. Were all samples properly preserved?	x			
14. Were proper sample containers used?	x			
15. Were all samples received intact? (none broken or leaking)	x			
16. Were VOA vials rec. with no air bubbles?			x	
17. Were the sample volumes sufficient for requested analysis?	x			
18. Were all samples received?	x			
19. VPH and VOA Soils only:				
Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)				
Sampling Method VOA (circle one): M=~~Methanol~~. SB=Sodium Bisulfate. E=EnCore. B=Bulk				
If M or SB:				
Does preservative cover the soil?	x			
If NO then client must be faxed.				
Does preservation level come close to the fill line on the vial?	x			
If NO then client must be faxed.				
Were vials provided by AMRO?	x			
If NO then weights MUST be obtained from client				
Was dry weight aliquot provided?	x			
If NO then fax client and inform the VOA lab ASAP.				
20. Subcontracted Samples:			x	
What samples sent:				
Where sent:				
Date:				
Analysis:				
TAT:				
21. Information entered into:				
Internal Tracking Log?	x			
Dry Weight Log?	x			
Client Log?	x			
Composite Log?			x	
Filtration Log?			x	

Received By: CS Date: 11/22 Logged in By: SI Date: 11/24
Labeled By: SI Date: 11/24 Checked By: Date:

NA= Not Applicable

STATE CERTIFICATE

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

D E P A R T M E N T O F H E A L T H

Safe and Healthy Lives in Safe and Healthy Communities

April 24, 2000

APR 28 2000

Dear Laboratory Director:

Retain this letter for your records.

This letter is to inform you that there has been legislative changes made in the laboratory licensure renewal cycle. The laboratory license expiration date has been changed to December 30, of the appropriate year.

Therefore, your current license will remain in effect until December 30, 2000.

You will receive a new license renewal form approximately 8 weeks before your license is due to expire.

If you have any questions regarding the new license renewal format, please call me at (401) 222-1999.

Sincerely,

Ewa King

Ewa King, Ph.D.
Certification Officer

CHAPIN BUILDING LABORATORIES (401) 222-5600
50 Orms Street, Providence, RI 02904-2283
Fax: (401) 222-6985 - Hearing/Speech Impaired, Call 1-800-745-5555 (TTY)
Web Site: www.health.state.ri.us

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

D E P A R T M E N T O F H E A L T H

Safe and Healthy Lives in Safe and Healthy Communities

24 June 1998

Ms. Nancy Stewart
AMRO Environmental Lab Corp.
111 Merrick St.
Merrimack, NH 03054

RE: **License Number 105**

Dear Ms. Stewart:

This is to acknowledge acceptance of the Analytical Laboratory License Renewal Application for the period of July 1, 1998 until June 30, 2000.

In accordance with the provisions of Chapter 23-16.2-A/LAB of the Rhode Island General Laws 1956, as amended, the Rhode Island Department of Health hereby issues this license renewal for the period as specified above, authorizing the operation and maintenance of this facility known as **AMRO Environmental Lab Corp.**

This license covers the premise located at:

111 Merrick St.
Merrimack, New Hampshire 03054

Sincerely,

Wayne I. Farrington
Chief
Division of Facilities Regulation
(401) 222-2566

lg
Enclosure
wp.ltr/anl.lic.renew

CASE NARRATIVE

CASE NARRATIVE
0011255

GENERAL

1. No QC deviations were observed.

GC/MS-VOLATILES
SOIL

1. No QC deviations were observed.

GC/MS-SEMIVOLATILES
SOIL

1. Sample MW3 S-15 (0011255-02A) had all surrogate recoveries outside the laboratory control limits possibly due to an error in spiking the sample surrogates. None of the target analytes were detected.

2. No other QC deviations were observed.

GC/ECD-PESTICIDES
SOIL

1. No QC deviations were observed.

GC/ECD-PCB
SOIL

1. No QC deviations were observed.

METALS – SOIL

1. Batch QC sample (0011266-01C) had Matrix Spike (MS) recoveries outside the acceptance limits for Aluminum, Copper, Iron, Lead and Zinc and Matrix Spike Duplicate (MSD) recoveries outside the acceptance limits for Aluminum, Barium, Iron, Lead and Zinc as well as %RPD – outside the acceptance limits for Iron and Zinc. These failures were possibly due to high concentration of Aluminum, Iron and Zinc in sample relative to spike concentration and sample non-homogeneity.

2. Batch QC sample (0011229-04B) had Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries outside the acceptance limits for Mercury possibly due to the sample matrix interference.

3. Laboratory Control Sample (LCS) recoveries for all analytes were within acceptance limits.

4. No other QC deviations were observed.

WET CHEMISTRY

1. No QC deviations were observed.

GC/MS VOLATILES- SOIL

SW-846 METHOD 8260B

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW1 S-5
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-01B	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: **LN**
Dichlorodifluoromethane	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Chloromethane	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Vinyl chloride	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Chloroethane	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Bromomethane	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Trichlorofluoromethane	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Acetone	ND	310		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1-Dichloroethene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Carbon disulfide	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Methylene chloride	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
Methyl tert-butyl ether	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
trans-1,2-Dichloroethene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1-Dichloroethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
2-Butanone	ND	310		µg/Kg-dry	1	11/28/00 3:25:00 PM
2,2-Dichloropropane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
cis-1,2-Dichloroethene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Chloroform	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Bromochloromethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1,1-Trichloroethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1-Dichloropropene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Carbon tetrachloride	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2-Dichloroethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Benzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Trichloroethene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2-Dichloropropane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Bromodichloromethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Dibromomethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
4-Methyl-2-pentanone	ND	310		µg/Kg-dry	1	11/28/00 3:25:00 PM
cis-1,3-Dichloropropene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Toluene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
trans-1,3-Dichloropropene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1,2-Trichloroethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2-Dibromoethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
2-Hexanone	ND	310		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,3-Dichloropropane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Tetrachloroethene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Dibromochloromethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Chlorobenzene	90	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1,1,2-Tetrachloroethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW1 S-5
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-01B	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
m,p-Xylene	37	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
o-Xylene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Styrene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Bromoform	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Isopropylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,1,2,2-Tetrachloroethane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2,3-Trichloropropane	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Bromobenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
n-Propylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
2-Chlorotoluene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
4-Chlorotoluene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,3,5-Trimethylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
tert-Butylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2,4-Trimethylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
sec-Butylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
4-Isopropyltoluene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,3-Dichlorobenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,4-Dichlorobenzene	65	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
n-Butylbenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2-Dichlorobenzene	130	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2-Dibromo-3-chloropropane	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2,4-Trichlorobenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Hexachlorobutadiene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Naphthalene	ND	63		µg/Kg-dry	1	11/28/00 3:25:00 PM
1,2,3-Trichlorobenzene	ND	31		µg/Kg-dry	1	11/28/00 3:25:00 PM
Surr: Dibromofluoromethane	86.2	66-121		%REC	1	11/28/00 3:25:00 PM
Surr: 1,2-Dichloroethane-d4	91.4	64-125		%REC	1	11/28/00 3:25:00 PM
Surr: Toluene-d8	93.9	67-124		%REC	1	11/28/00 3:25:00 PM
Surr: 4-Bromofluorobenzene	91.5	62-119		%REC	1	11/28/00 3:25:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-02B

Client Sample ID: MW3 S-15
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE SW8260B						Analyst: **LN**
Dichlorodifluoromethane	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Chloromethane	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Vinyl chloride	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Chloroethane	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Bromomethane	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Trichlorofluoromethane	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Acetone	ND	330		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1-Dichloroethene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Carbon disulfide	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Methylene chloride	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
Methyl tert-butyl ether	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
trans-1,2-Dichloroethene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1-Dichloroethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
2-Butanone	ND	330		µg/Kg-dry	1	11/28/00 4:01:00 PM
2,2-Dichloropropane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
cis-1,2-Dichloroethene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Chloroform	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Bromochloromethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1,1-Trichloroethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1-Dichloropropene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Carbon tetrachloride	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2-Dichloroethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Benzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Trichloroethene	39	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2-Dichloropropane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Bromodichloromethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Dibromomethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
4-Methyl-2-pentanone	ND	330		µg/Kg-dry	1	11/28/00 4:01:00 PM
cis-1,3-Dichloropropene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Toluene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
trans-1,3-Dichloropropene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1,2-Trichloroethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2-Dibromoethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
2-Hexanone	ND	330		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,3-Dichloropropane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Tetrachloroethene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Dibromochloromethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Chlorobenzene	55	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1,1,2-Tetrachloroethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-02B

Client Sample ID: MW3 S-15
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	82	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
m,p-Xylene	290	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
o-Xylene	44	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Styrene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Bromoform	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Isopropylbenzene	46	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,1,2,2-Tetrachloroethane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2,3-Trichloropropane	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Bromobenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
n-Propylbenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
2-Chlorotoluene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
4-Chlorotoluene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,3,5-Trimethylbenzene	36	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
tert-Butylbenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2,4-Trimethylbenzene	130	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
sec-Butylbenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
4-Isopropyltoluene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,3-Dichlorobenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,4-Dichlorobenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
n-Butylbenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2-Dichlorobenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2-Dibromo-3-chloropropane	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2,4-Trichlorobenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Hexachlorobutadiene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Naphthalene	ND	65		µg/Kg-dry	1	11/28/00 4:01:00 PM
1,2,3-Trichlorobenzene	ND	33		µg/Kg-dry	1	11/28/00 4:01:00 PM
Surr: Dibromofluoromethane	87.3	66-121		%REC	1	11/28/00 4:01:00 PM
Surr: 1,2-Dichloroethane-d4	91.9	64-125		%REC	1	11/28/00 4:01:00 PM
Surr: Toluene-d8	94.7	67-124		%REC	1	11/28/00 4:01:00 PM
Surr: 4-Bromofluorobenzene	90.2	62-119		%REC	1	11/28/00 4:01:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW8 S-10
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-03B	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE SW8260B						Analyst: **LN**
Dichlorodifluoromethane	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Chloromethane	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Vinyl chloride	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Chloroethane	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Bromomethane	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Trichlorofluoromethane	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Acetone	ND	320		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1-Dichloroethene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Carbon disulfide	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Methylene chloride	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
Methyl tert-butyl ether	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
trans-1,2-Dichloroethene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1-Dichloroethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
2-Butanone	ND	320		µg/Kg-dry	1	11/28/00 4:37:00 PM
2,2-Dichloropropane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
cis-1,2-Dichloroethene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Chloroform	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Bromochloromethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1,1-Trichloroethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1-Dichloropropene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Carbon tetrachloride	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2-Dichloroethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Benzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Trichloroethene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2-Dichloropropane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Bromodichloromethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Dibromomethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
4-Methyl-2-pentanone	ND	320		µg/Kg-dry	1	11/28/00 4:37:00 PM
cis-1,3-Dichloropropene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Toluene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
trans-1,3-Dichloropropene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1,2-Trichloroethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2-Dibromoethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
2-Hexanone	ND	320		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,3-Dichloropropane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Tetrachloroethene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Dibromochloromethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Chlorobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1,1,2-Tetrachloroethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW8 S-10
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Collection Date: 11/21/00
Lab ID: 0011255-03B
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
m,p-Xylene	35	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
o-Xylene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Styrene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Bromoform	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Isopropylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,1,2,2-Tetrachloroethane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2,3-Trichloropropane	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Bromobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
n-Propylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
2-Chlorotoluene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
4-Chlorotoluene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,3,5-Trimethylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
tert-Butylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2,4-Trimethylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
sec-Butylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
4-Isopropyltoluene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,3-Dichlorobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,4-Dichlorobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
n-Butylbenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2-Dichlorobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2-Dibromo-3-chloropropane	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2,4-Trichlorobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Hexachlorobutadiene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Naphthalene	ND	63		µg/Kg-dry	1	11/28/00 4:37:00 PM
1,2,3-Trichlorobenzene	ND	32		µg/Kg-dry	1	11/28/00 4:37:00 PM
Surr: Dibromofluoromethane	87.6	66-121		%REC	1	11/28/00 4:37:00 PM
Surr: 1,2-Dichloroethane-d4	94.4	64-125		%REC	1	11/28/00 4:37:00 PM
Surr: Toluene-d8	96.7	67-124		%REC	1	11/28/00 4:37:00 PM
Surr: 4-Bromofluorobenzene	90.6	62-119		%REC	1	11/28/00 4:37:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	Trip Blank
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-04A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: **LN**
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Chloromethane	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Chloroethane	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Bromomethane	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Acetone	ND	250		µg/Kg	1	11/28/00 2:49:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
2-Butanone	ND	250		µg/Kg	1	11/28/00 2:49:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Chloroform	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Benzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/28/00 2:49:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Toluene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/28/00 2:49:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-04A

Client Sample ID: Trip Blank
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
o-Xylene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Styrene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Bromoform	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Naphthalene	ND	50		µg/Kg	1	11/28/00 2:49:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	11/28/00 2:49:00 PM
Surr: Dibromofluoromethane	95.9	66-121		%REC	1	11/28/00 2:49:00 PM
Surr: 1,2-Dichloroethane-d4	102	64-125		%REC	1	11/28/00 2:49:00 PM
Surr: Toluene-d8	105	67-124		%REC	1	11/28/00 2:49:00 PM
Surr: 4-Bromofluorobenzene	101	62-119		%REC	1	11/28/00 2:49:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MBLK-11/28/00** Batch ID: **R6070** Test Code: **SW8260B** Units: **µg/Kg** Analysis Date **11/28/00 2:13:00 PM** Prep Date **11/28/00**

Client ID: Run ID: **V-1_001128A** SeqNo: **91951**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Dichlorodifluoromethane	ND	50	µg/Kg									
Chloromethane	ND	50	µg/Kg									
Vinyl chloride	ND	25	µg/Kg									
Chloroethane	ND	50	µg/Kg									
Bromomethane	ND	50	µg/Kg									
Trichlorofluoromethane	ND	50	µg/Kg									
Acetone	ND	250	µg/Kg									
1,1-Dichloroethene	ND	25	µg/Kg									
Carbon disulfide	ND	50	µg/Kg									
Methylene chloride	ND	50	µg/Kg									
Methyl tert-butyl ether	ND	25	µg/Kg									
trans-1,2-Dichloroethene	ND	25	µg/Kg									
1,1-Dichloroethane	ND	25	µg/Kg									
2-Butanone	ND	250	µg/Kg									
2,2-Dichloropropane	ND	25	µg/Kg									
cis-1,2-Dichloroethene	ND	25	µg/Kg									
Chloroform	ND	25	µg/Kg									
Bromochloromethane	ND	25	µg/Kg									
1,1,1-Trichloroethane	ND	25	µg/Kg									
1,1-Dichloropropene	ND	25	µg/Kg									
Carbon tetrachloride	ND	25	µg/Kg									
1,2-Dichloroethane	ND	25	µg/Kg									
Benzene	ND	25	µg/Kg									
Trichloroethene	ND	25	µg/Kg									
1,2-Dichloropropane	ND	25	µg/Kg									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Method Blank

Bromodichloromethane	ND	25	µg/Kg
Dibromomethane	ND	25	µg/Kg
4-Methyl-2-pentanone	ND	250	µg/Kg
cis-1,3-Dichloropropene	ND	25	µg/Kg
Toluene	ND	25	µg/Kg
trans-1,3-Dichloropropene	ND	25	µg/Kg
1,1,2-Trichloroethane	ND	25	µg/Kg
1,2-Dibromoethane	ND	25	µg/Kg
2-Hexanone	ND	250	µg/Kg
1,3-Dichloropropane	ND	25	µg/Kg
Tetrachloroethene	ND	25	µg/Kg
Dibromochloromethane	ND	25	µg/Kg
Chlorobenzene	ND	25	µg/Kg
1,1,1,2-Tetrachloroethane	ND	25	µg/Kg
Ethylbenzene	ND	25	µg/Kg
m,p-Xylene	ND	25	µg/Kg
o-Xylene	ND	25	µg/Kg
Styrene	ND	25	µg/Kg
Bromoform	ND	25	µg/Kg
Isopropylbenzene	ND	25	µg/Kg
1,1,2,2-Tetrachloroethane	ND	25	µg/Kg
1,2,3-Trichloropropane	ND	25	µg/Kg
Bromobenzene	ND	25	µg/Kg
n-Propylbenzene	ND	25	µg/Kg
2-Chlorotoluene	ND	25	µg/Kg
4-Chlorotoluene	ND	25	µg/Kg
1,3,5-Trimethylbenzene	ND	25	µg/Kg
tert-Butylbenzene	ND	25	µg/Kg
1,2,4-Trimethylbenzene	ND	25	µg/Kg
sec-Butylbenzene	ND	25	µg/Kg
4-Isopropyltoluene	ND	25	µg/Kg

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Method Blank

	Results	RL	Units						
1,3-Dichlorobenzene	ND	25	µg/Kg						
1,4-Dichlorobenzene	ND	25	µg/Kg						
n-Butylbenzene	ND	25	µg/Kg						
1,2-Dichlorobenzene	ND	25	µg/Kg						
1,2-Dibromo-3-chloropropane	ND	50	µg/Kg						
1,2,4-Trichlorobenzene	ND	25	µg/Kg						
Hexachlorobutadiene	ND	25	µg/Kg						
Naphthalene	ND	50	µg/Kg						
1,2,3-Trichlorobenzene	ND	25	µg/Kg						
Surr: Dibromofluoromethane	2332	25	µg/Kg	2500	0	93.3	66	121	0
Surr: 1,2-Dichloroethane-d4	2578	25	µg/Kg	2500	0	103	64	125	0
Surr: Toluene-d8	2479	25	µg/Kg	2500	0	99.2	67	124	0
Surr: 4-Bromofluorobenzene	2556	25	µg/Kg	2500	0	102	62	119	0

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011255-01BMS** Batch ID: **R6070** Test Code: **SW8260B** Units: **µg/Kg-dry** Analysis Date **11/28/00 11:48:00 AM** Prep Date **11/21/00**
Client ID: **MW1 S-5** Run ID: **V-1_001128A** SeqNo: **91949**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	688.9	31	µg/Kg-dry	627.4	0	110	61	140	0			
Benzene	709.6	31	µg/Kg-dry	627.4	0	113	71	123	0			
Trichloroethene	635.9	31	µg/Kg-dry	627.4	0	101	72	124	0			
Toluene	681.3	31	µg/Kg-dry	627.4	0	109	71	126	0			
Chlorobenzene	732.5	31	µg/Kg-dry	627.4	90.03	102	73	126	0			
Surr: Dibromofluoromethane	2727	31	µg/Kg-dry	3137	0	86.9	66	121	0			
Surr: 1,2-Dichloroethane-d4	2824	31	µg/Kg-dry	3137	0	90	64	125	0			
Surr: Toluene-d8	2899	31	µg/Kg-dry	3137	0	92.4	67	124	0			
Surr: 4-Bromofluorobenzene	2751	31	µg/Kg-dry	3137	0	87.7	62	119	0			

Sample ID **0011255-01BMSD** Batch ID: **R6070** Test Code: **SW8260B** Units: **µg/Kg-dry** Analysis Date **11/28/00 12:24:00 PM** Prep Date **11/21/00**
Client ID: **MW1 S-5** Run ID: **V-1_001128A** SeqNo: **91950**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	697.6	31	µg/Kg-dry	627.4	0	111	61	140	688.9	1.27	25	
Benzene	699.8	31	µg/Kg-dry	627.4	0	112	71	123	709.6	1.38	25	
Trichloroethene	624.9	31	µg/Kg-dry	627.4	0	99.6	72	124	635.9	1.74	25	
Toluene	678.5	31	µg/Kg-dry	627.4	0	108	71	126	681.3	0.415	25	
Chlorobenzene	794	31	µg/Kg-dry	627.4	90.03	112	73	126	732.5	8.06	25	
Surr: Dibromofluoromethane	2792	31	µg/Kg-dry	3137	0	89	66	121	0	0	0	
Surr: 1,2-Dichloroethane-d4	2900	31	µg/Kg-dry	3137	0	92.5	64	125	0	0	0	
Surr: Toluene-d8	2995	31	µg/Kg-dry	3137	0	95.5	67	124	0	0	0	
Surr: 4-Bromofluorobenzene	3048	31	µg/Kg-dry	3137	0	97.2	62	119	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-11/28/00** Batch ID: **R6070** Test Code: **SW8260B** Units: **µg/Kg** Analysis Date **11/28/00 11:11:00 AM** Prep Date **11/28/00**

Client ID: Run ID: **V-1_001128A** SeqNo: **91958**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	487.3	25	µg/Kg	500	0	97.5	66	138	0			
Benzene	531	25	µg/Kg	500	0	106	76	118	0			
Trichloroethene	467.2	25	µg/Kg	500	0	93.4	72	123	0			
Toluene	513.2	25	µg/Kg	500	0	103	74	119	0			
Chlorobenzene	483	25	µg/Kg	500	0	96.6	76	125	0			
Surr: Dibromofluoromethane	2397	25	µg/Kg	2500	0	95.9	66	121	0			
Surr: 1,2-Dichloroethane-d4	2554	25	µg/Kg	2500	0	102	64	125	0			
Surr: Toluene-d8	2412	25	µg/Kg	2500	0	96.5	67	124	0			
Surr: 4-Bromofluorobenzene	2402	25	µg/Kg	2500	0	96.1	62	119	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

GC/MS SEMIVOLATILES-SOIL

METHOD 8270C

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW1 S-5
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Collection Date: 11/21/00
Lab ID: 0011255-01A
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Bis(2-chloroethyl)ether	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2-Chlorophenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
1,3-Dichlorobenzene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
1,4-Dichlorobenzene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benzyl alcohol	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
2-Methylphenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
1,2-Dichlorobenzene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Bis(2-chloroisopropyl)ether	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Methylphenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
N-Nitrosodi-n-propylamine	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Hexachloroethane	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Nitrobenzene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Isophorone	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,4-Dimethylphenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benzoic acid	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
2-Nitrophenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Bis(2-chloroethoxy)methane	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,4-Dichlorophenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
1,2,4-Trichlorobenzene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Naphthalene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Chloroaniline	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Hexachlorobutadiene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Chloro-3-methylphenol	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
2-Methylnaphthalene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Hexachlorocyclopentadiene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,4,6-Trichlorophenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,4,5-Trichlorophenol	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2-Chloronaphthalene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2-Nitroaniline	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
Dimethyl phthalate	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,6-Dinitrotoluene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Acenaphthylene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
3-Nitroaniline	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Nitrophenol	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,4-Dinitrophenol	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
Acenaphthene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
2,4-Dinitrotoluene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Dibenzofuran	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-01A

Client Sample ID: MW1 S-5
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Chlorophenyl phenyl ether	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Fluorene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Nitroaniline	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
4,6-Dinitro-2-methylphenol	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
N-Nitrosodiphenylamine	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
4-Bromophenyl phenyl ether	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Hexachlorobenzene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Pentachlorophenol	ND	560		µg/Kg-dry	1	11/29/00 12:44:00 PM
Phenanthrene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Anthracene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Carbazole	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Di-n-butyl phthalate	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Fluoranthene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Pyrene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Butyl benzyl phthalate	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Bis(2-ethylhexyl)phthalate	470	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
3,3´-Dichlorobenzidine	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benz(a)anthracene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Chrysene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Di-n-octyl phthalate	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benzo(b)fluoranthene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benzo(k)fluoranthene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benzo(a)pyrene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Dibenz(a,h)anthracene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Indeno(1,2,3-cd)pyrene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Benzo(g,h,i)perylene	ND	280		µg/Kg-dry	1	11/29/00 12:44:00 PM
Surr: 2-Fluorophenol	66.5	27-98		%REC	1	11/29/00 12:44:00 PM
Surr: Phenol-d5	61.8	31-102		%REC	1	11/29/00 12:44:00 PM
Surr: Nitrobenzene-d5	71.4	33-97		%REC	1	11/29/00 12:44:00 PM
Surr: 2-Fluorobiphenyl	74.4	42-100		%REC	1	11/29/00 12:44:00 PM
Surr: 2,4,6-Tribromophenol	71.6	40-117		%REC	1	11/29/00 12:44:00 PM
Surr: 4-Terphenyl-d14	77.4	44-109		%REC	1	11/29/00 12:44:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: MW3 S-15
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Collection Date: 11/21/00
Lab ID: 0011255-02A
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Bis(2-chloroethyl)ether	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2-Chlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
1,3-Dichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
1,4-Dichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benzyl alcohol	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
2-Methylphenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
1,2-Dichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Bis(2-chloroisopropyl)ether	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Methylphenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
N-Nitrosodi-n-propylamine	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Hexachloroethane	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Nitrobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Isophorone	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,4-Dimethylphenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benzoic acid	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
2-Nitrophenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Bis(2-chloroethoxy)methane	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,4-Dichlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
1,2,4-Trichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Naphthalene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Chloroaniline	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Hexachlorobutadiene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Chloro-3-methylphenol	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
2-Methylnaphthalene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Hexachlorocyclopentadiene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,4,6-Trichlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,4,5-Trichlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2-Chloronaphthalene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2-Nitroaniline	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
Dimethyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,6-Dinitrotoluene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Acenaphthylene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
3-Nitroaniline	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Nitrophenol	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,4-Dinitrophenol	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
Acenaphthene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
2,4-Dinitrotoluene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Dibenzofuran	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-02A

Client Sample ID: MW3 S-15
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Chlorophenyl phenyl ether	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Fluorene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Nitroaniline	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
4,6-Dinitro-2-methylphenol	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
N-Nitrosodiphenylamine	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
4-Bromophenyl phenyl ether	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Hexachlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Pentachlorophenol	ND	550		µg/Kg-dry	1	11/30/00 4:02:00 PM
Phenanthrene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Anthracene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Carbazole	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Di-n-butyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Fluoranthene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Pyrene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Butyl benzyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Bis(2-ethylhexyl)phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
3,3'-Dichlorobenzidine	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benz(a)anthracene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Chrysene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Di-n-octyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benzo(b)fluoranthene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benzo(k)fluoranthene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benzo(a)pyrene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Dibenz(a,h)anthracene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Indeno(1,2,3-cd)pyrene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Benzo(g,h,i)perylene	ND	270		µg/Kg-dry	1	11/30/00 4:02:00 PM
Surr: 2-Fluorophenol	236	27-98	SE	%REC	1	11/30/00 4:02:00 PM
Surr: Phenol-d5	228	31-102	SE	%REC	1	11/30/00 4:02:00 PM
Surr: Nitrobenzene-d5	245	33-97	S	%REC	1	11/30/00 4:02:00 PM
Surr: 2-Fluorobiphenyl	257	42-100	S	%REC	1	11/30/00 4:02:00 PM
Surr: 2,4,6-Tribromophenol	253	40-117	SE	%REC	1	11/30/00 4:02:00 PM
Surr: 4-Terphenyl-d14	258	44-109	S	%REC	1	11/30/00 4:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-03A

Client Sample ID: MW8 S-10
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		**SW8270C**				Analyst: **KD**
Phenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Bis(2-chloroethyl)ether	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2-Chlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
1,3-Dichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
1,4-Dichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benzyl alcohol	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
2-Methylphenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
1,2-Dichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Bis(2-chloroisopropyl)ether	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Methylphenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
N-Nitrosodi-n-propylamine	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Hexachloroethane	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Nitrobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Isophorone	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,4-Dimethylphenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benzoic acid	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
2-Nitrophenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Bis(2-chloroethoxy)methane	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,4-Dichlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
1,2,4-Trichlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Naphthalene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Chloroaniline	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Hexachlorobutadiene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Chloro-3-methylphenol	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
2-Methylnaphthalene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Hexachlorocyclopentadiene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,4,6-Trichlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,4,5-Trichlorophenol	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2-Chloronaphthalene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2-Nitroaniline	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
Dimethyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,6-Dinitrotoluene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Acenaphthylene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
3-Nitroaniline	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Nitrophenol	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,4-Dinitrophenol	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
Acenaphthene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
2,4-Dinitrotoluene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Dibenzofuran	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-03A

Client Sample ID: MW8 S-10
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Chlorophenyl phenyl ether	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Fluorene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Nitroaniline	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
4,6-Dinitro-2-methylphenol	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
N-Nitrosodiphenylamine	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
4-Bromophenyl phenyl ether	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Hexachlorobenzene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Pentachlorophenol	ND	540		µg/Kg-dry	1	11/30/00 4:28:00 PM
Phenanthrene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Anthracene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Carbazole	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Di-n-butyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Fluoranthene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Pyrene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Butyl benzyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Bis(2-ethylhexyl)phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
3,3'-Dichlorobenzidine	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benz(a)anthracene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Chrysene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Di-n-octyl phthalate	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benzo(b)fluoranthene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benzo(k)fluoranthene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benzo(a)pyrene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Dibenz(a,h)anthracene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Indeno(1,2,3-cd)pyrene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Benzo(g,h,i)perylene	ND	270		µg/Kg-dry	1	11/30/00 4:28:00 PM
Surr: 2-Fluorophenol	64.1	27-98		%REC	1	11/30/00 4:28:00 PM
Surr: Phenol-d5	63.3	31-102		%REC	1	11/30/00 4:28:00 PM
Surr: Nitrobenzene-d5	70.4	33-97		%REC	1	11/30/00 4:28:00 PM
Surr: 2-Fluorobiphenyl	73.7	42-100		%REC	1	11/30/00 4:28:00 PM
Surr: 2,4,6-Tribromophenol	75.9	40-117		%REC	1	11/30/00 4:28:00 PM
Surr: 4-Terphenyl-d14	76.2	44-109		%REC	1	11/30/00 4:28:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3260** Batch ID: **3260** Test Code: **SW8270C** Units: **µg/Kg** Analysis Date **11/29/00 11:50:00 AM** Prep Date **11/28/00**

Client ID: Run ID: **SV-4_001129A** SeqNo: **92299**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	ND	250	µg/Kg									
Bis(2-chloroethyl)ether	ND	250	µg/Kg									
2-Chlorophenol	ND	250	µg/Kg									
1,3-Dichlorobenzene	ND	250	µg/Kg									
1,4-Dichlorobenzene	ND	250	µg/Kg									
Benzyl alcohol	ND	500	µg/Kg									
2-Methylphenol	ND	250	µg/Kg									
1,2-Dichlorobenzene	ND	250	µg/Kg									
Bis(2-chloroisopropyl)ether	ND	250	µg/Kg									
4-Methylphenol	ND	250	µg/Kg									
N-Nitrosodi-n-propylamine	ND	250	µg/Kg									
Hexachloroethane	ND	250	µg/Kg									
Nitrobenzene	ND	250	µg/Kg									
Isophorone	ND	250	µg/Kg									
2,4-Dimethylphenol	ND	250	µg/Kg									
Benzoic acid	ND	500	µg/Kg									
2-Nitrophenol	ND	250	µg/Kg									
Bis(2-chloroethoxy)methane	ND	250	µg/Kg									
2,4-Dichlorophenol	ND	250	µg/Kg									
1,2,4-Trichlorobenzene	ND	250	µg/Kg									
Naphthalene	ND	250	µg/Kg									
4-Chloroaniline	ND	250	µg/Kg									
Hexachlorobutadiene	ND	250	µg/Kg									
4-Chloro-3-methylphenol	ND	500	µg/Kg									
2-Methylnaphthalene	ND	250	µg/Kg									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Method Blank

	Results	RL	Units
Hexachlorocyclopentadiene	ND	250	µg/Kg
2,4,6-Trichlorophenol	ND	250	µg/Kg
2,4,5-Trichlorophenol	ND	250	µg/Kg
2-Chloronaphthalene	ND	250	µg/Kg
2-Nitroaniline	ND	500	µg/Kg
Dimethyl phthalate	ND	250	µg/Kg
2,6-Dinitrotoluene	ND	250	µg/Kg
Acenaphthylene	ND	250	µg/Kg
3-Nitroaniline	ND	500	µg/Kg
4-Nitrophenol	ND	500	µg/Kg
2,4-Dinitrophenol	ND	500	µg/Kg
Acenaphthene	ND	250	µg/Kg
2,4-Dinitrotoluene	ND	250	µg/Kg
Dibenzofuran	ND	250	µg/Kg
Diethyl phthalate	ND	250	µg/Kg
4-Chlorophenyl phenyl ether	ND	250	µg/Kg
Fluorene	ND	250	µg/Kg
4-Nitroaniline	ND	500	µg/Kg
4,6-Dinitro-2-methylphenol	ND	500	µg/Kg
N-Nitrosodiphenylamine	ND	250	µg/Kg
1,2-Diphenylhydrazine (as Azobe	ND	250	µg/Kg
4-Bromophenyl phenyl ether	ND	250	µg/Kg
Hexachlorobenzene	ND	250	µg/Kg
Pentachlorophenol	ND	500	µg/Kg
Phenanthrene	ND	250	µg/Kg
Anthracene	ND	250	µg/Kg
Carbazole	ND	250	µg/Kg
Di-n-butyl phthalate	ND	250	µg/Kg
Fluoranthene	ND	250	µg/Kg
Pyrene	ND	250	µg/Kg
Butyl benzyl phthalate	ND	250	µg/Kg

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; NA - Not applicable where J values or ND results occur

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Method Blank

	Result	RL	units						
Bis(2-ethylhexyl)phthalate	ND	250	µg/Kg						
3,3´-Dichlorobenzidine	ND	250	µg/Kg						
Benz(a)anthracene	ND	250	µg/Kg						
Chrysene	ND	250	µg/Kg						
Di-n-octyl phthalate	ND	250	µg/Kg						
Benzo(b)fluoranthene	ND	250	µg/Kg						
Benzo(k)fluoranthene	ND	250	µg/Kg						
Benzo(a)pyrene	ND	250	µg/Kg						
Dibenz(a,h)anthracene	ND	250	µg/Kg						
Indeno(1,2,3-cd)pyrene	ND	250	µg/Kg						
Benzo(g,h,i)perylene	ND	250	µg/Kg						
Surr: 2-Fluorophenol	2754	50	µg/Kg	3750	0	73.5	27	98	0
Surr: Phenol-d5	2770	50	µg/Kg	3750	0	73.9	31	102	0
Surr: Nitrobenzene-d5	1853	50	µg/Kg	2500	0	74.1	33	97	0
Surr: 2-Fluorobiphenyl	1864	50	µg/Kg	2500	0	74.5	42	100	0
Surr: 2,4,6-Tribromophenol	3026	50	µg/Kg	3750	0	80.7	40	117	0
Surr: 4-Terphenyl-d14	2096	50	µg/Kg	2500	0	83.8	44	109	0

Qualifiers:
ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011255-01AMS** Batch ID: **3260** Test Code: **SW8270C** Units: **µg/Kg-dry** Analysis Date **11/30/00 3:09:00 PM** Prep Date **11/28/00**
Client ID: **MW1 S-5** Run ID: **SV-4_001130A** SeqNo: **92346**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	2860	290	µg/Kg-dry	4286	0	66.7	31	90	0			
2-Chlorophenol	3017	290	µg/Kg-dry	4286	0	70.4	40	88	0			
1,4-Dichlorobenzene	1781	290	µg/Kg-dry	2857	0	62.3	32	83	0			
N-Nitrosodi-n-propylamine	2112	290	µg/Kg-dry	2857	0	73.9	36	94	0			
1,2,4-Trichlorobenzene	2085	290	µg/Kg-dry	2857	0	73	36	96	0			
4-Chloro-3-methylphenol	3335	570	µg/Kg-dry	4286	0	77.8	43	102	0			
4-Nitrophenol	3205	570	µg/Kg-dry	4286	0	74.8	34	116	0			
Acenaphthene	2190	290	µg/Kg-dry	2857	0	76.6	36	110	0			
2,4-Dinitrotoluene	1934	290	µg/Kg-dry	2857	0	67.7	29	105	0			
Pentachlorophenol	3344	570	µg/Kg-dry	4286	0	78	23	113	0			
Pyrene	2159	290	µg/Kg-dry	2857	0	75.6	28	125	0			
Surr: 2-Fluorophenol	2975	57	µg/Kg-dry	4286	0	69.4	27	98	0			
Surr: Phenol-d5	3076	57	µg/Kg-dry	4286	0	71.8	31	102	0			
Surr: Nitrobenzene-d5	2219	57	µg/Kg-dry	2857	0	77.7	33	97	0			
Surr: 2-Fluorobiphenyl	2348	57	µg/Kg-dry	2857	0	82.2	42	100	0			
Surr: 2,4,6-Tribromophenol	3581	57	µg/Kg-dry	4286	0	83.6	40	117	0			
Surr: 4-Terphenyl-d14	2441	57	µg/Kg-dry	2857	0	85.4	44	109	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID **0011255-01AMSD** Batch ID: **3260** Test Code: **SW8270C** Units: **µg/Kg-dry** Analysis Date **11/30/00 3:36:00 PM** Prep Date **11/28/00**

Client ID: **MW1 S-5** Run ID: **SV-4_001130A** SeqNo: **92353**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	2661	290	µg/Kg-dry	4320	0	61.6	31	90	2860	7.23	35	
2-Chlorophenol	2864	290	µg/Kg-dry	4320	0	66.3	40	88	3017	5.22	50	
1,4-Dichlorobenzene	1692	290	µg/Kg-dry	2880	0	58.8	32	83	1781	5.09	27	
N-Nitrosodi-n-propylamine	1955	290	µg/Kg-dry	2880	0	67.9	36	94	2112	7.7	38	
1,2,4-Trichlorobenzene	1845	290	µg/Kg-dry	2880	0	64.1	36	96	2085	12.2	23	
4-Chloro-3-methylphenol	3126	580	µg/Kg-dry	4320	0	72.4	43	102	3335	6.47	33	
4-Nitrophenol	3119	580	µg/Kg-dry	4320	0	72.2	34	116	3205	2.73	50	
Acenaphthene	2079	290	µg/Kg-dry	2880	0	72.2	36	110	2190	5.2	19	
2,4-Dinitrotoluene	1948	290	µg/Kg-dry	2880	0	67.6	29	105	1934	0.703	47	
Pentachlorophenol	3048	580	µg/Kg-dry	4320	0	70.6	23	113	3344	9.24	47	
Pyrene	1996	290	µg/Kg-dry	2880	0	69.3	28	125	2159	7.85	36	
Surr: 2-Fluorophenol	2738	58	µg/Kg-dry	4320	0	63.4	27	98	0	0	0	
Surr: Phenol-d5	2906	58	µg/Kg-dry	4320	0	67.3	31	102	0	0	0	
Surr: Nitrobenzene-d5	1980	58	µg/Kg-dry	2880	0	68.7	33	97	0	0	0	
Surr: 2-Fluorobiphenyl	2086	58	µg/Kg-dry	2880	0	72.4	42	100	0	0	0	
Surr: 2,4,6-Tribromophenol	3178	58	µg/Kg-dry	4320	0	73.6	40	117	0	0	0	
Surr: 4-Terphenyl-d14	2305	58	µg/Kg-dry	2880	0	80	44	109	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *04-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-3260** Batch ID: **3260** Test Code: **SW8270C** Units: **µg/Kg** Analysis Date **11/29/00 12:17:00 PM** Prep Date **11/28/00**

Client ID: Run ID: **SV-4_001129A** SeqNo: **92300**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Phenol	2891	250	µg/Kg	3750	0	77.1	36	92	0			
2-Chlorophenol	2673	250	µg/Kg	3750	0	71.3	43	93	0			
1,4-Dichlorobenzene	1684	250	µg/Kg	2500	0	67.4	35	88	0			
N-Nitrosodi-n-propylamine	1755	250	µg/Kg	2500	0	70.2	38	95	0			
1,2,4-Trichlorobenzene	1805	250	µg/Kg	2500	0	72.2	38	98	0			
4-Chloro-3-methylphenol	2829	500	µg/Kg	3750	0	75.4	48	102	0			
4-Nitrophenol	3152	500	µg/Kg	3750	0	84	40	120	0			
Acenaphthene	1860	250	µg/Kg	2500	0	74.4	55	95	0			
2,4-Dinitrotoluene	1966	250	µg/Kg	2500	0	78.6	42	108	0			
Pentachlorophenol	3324	500	µg/Kg	3750	0	88.6	35	105	0			
Pyrene	1960	250	µg/Kg	2500	0	78.4	48	107	0			
Surr: 2-Fluorophenol	2752	50	µg/Kg	3750	0	73.4	27	98	0			
Surr: Phenol-d5	2846	50	µg/Kg	3750	0	75.9	31	102	0			
Surr: Nitrobenzene-d5	1867	50	µg/Kg	2500	0	74.7	33	97	0			
Surr: 2-Fluorobiphenyl	1970	50	µg/Kg	2500	0	78.8	42	100	0			
Surr: 2,4,6-Tribromophenol	3368	50	µg/Kg	3750	0	89.8	40	117	0			
Surr: 4-Terphenyl-d14	2225	50	µg/Kg	2500	0	89	44	109	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

PESTICIDES-SOIL

SW-846 METHOD 8081

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW1 S-5
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-01A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
beta-BHC	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
delta-BHC	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
gamma-BHC	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
Heptachlor	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
Aldrin	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
Heptachlor epoxide	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
Endosulfan I	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
alpha-Chlordane	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
gamma-Chlordane	ND	0.91		µg/Kg-dry	1	11/29/00 1:54:00 PM
Dieldrin	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
4,4´-DDE	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
Endrin	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
Endosulfan II	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
4,4´-DDD	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
Endrin aldehyde	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
Endrin ketone	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
Endosulfan sulfate	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
4,4´-DDT	ND	1.8		µg/Kg-dry	1	11/29/00 1:54:00 PM
Methoxychlor	ND	9.1		µg/Kg-dry	1	11/29/00 1:54:00 PM
Toxaphene	ND	28		µg/Kg-dry	1	11/29/00 1:54:00 PM
Technical Chlordane	ND	28		µg/Kg-dry	1	11/29/00 1:54:00 PM
Surr: Tetrachloro-m-xylene	115	50-150		%REC	1	11/29/00 1:54:00 PM
Surr: Decachlorobiphenyl	109	41-154		%REC	1	11/29/00 1:54:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011255
Project: 26553 RIAC TF Green Airport
Lab ID: 0011255-02A

Client Sample ID: MW3 S-15
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
beta-BHC	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
delta-BHC	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
gamma-BHC	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
Heptachlor	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
Aldrin	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
Heptachlor epoxide	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
Endosulfan I	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
alpha-Chlordane	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
gamma-Chlordane	ND	0.86		µg/Kg-dry	1	11/29/00 1:26:00 PM
Dieldrin	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
4,4´-DDE	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
Endrin	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
Endosulfan II	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
4,4´-DDD	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
Endrin aldehyde	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
Endrin ketone	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
Endosulfan sulfate	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
4,4´-DDT	ND	1.7		µg/Kg-dry	1	11/29/00 1:26:00 PM
Methoxychlor	ND	8.6		µg/Kg-dry	1	11/29/00 1:26:00 PM
Toxaphene	ND	27		µg/Kg-dry	1	11/29/00 1:26:00 PM
Technical Chlordane	ND	27		µg/Kg-dry	1	11/29/00 1:26:00 PM
Surr: Tetrachloro-m-xylene	107	50-150		%REC	1	11/29/00 1:26:00 PM
Surr: Decachlorobiphenyl	94.5	41-154		%REC	1	11/29/00 1:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW8 S-10
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-03A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ORGANOCHLORINE PESTICIDES		**SW8081A**				Analyst: **KEM**
alpha-BHC	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
beta-BHC	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
delta-BHC	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
gamma-BHC	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
Heptachlor	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
Aldrin	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
Heptachlor epoxide	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
Endosulfan I	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
alpha-Chlordane	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
gamma-Chlordane	ND	0.87		µg/Kg-dry	1	11/29/00 2:23:00 PM
Dieldrin	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
4,4´-DDE	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Endrin	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Endosulfan II	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
4,4´-DDD	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Endrin aldehyde	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Endrin ketone	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Endosulfan sulfate	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
4,4´-DDT	ND	1.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Methoxychlor	ND	8.7		µg/Kg-dry	1	11/29/00 2:23:00 PM
Toxaphene	ND	27		µg/Kg-dry	1	11/29/00 2:23:00 PM
Technical Chlordane	ND	27		µg/Kg-dry	1	11/29/00 2:23:00 PM
Surr: Tetrachloro-m-xylene	68.1	50-150		%REC	1	11/29/00 2:23:00 PM
Surr: Decachlorobiphenyl	80.9	41-154		%REC	1	11/29/00 2:23:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3259** Batch ID: **3259** Test Code: **SW8081A** Units: **µg/Kg** Analysis Date **11/29/00 11:31:00 AM** Prep Date **11/27/00**
Client ID: Run ID: **GC-TRENT_001129A** SeqNo: **92262**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
alpha-BHC	ND	0.80	µg/Kg									
beta-BHC	ND	0.80	µg/Kg									
delta-BHC	ND	0.80	µg/Kg									
gamma-BHC	ND	0.80	µg/Kg									
Heptachlor	ND	0.80	µg/Kg									
Aldrin	ND	0.80	µg/Kg									
Heptachlor epoxide	ND	0.80	µg/Kg									
Endosulfan I	ND	0.80	µg/Kg									
alpha-Chlordane	ND	0.80	µg/Kg									
gamma-Chlordane	ND	0.80	µg/Kg									
Dieldrin	ND	1.6	µg/Kg									
4,4´-DDE	ND	1.6	µg/Kg									
Endrin	ND	1.6	µg/Kg									
Endosulfan II	ND	1.6	µg/Kg									
4,4´-DDD	ND	1.6	µg/Kg									
Endrin aldehyde	ND	1.6	µg/Kg									
Endrin ketone	ND	1.6	µg/Kg									
Endosulfan sulfate	ND	1.6	µg/Kg									
4,4´-DDT	ND	1.6	µg/Kg									
Methoxychlor	ND	8.0	µg/Kg									
Toxaphene	ND	25	µg/Kg									
Technical Chlordane	ND	25	µg/Kg									
Surr: Tetrachloro-m-xylene	8.938	0	µg/Kg	8	0	112	50	150	0			
Surr: Decachlorobiphenyl	8.815	0	µg/Kg	8	0	110	41	154	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0011255-02AMS** Batch ID: **3259** Test Code: **SW8081A** Units: **µg/Kg-dry** Analysis Date **11/29/00 12:28:00 PM** Prep Date **11/27/00**
Client ID: **MW3 S-15** Run ID: **GC-TRENT_001129A** SeqNo: **92264**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	14.38	0.86	µg/Kg-dry	10.77	0	133	31	154	0			
Heptachlor	7.968	0.86	µg/Kg-dry	10.77	0	74	38	143	0			
Aldrin	11.85	0.86	µg/Kg-dry	10.77	0	110	40	146	0			
Dieldrin	29.16	1.7	µg/Kg-dry	26.93	0	108	43	142	0			
Endrin	37	1.7	µg/Kg-dry	26.93	0	137	40	162	0			
4,4´-DDT	31.3	1.7	µg/Kg-dry	26.93	0	116	33	159	0			
Surr: Tetrachloro-m-xylene	9.256	0	µg/Kg-dry	8.618	0	107	50	150	0			
Surr: Decachlorobiphenyl	8.501	0	µg/Kg-dry	8.618	0	98.6	41	154	0			

Sample ID **0011255-02AMSD** Batch ID: **3259** Test Code: **SW8081A** Units: **µg/Kg-dry** Analysis Date **11/29/00 12:57:00 PM** Prep Date **11/27/00**
Client ID: **MW3 S-15** Run ID: **GC-TRENT_001129A** SeqNo: **92265**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	16.15	0.86	µg/Kg-dry	10.7	0	151	31	154	14.38	11.6	50	
Heptachlor	8.881	0.86	µg/Kg-dry	10.7	0	83	38	143	7.968	10.8	50	
Aldrin	11.94	0.86	µg/Kg-dry	10.7	0	112	40	146	11.85	0.73	50	
Dieldrin	29.39	1.7	µg/Kg-dry	26.75	0	110	43	142	29.16	0.762	50	
Endrin	36.52	1.7	µg/Kg-dry	26.75	0	137	40	162	37	1.29	50	
4,4´-DDT	31.24	1.7	µg/Kg-dry	26.75	0	117	33	159	31.3	0.188	50	
Surr: Tetrachloro-m-xylene	9.481	0	µg/Kg-dry	8.56	0	111	50	150	0	0	0	
Surr: Decachlorobiphenyl	8.421	0	µg/Kg-dry	8.56	0	98.4	41	154	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-3259** Batch ID: **3259** Test Code: **SW8081A** Units: **µg/Kg** Analysis Date **11/29/00 12:00:00 PM** Prep Date **11/27/00**

Client ID: Run ID: **GC-TRENT_001129A** SeqNo: **92263**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
gamma-BHC	12.09	0.80	µg/Kg	10	0	121	40	141	0			
Heptachlor	11.53	0.80	µg/Kg	10	0	115	47	137	0			
Aldrin	12.58	0.80	µg/Kg	10	0	126	45	140	0			
Dieldrin	29.56	1.6	µg/Kg	25	0	118	43	150	0			
Endrin	35.05	1.6	µg/Kg	25	0	140	43	184	0			
4,4´-DDT	32.03	1.6	µg/Kg	25	0	128	38	153	0			
Surr: Tetrachloro-m-xylene	9.211	0	µg/Kg	8	0	115	50	150	0			
Surr: Decachlorobiphenyl	8.508	0	µg/Kg	8	0	106	41	154	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

PCB-SOIL

SW-846 METHOD 8082

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW1 S-5
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-01A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **KEM**
Aroclor 1016	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Aroclor 1221	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Aroclor 1232	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Aroclor 1242	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Aroclor 1248	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Aroclor 1254	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Aroclor 1260	ND	28		µg/Kg-dry	1	11/30/00 5:55:00 PM
Surr: Tetrachloro-m-xylene	86.5	43-117		%REC	1	11/30/00 5:55:00 PM
Surr: Decachlorobiphenyl	121	36-130		%REC	1	11/30/00 5:55:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW3 S-15
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-02A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **KEM**
Aroclor 1016	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Aroclor 1221	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Aroclor 1232	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Aroclor 1242	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Aroclor 1248	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Aroclor 1254	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Aroclor 1260	ND	27		µg/Kg-dry	1	11/30/00 6:26:00 PM
Surr: Tetrachloro-m-xylene	91.3	43-117		%REC	1	11/30/00 6:26:00 PM
Surr: Decachlorobiphenyl	124	36-130		%REC	1	11/30/00 6:26:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW8 S-10
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-03A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082		**SW8082**				Analyst: **KEM**
Aroclor 1016	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Aroclor 1221	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Aroclor 1232	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Aroclor 1242	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Aroclor 1248	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Aroclor 1254	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Aroclor 1260	ND	27		µg/Kg-dry	1	11/30/00 6:57:00 PM
Surr: Tetrachloro-m-xylene	64.4	43-117		%REC	1	11/30/00 6:57:00 PM
Surr: Decachlorobiphenyl	87.0	36-130		%REC	1	11/30/00 6:57:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3258** Batch ID: **3258** Test Code: **SW8082** Units: **µg/Kg** Analysis Date **11/29/00 12:44:00 PM** Prep Date **11/27/00**
Client ID: Run ID: **GC-DALI_001129A** SeqNo: **92438**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	ND	25	µg/Kg									
Aroclor 1221	ND	25	µg/Kg									
Aroclor 1232	ND	25	µg/Kg									
Aroclor 1242	ND	25	µg/Kg									
Aroclor 1248	ND	25	µg/Kg									
Aroclor 1254	ND	25	µg/Kg									
Aroclor 1260	ND	25	µg/Kg									
Surr: Tetrachloro-m-xylene	6.829	0	µg/Kg	8	0	85.4	43	117	0			
Surr: Decachlorobiphenyl	9.036	0	µg/Kg	8	0	113	36	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID **0011230-01CMS** Batch ID: **3258** Test Code: **SW8082** Units: **µg/Kg-dry** Analysis Date **11/29/00 2:18:00 PM** Prep Date **11/27/00**
Client ID: Run ID: **GC-DALI_001129A** SeqNo: **92441**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	412.3	26	µg/Kg-dry	521	0	79.1	41	125	0			
Aroclor 1260	530	26	µg/Kg-dry	521	0	102	39	120	0			
Surr: Tetrachloro-m-xylene	6.927	0	µg/Kg-dry	8.337	0	83.1	43	117	0			
Surr: Decachlorobiphenyl	8.623	0	µg/Kg-dry	8.337	0	103	36	130	0			

Sample ID **0011230-01CMSD** Batch ID: **3258** Test Code: **SW8082** Units: **µg/Kg-dry** Analysis Date **11/29/00 2:49:00 PM** Prep Date **11/27/00**
Client ID: Run ID: **GC-DALI_001129A** SeqNo: **92442**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	460.5	26	µg/Kg-dry	520.5	0	88.5	41	125	412.3	11	50	
Aroclor 1260	553.5	26	µg/Kg-dry	520.5	0	106	39	120	530	4.34	50	
Surr: Tetrachloro-m-xylene	7.365	0	µg/Kg-dry	8.328	0	88.4	43	117	0	0	0	
Surr: Decachlorobiphenyl	9.152	0	µg/Kg-dry	8.328	0	110	36	130	0	0	0	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-3258** Batch ID: **3258** Test Code: **SW8082** Units: **µg/Kg** Analysis Date **11/29/00 1:15:00 PM** Prep Date **11/27/00**

Client ID: Run ID: **GC-DALI_001129A** SeqNo: **92439**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Aroclor 1016	531.6	25	µg/Kg	500	0	106	60	118	0			
Aroclor 1260	559.5	25	µg/Kg	500	0	112	61	125	0			
Surr: Tetrachloro-m-xylene	7.327	0	µg/Kg	8	0	91.6	43	117	0			
Surr: Decachlorobiphenyl	9.682	0	µg/Kg	8	0	121	36	130	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
NA - Not applicable where J values or ND results occur
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

TRACE METALS & WET CHEMISTRY

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW1 S-5
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-01A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846 - 3051/6010		**SW6010B**				Analyst: **RK**
Aluminum	8,600	27		mg/Kg-dry	1	11/30/00 4:17:58 PM
Antimony	ND	5.4		mg/Kg-dry	1	11/30/00 4:17:58 PM
Arsenic	17	6.8		mg/Kg-dry	1	11/30/00 4:17:58 PM
Barium	ND	27		mg/Kg-dry	1	11/30/00 4:17:58 PM
Beryllium	ND	0.68		mg/Kg-dry	1	11/30/00 4:17:58 PM
Cadmium	ND	0.68		mg/Kg-dry	1	11/30/00 4:17:58 PM
Calcium	760	340		mg/Kg-dry	1	11/30/00 4:17:58 PM
Chromium	17	1.4		mg/Kg-dry	1	11/30/00 4:17:58 PM
Cobalt	10	6.8		mg/Kg-dry	1	11/30/00 4:17:58 PM
Copper	17	3.4		mg/Kg-dry	1	11/30/00 4:17:58 PM
Iron	36,000	14		mg/Kg-dry	1	11/30/00 4:17:58 PM
Lead	9.6	3.4		mg/Kg-dry	1	11/30/00 4:17:58 PM
Magnesium	4,400	340		mg/Kg-dry	1	11/30/00 4:17:58 PM
Manganese	280	2.0		mg/Kg-dry	1	11/30/00 4:17:58 PM
Nickel	19	5.4		mg/Kg-dry	1	11/30/00 4:17:58 PM
Potassium	860	340		mg/Kg-dry	1	11/29/00 4:24:24 PM
Selenium	ND	11		mg/Kg-dry	1	11/30/00 4:17:58 PM
Silver	ND	1.9		mg/Kg-dry	1	11/30/00 4:17:58 PM
Sodium	ND	340		mg/Kg-dry	1	11/29/00 4:24:24 PM
Thallium	ND	6.8		mg/Kg-dry	1	11/30/00 4:17:58 PM
Vanadium	11	6.8		mg/Kg-dry	1	11/30/00 4:17:58 PM
Zinc	51	2.7		mg/Kg-dry	1	11/30/00 4:17:58 PM
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		**E418.1**				Analyst: **JA**
Petroleum Hydrocarbons, TR	ND	36		mg/Kg-dry	1	11/29/00
MERCURY, 7471A		**SW7471A**				Analyst: **GM**
Mercury	ND	0.029		mg/Kg-dry	1	11/28/00
PERCENT MOISTURE		**D2216**				Analyst: **SL**
Percent Moisture	13.8	0		wt%	1	11/24/00
TOTAL ORGANIC CARBON, SOIL		**CFAS18**				Analyst: **RK**
Total Organic Carbon	5,600	700		mg/Kg-dry	1	11/29/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW3 S-15
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-02A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846 - 3051/6010		**SW6010B**				Analyst: **RK**
Aluminum	5,700	26		mg/Kg-dry	1	11/30/00 4:22:40 PM
Antimony	ND	5.3		mg/Kg-dry	1	11/30/00 4:22:40 PM
Arsenic	ND	6.6		mg/Kg-dry	1	11/30/00 4:22:40 PM
Barium	ND	26		mg/Kg-dry	1	11/30/00 4:22:40 PM
Beryllium	ND	0.66		mg/Kg-dry	1	11/30/00 4:22:40 PM
Cadmium	ND	0.66		mg/Kg-dry	1	11/30/00 4:22:40 PM
Calcium	760	330		mg/Kg-dry	1	11/30/00 4:22:40 PM
Chromium	8.0	1.3		mg/Kg-dry	1	11/30/00 4:22:40 PM
Cobalt	7.2	6.6		mg/Kg-dry	1	11/30/00 4:22:40 PM
Copper	11	3.3		mg/Kg-dry	1	11/30/00 4:22:40 PM
Iron	14,000	13		mg/Kg-dry	1	11/30/00 4:22:40 PM
Lead	7.2	3.3		mg/Kg-dry	1	11/30/00 4:22:40 PM
Magnesium	2,200	330		mg/Kg-dry	1	11/30/00 4:22:40 PM
Manganese	160	2.0		mg/Kg-dry	1	11/30/00 4:22:40 PM
Nickel	16	5.3		mg/Kg-dry	1	11/30/00 4:22:40 PM
Potassium	400	330		mg/Kg-dry	1	11/29/00 4:26:39 PM
Selenium	ND	11		mg/Kg-dry	1	11/30/00 4:22:40 PM
Silver	ND	1.8		mg/Kg-dry	1	11/30/00 4:22:40 PM
Sodium	ND	330		mg/Kg-dry	1	11/29/00 4:26:39 PM
Thallium	ND	6.6		mg/Kg-dry	1	11/30/00 4:22:40 PM
Vanadium	9.3	6.6		mg/Kg-dry	1	11/30/00 4:22:40 PM
Zinc	61	2.6		mg/Kg-dry	1	11/30/00 4:22:40 PM
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		**E418.1**				Analyst: **JA**
Petroleum Hydrocarbons, TR	ND	32		mg/Kg-dry	1	11/29/00
MERCURY, 7471A		**SW7471A**				Analyst: **GM**
Mercury	ND	0.028		mg/Kg-dry	1	11/28/00
PERCENT MOISTURE		**D2216**				Analyst: **SL**
Percent Moisture	10.4	0		wt%	1	11/24/00
TOTAL ORGANIC CARBON, SOIL		**CFAS18**				Analyst: **RK**
Total Organic Carbon	2,100	700		mg/Kg-dry	1	11/29/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

\# - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT:	Camp Dresser and McKee	**Client Sample ID:**	MW8 S-10
Lab Order:	0011255		
Project:	26553 RIAC TF Green Airport	**Collection Date:**	11/21/00
Lab ID:	0011255-03A	**Matrix:**	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846 - 3051/6010		**SW6010B**				Analyst: **RK**
Aluminum	5,900	27		mg/Kg-dry	1	11/30/00 4:27:10 PM
Antimony	ND	5.3		mg/Kg-dry	1	11/30/00 4:27:10 PM
Arsenic	6.8	6.6		mg/Kg-dry	1	11/30/00 4:27:10 PM
Barium	ND	27		mg/Kg-dry	1	11/30/00 4:27:10 PM
Beryllium	ND	0.66		mg/Kg-dry	1	11/30/00 4:27:10 PM
Cadmium	ND	0.66		mg/Kg-dry	1	11/30/00 4:27:10 PM
Calcium	1,300	330		mg/Kg-dry	1	11/30/00 4:27:10 PM
Chromium	10	1.3		mg/Kg-dry	1	11/30/00 4:27:10 PM
Cobalt	ND	6.6		mg/Kg-dry	1	11/30/00 4:27:10 PM
Copper	12	3.3		mg/Kg-dry	1	11/30/00 4:27:10 PM
Iron	16,000	13		mg/Kg-dry	1	11/30/00 4:27:10 PM
Lead	6.9	3.3		mg/Kg-dry	1	11/30/00 4:27:10 PM
Magnesium	3,200	330		mg/Kg-dry	1	11/30/00 4:27:10 PM
Manganese	180	2.0		mg/Kg-dry	1	11/30/00 4:27:10 PM
Nickel	14	5.3		mg/Kg-dry	1	11/30/00 4:27:10 PM
Potassium	570	330		mg/Kg-dry	1	11/29/00 4:28:54 PM
Selenium	ND	11		mg/Kg-dry	1	11/30/00 4:27:10 PM
Silver	ND	1.9		mg/Kg-dry	1	11/30/00 4:27:10 PM
Sodium	ND	330		mg/Kg-dry	1	11/29/00 4:28:54 PM
Thallium	ND	6.6		mg/Kg-dry	1	11/30/00 4:27:10 PM
Vanadium	8.9	6.6		mg/Kg-dry	1	11/30/00 4:27:10 PM
Zinc	32	2.7		mg/Kg-dry	1	11/30/00 4:27:10 PM
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		**E418.1**				Analyst: **JA**
Petroleum Hydrocarbons, TR	ND	33		mg/Kg-dry	1	11/29/00
MERCURY, 7471A		**SW7471A**				Analyst: **GM**
Mercury	ND	0.028		mg/Kg-dry	1	11/28/00
PERCENT MOISTURE		**D2216**				Analyst: **SL**
Percent Moisture	8.7	0		wt%	1	11/24/00
TOTAL ORGANIC CARBON, SOIL		**CFAS18**				Analyst: **RK**
Total Organic Carbon	4,600	700		mg/Kg-dry	1	11/29/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3250** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/29/00 4:10:57 PM** Prep Date: **11/28/00**

Client ID: Run ID: **ICP-OPTIMA_001129B** SeqNo: **91966**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	ND	250	mg/Kg									
Sodium	ND	250	mg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-3250** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/30/00 3:29:45 PM** Prep Date: **11/28/00**
Client ID: Run ID: **ICP-OPTIMA_001130A** SeqNo: **92317**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	ND	20	mg/Kg									
Antimony	ND	4.0	mg/Kg									
Arsenic	ND	5.0	mg/Kg									
Barium	ND	20	mg/Kg									
Beryllium	ND	0.50	mg/Kg									
Cadmium	ND	0.50	mg/Kg									
Calcium	ND	250	mg/Kg									
Chromium	ND	1.0	mg/Kg									
Cobalt	ND	5.0	mg/Kg									
Copper	ND	2.5	mg/Kg									
Iron	ND	10	mg/Kg									
Lead	ND	2.5	mg/Kg									
Magnesium	ND	250	mg/Kg									
Manganese	ND	1.5	mg/Kg									
Nickel	ND	4.0	mg/Kg									
Selenium	ND	8.0	mg/Kg									
Silver	ND	1.4	mg/Kg									
Thallium	ND	5.0	mg/Kg									
Vanadium	ND	5.0	mg/Kg									
Zinc	ND	2.0	mg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Method Blank

Sample ID: **MBLK** Batch ID: **R6077** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-IR_001129A** SeqNo: **92119**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	ND	25	mg/Kg									

Sample ID: **MB-3241** Batch ID: **3241** Test Code: **SW7471A** Units: **mg/Kg** Analysis Date **11/28/00** Prep Date: **11/27/00**
Client ID: Run ID: **HG-FIMS_001128A** SeqNo: **91500**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	ND	0.025	mg/Kg									

Sample ID: **MB-R6064** Batch ID: **R6064** Test Code: **CFAS18** Units: **mg/Kg** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-WET_001129A** SeqNo: **91849**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Organic Carbon	ND	700	mg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE & MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0011266-01CMS** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/29/00 4:19:50 PM** Prep Date: **11/28/00**
Client ID: Run ID: **ICP-OPTIMA_001129B** SeqNo: **91970**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	3314	360	mg/Kg-dry	2893	592.4	94.1	75	125	0			
Sodium	3046	360	mg/Kg-dry	2893	183.2	99	75	125	0			

Sample ID: **0011266-01CMSD** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/29/00 4:22:07 PM** Prep Date: **11/28/00**
Client ID: Run ID: **ICP-OPTIMA_001129B** SeqNo: **91971**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	3284	360	mg/Kg-dry	2907	592.4	92.6	75	125	3314	0.899	20	
Sodium	3024	360	mg/Kg-dry	2907	183.2	97.7	75	125	3046	0.724	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: **0011266-01CMS** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/30/00 3:46:14 PM** Prep Date: **11/28/00**

Client ID: Run ID: **ICP-OPTIMA_001130A** SeqNo: **92321**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	8600	140	mg/Kg-dry	1157	6406	190	75	125	0			S
Antimony	295	29	mg/Kg-dry	289.3	37.92	88.9	75	125	0			
Arsenic	297.9	36	mg/Kg-dry	289.3	22.11	95.3	75	125	0			
Barium	1010	140	mg/Kg-dry	578.5	318.2	120	75	125	0			
Beryllium	116.9	3.6	mg/Kg-dry	115.7	0	101	75	125	0			
Cadmium	126.6	3.6	mg/Kg-dry	115.7	35.41	78.8	75	125	0			
Calcium	6118	1,800	mg/Kg-dry	2893	3568	88.1	75	125	0			
Chromium	701.4	7.2	mg/Kg-dry	578.5	83.22	107	75	125	0			
Cobalt	622	36	mg/Kg-dry	578.5	11.25	106	75	125	0			
Copper	741.6	18	mg/Kg-dry	289.3	533.5	71.9	75	125	0			S
Iron	55340	72	mg/Kg-dry	1157	48530	589	75	125	0			S
Lead	962.4	18	mg/Kg-dry	289.3	963.2	-0.274	75	125	0			S
Magnesium	4953	1,800	mg/Kg-dry	2893	2153	96.8	75	125	0			
Manganese	1258	11	mg/Kg-dry	578.5	562.7	120	75	125	0			
Nickel	740.3	29	mg/Kg-dry	578.5	175.5	97.6	75	125	0			
Selenium	233.8	58	mg/Kg-dry	231.4	0	101	75	125	0			
Silver	60.6	10	mg/Kg-dry	57.85	3.433	98.8	75	125	0			
Thallium	177.3	36	mg/Kg-dry	231.4	0	76.6	75	125	0			
Vanadium	613.7	36	mg/Kg-dry	578.5	30.17	101	75	125	0			
Zinc	2517	14	mg/Kg-dry	578.5	20580	-3120	75	125	0			S

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: **0011266-01CMSD** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg-dry** Analysis Date **11/30/00 3:50:43 PM** Prep Date: **11/28/00**

Client ID: Run ID: **ICP-OPTIMA_001130A** SeqNo: **92322**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	8806	150	mg/Kg-dry	1163	6406	206	75	125	8600	2.36	20	S
Antimony	295.7	29	mg/Kg-dry	290.7	37.92	88.7	75	125	295	0.238	20	
Arsenic	292.6	36	mg/Kg-dry	290.7	22.11	93.1	75	125	297.9	1.79	20	
Barium	1209	150	mg/Kg-dry	581.3	318.2	153	75	125	1010	17.9	20	S
Beryllium	115.3	3.6	mg/Kg-dry	116.3	0	99.2	75	125	116.9	1.39	20	
Cadmium	126.2	3.6	mg/Kg-dry	116.3	35.41	78.1	75	125	126.6	0.25	20	
Calcium	7071	1,800	mg/Kg-dry	2907	3568	120	75	125	6118	14.4	20	
Chromium	647.3	7.3	mg/Kg-dry	581.3	83.22	97	75	125	701.4	8.02	20	
Cobalt	616.9	36	mg/Kg-dry	581.3	11.25	104	75	125	622	0.82	20	
Copper	852.2	18	mg/Kg-dry	290.7	533.5	110	75	125	741.6	13.9	20	
Iron	44500	73	mg/Kg-dry	1163	48530	-347	75	125	55340	21.7	20	SR
Lead	1308	18	mg/Kg-dry	290.7	963.2	119	75	125	962.4	30.4	20	R
Magnesium	5028	1,800	mg/Kg-dry	2907	2153	98.9	75	125	4953	1.51	20	
Manganese	1209	11	mg/Kg-dry	581.3	562.7	111	75	125	1258	3.92	20	
Nickel	695.3	29	mg/Kg-dry	581.3	175.5	89.4	75	125	740.3	6.28	20	
Selenium	224	58	mg/Kg-dry	232.5	0	96.3	75	125	233.8	4.31	20	
Silver	59.93	10	mg/Kg-dry	58.13	3.433	97.2	75	125	60.6	1.12	20	
Thallium	199.8	36	mg/Kg-dry	232.5	0	85.9	75	125	177.3	11.9	20	
Vanadium	606.4	36	mg/Kg-dry	581.3	30.17	99.1	75	125	613.7	1.2	20	
Zinc	3451	15	mg/Kg-dry	581.3	20580	-2950	75	125	2517	31.3	20	SR

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **0011245-03BMS** Batch ID: **R6077** Test Code: **E418.1** Units: **mg/Kg-dry** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-IR_001129A** SeqNo: **92105**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	369.9	35	mg/Kg-dry	403.1	0	91.8	80	120	0			

Sample ID: **0011245-03BMSD** Batch ID: **R6077** Test Code: **E418.1** Units: **mg/Kg-dry** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-IR_001129A** SeqNo: **92106**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	377.5	35	mg/Kg-dry	402.8	0	93.7	80	120	369.9	2.02	20	

Sample ID: **0011229-04BMS** Batch ID: **3241** Test Code: **SW7471A** Units: **mg/Kg-dry** Analysis Date **11/28/00** Prep Date: **11/27/00**
Client ID: Run ID: **HG-FIMS_001128A** SeqNo: **91483**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	1.736	0.030	mg/Kg-dry	0.591	0.688	177	75	125	0			S

Sample ID: **0011229-04BMSD** Batch ID: **3241** Test Code: **SW7471A** Units: **mg/Kg-dry** Analysis Date **11/28/00** Prep Date: **11/27/00**
Client ID: Run ID: **HG-FIMS_001128A** SeqNo: **91484**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	1.697	0.030	mg/Kg-dry	0.5931	0.688	170	75	125	1.736	2.24	20	S

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-3250** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/29/00 4:13:08 PM** Prep Date: **11/28/00**

Client ID: Run ID: **ICP-OPTIMA_001129B** SeqNo: **91967**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Potassium	1962	250	mg/Kg	2000	0	98.1	80	120	0			
Sodium	1985	250	mg/Kg	2000	0	99.3	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS-3250** Batch ID: **3250** Test Code: **SW6010B** Units: **mg/Kg** Analysis Date **11/30/00 3:32:57 PM** Prep Date: **11/28/00**

Client ID: Run ID: **ICP-OPTIMA_001130A** SeqNo: **92318**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Aluminum	785.9	20	mg/Kg	800	0	98.2	80	120	0			
Antimony	186	4.0	mg/Kg	200	0	93	80	120	0			
Arsenic	193.1	5.0	mg/Kg	200	0	96.6	80	120	0			
Barium	411.6	20	mg/Kg	400	0	103	80	120	0			
Beryllium	77.19	0.50	mg/Kg	80	0	96.5	80	120	0			
Cadmium	80.49	0.50	mg/Kg	80	0	101	80	120	0			
Calcium	1912	250	mg/Kg	2000	0	95.6	80	120	0			
Chromium	410.8	1.0	mg/Kg	400	0	103	80	120	0			
Cobalt	408.1	5.0	mg/Kg	400	0	102	80	120	0			
Copper	199.9	2.5	mg/Kg	200	0	100	80	120	0			
Iron	819.2	10	mg/Kg	800	0	102	80	120	0			
Lead	203.6	2.5	mg/Kg	200	0	102	80	120	0			
Magnesium	2000	250	mg/Kg	2000	0	100	80	120	0			
Manganese	414.4	1.5	mg/Kg	400	0	104	80	120	0			
Nickel	405.4	4.0	mg/Kg	400	0	101	80	120	0			
Selenium	150.5	8.0	mg/Kg	160	0	94.1	80	120	0			
Silver	31.98	1.4	mg/Kg	40	0	79.9	80	120	0			
Thallium	158.1	5.0	mg/Kg	160	0	98.8	80	120	0			
Vanadium	410.5	5.0	mg/Kg	400	0	103	80	120	0			
Zinc	403.8	2.0	mg/Kg	400	0	101	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *05-Dec-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011255
Project: 26553 RIAC TF Green Airport

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID: **LCS** Batch ID: **R6077** Test Code: **E418.1** Units: **mg/Kg** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-IR_001129A** SeqNo: **92101**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Petroleum Hydrocarbons, TR	254.7	25	mg/Kg	267.6	0	95.2	80	120	0			

Sample ID: **LCS-3241** Batch ID: **3241** Test Code: **SW7471A** Units: **mg/Kg** Analysis Date **11/28/00** Prep Date: **11/27/00**
Client ID: Run ID: **HG-FIMS_001128A** SeqNo: **91498**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Mercury	0.5216	0.025	mg/Kg	0.5	0	104	80	120	0			

Sample ID: **LCS-R6064** Batch ID: **R6064** Test Code: **CFAS18** Units: **mg/Kg** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-WET_001129A** SeqNo: **91850**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Organic Carbon	4963	700	mg/Kg	4750	0	104	80	120	0			

Sample ID: **LCSD** Batch ID: **R6064** Test Code: **CFAS18** Units: **mg/Kg** Analysis Date **11/29/00** Prep Date:
Client ID: Run ID: **ING-WET_001129A** SeqNo: **91896**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qu
Total Organic Carbon	14500	700	mg/Kg	12700	0	114	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRL Environmental Laboratories Corporation

111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 · FAX: (603) 429-8496

FAX TRANSMITTAL FORM

DATE: 11/30/00

TO: Matt Dentch

FROM: Denise

FAX #: 617-452-8000

Number of Pages including cover sheet:

Comments:

Results for Amro # 11123

AMRO Environmental Laboratories Corporation

111 Herrick Street, Merrimack, NH 03054
TEL: (603) 424-2022 · FAX: (603) 429-8496

November 30, 2000

Matt Dentch
Camp Dresser and McKee
1 Cambridge Place
50 Hampshire Street
Cambridge, MA 02139
TEL: (617) 452-6326
FAX (617) 452-8000

RE: RIAC TF GREEN AIRPORT Order No.: 0011123

Dear Matt Dentch:

AMRO Environmental Laboratories Corp. received 2 samples on 11/10/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt. Please see the enclosed Case Narrative for quality control deviations that were encountered during the analyses associated with this project.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

WORK ORDER SAMPLE SUMMARY

AMRO Environmental Laboratories Corp.

Date: *28-Nov-00*

CLIENT: Camp Dresser and McKee
Project: RIAC TF GREEN AIRPORT
Lab Order: 0011123
Date Received: 11/10/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0011123-01A	MW-10 S-3	11/9/00
0011123-01B	MW-10 S-3	11/9/00
0011123-02A	TRIP BLANK	11/9/00

A..RO Environmental Laboratories Corp.

30-Nov-00

Lab Order: 0011123
Client: Camp Dresser and McKee
Project: RIAC TF GREEN AIRPORT

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011123-01A	MW-10 S-3	11/9/00	Soil	VOLATILES by GC/MS, Medium-Level		11/9/00	11/15/00
0011123-01B				ICP METALS, 3051/6010		11/15/00	11/29/00
				ICP METALS, 3051/6010		11/15/00	11/16/00
				MERCURY, Soil		11/20/00	11/21/00
				ORGANOCHLORINE PESTICIDES		11/15/00	11/17/00
				PCBS IN SOIL/SOLIDS		11/15/00	11/18/00
				Percent Moisture			11/15/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/16/00	11/19/00
				TOC, Soil			11/22/00
				TPH/IR (Modified for Soils/Solids)			11/24/00
0011123-02A	TRIP BLANK			VOLATILES by GC/MS, Medium-Level		11/9/00	11/15/00

CHAIN-OF-CUSTODY

AMRO Environmental Laboratories Corporation
111 Herrick Street
Merrimack, N.H. 03054
Office: 603-424-2022 Fax: 603-429-8496

CHAIN OF CUSTODY RECORD

32672

RECEIVED TIME NOV. 30. 5:48PM

NOV. 30. 2000 5:55PM

PAGE 1 OF 1

Proj. No.	Project Name	Project State
	RIAC TF GREEN AIRPORT	RI

Samplers (Signature): [signature]

Sta. No.	Date	Time	Comp	Grab	Station Location	Type Size, & No. of Containers	MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain							Remarks
	11-9-00	12PM	X		MW-10 S-3	VIAL-2	S	X						
	11-9-00	12PM	X		MW-10 S-3	16oz.-1	S		X	X	X	X	X	
					FIELD BLANK	VIAL 1		X						

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded **T.A.T. AUTHORIZATION NUMBER.**

AUTHORIZATION NO. _____ **T.A.T. authorized by:** _____

Relinquished by (Signature)	Date Time	Received by (Signature)
[signature]	1:35 10/11	[signature]
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature) [signature]	Date Time 1700 11/9/00	Received for Laboratory by: (Signature) [signature]

☐ Fax to (phone) _____

Results needed _____

PO# _____

AMRO Project No. 001123

Seal Intact? Yes No N/A

Send Results to: [illegible]

Remarks

White: Lab copy Yellow: Accompanies report Pink: Client copy

NO. 453 P. 7

SAMPLE RECEIPT CHECKLIST

AMRO Environmental Laboratories Corporation

SAMPLE RECEIPT CHECKLIST

Merrimack, NH 03054 (603) 424-2022

Client: CDM
Project Name: RI AL TF GREEN AIRPORT
Via: (circle one) Fed Ex., UPS, (AMRO Courier,)
Hand Del., Other Courier, Other:

AMRO ID: 001123
Date Rec.: 11-10-00
Date Due: 11-22-00

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Army Samples received in individual plastic bags?			✓	
2. Custody Seals present?			✓	
3. Custody Seals Intact?			✓	
4. Air Bill included in folder if received?	✓			
5. Is COC included with samples?	✓			
6. Is COC signed and dated by client?				
7. Laboratory receipt temperature. TEMP = 30				
Samples rec. with ice ✓ ice packs ___ neither ___				
8. Were samples received the same day they were sampled?		✓		
Is client temperature 4°C ± 2°C?	✓			
If no obtain authorization from the client for the analyses.				
Client authorization from: Date: Obtained by:				
9. Is the COC filled out correctly and completely?	✓			
10. Does the info on the COC match the samples?	✓			
11. Were samples rec. within holding time?	✓			
12. Were all samples properly labeled?	✓			
13. Were all samples properly preserved?	✓			
14. Were proper sample containers used?	✓			
15. Were all samples received intact? (none broken or leaking)			✓	
16. Were VOA vials rec. with no air bubbles?	✓			
17. Were the sample volumes sufficient for requested analysis?	✓			
18. Were all samples received?				
19. VPH and VOA Soils only:				
Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)				
Sampling Method VOA (circle one): (M=Methanol,) SB=Sodium Bisulfate, E=EnCore, B=Bulk				
If M or SB:				
Does preservative cover the soil?	✓			
If NO then client must be faxed.				
Does preservation level come close to the fill line on the vial?	✓			
If NO then client must be faxed.				
Were vials provided by AMRO?	✓			
If NO then weights MUST be obtained from client				
Was dry weight aliquot provided?		✓		
If NO then fax client and inform the VOA lab ASAP.				
20. Subcontracted Samples:			✓	
What samples sent:				
Where sent:				
Date:				
Analysis:				
TAT:				
21. Information entered into:				
Internal Tracking Log?	✓			
Dry Weight Log?	✓			
Client Log?	✓			
Composite Log?			✓	
Filtration Log?			✓	

Received By: CB Date: 11-10-00 Logged in By: ST/CB Date: 11/14-15/00
Labeled By: ST/CB Date: 11/14-15/00 Checked By: MG Date: 11/15/00

NA= Not Applicable

RECEIVED TIME NOV.30. 5:48PM

STATE CERTIFICATE

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF HEALTH

Safe and Healthy Lives in Safe and Healthy Communities

April 24, 2000

APR 2 [illegible]

Dear Laboratory Director:

Retain this letter for your records.

This letter is to inform you that there has been legislative changes made in the laboratory licensure renewal cycle. The laboratory license expiration date has been changed to December 30, of the appropriate year.

Therefore, your current license will remain in effect until December 30, 2000.

You will receive a new license renewal form approximately 8 weeks before your license is due to expire.

If you have any questions regarding the new license renewal format, please call me at (401) 222-1999.

Sincerely,

Ewa King

Ewa King, Ph.D.
Certification Officer

CHAPIN BUILDING LABORATORIES (401) 222-5600
50 Orms Street, Providence, RI 02904-2285
Fax: (401) 222-6985 - Hearing/Speech Impaired, Call 1-800-745-5555 (TTY)
Web Site: www.health.state.ri.us

CASE NARRATIVE

AMTL

CASE NARRATIVE
0011123

GENERAL

1. No QC deviations were observed.

GC/MS-VOLATILES

1. The method blank-11/15/00 contained sec-Butylbenzene at 14µg/Kg below the reporting limit of 25µg/Kg.

2. No other QC deviations were observed.

GC/MS-SEMIVOLATILES

1. The laboratory control sample LCS-3181 had all %R's within laboratory control limits with the following exception:

    1.1 The Acenaphthene recovered below the laboratory control limits (55-95%) at 53.5%.

2. No other QC deviations were observed.

GC-ECD-PESTICIDES

1. The closing continuing calibration verification standard (CCV) analyzed on 11/17/00 had the compounds 4,4-DDT and Methoxychlor outside the acceptance criteria (±15%).

2. No other QC deviations were observed.

GC/ECD-PCB

1. No QC deviations were observed.

METALS – SOIL

1. Batch QC sample (0011131-01B) had Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries outside the acceptance limits for Aluminum as well as Matrix Spike (MS) recovery outside the acceptance limits for Iron. These failures were due to high concentration of Aluminum and Iron in sample relative to spike concentration.

2. Laboratory Control Sample (LCS) recoveries for all analytes were within acceptance limits.

3. No other QC deviations were observed.

WET CHEMISTRY

1. No QC deviations were observed.

GC/MS VOLATILES

SW-846 METHOD 8260B/MEDIUM LEVEL

SAMPLE RESULTS

AMRO Environmental Laboratories Corp.

Date: *28-Nov-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011123
Project: RIAC TF GREEN AIRPORT
Lab ID: 0011123-01A

Client Sample ID: MW-10 S-3
Collection Date: 11/9/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: LN
Dichlorodifluoromethane	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Chloromethane	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Vinyl chloride	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Chloroethane	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Bromomethane	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Trichlorofluoromethane	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Acetone	ND	390		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1-Dichloroethene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Carbon disulfide	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Methylene chloride	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
Methyl tert-butyl ether	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
trans-1,2-Dichloroethene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1-Dichloroethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
2-Butanone	ND	390		µg/Kg-dry	1	11/15/00 3:50:00 PM
2,2-Dichloropropane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
cis-1,2-Dichloroethene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Chloroform	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Bromochloromethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1,1-Trichloroethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1-Dichloropropene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Carbon tetrachloride	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2-Dichloroethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Benzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Trichloroethene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2-Dichloropropane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Bromodichloromethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Dibromomethane	ND	390		µg/Kg-dry	1	11/15/00 3:50:00 PM
4-Methyl-2-pentanone	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
cis-1,3-Dichloropropene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Toluene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
trans-1,3-Dichloropropene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1,2-Trichloroethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2-Dibromoethane	ND	390		µg/Kg-dry	1	11/15/00 3:50:00 PM
2-Hexanone	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,3-Dichloropropane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Tetrachloroethene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Dibromochloromethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Chlorobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1,1,2-Tetrachloroethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 28-Nov-00

CLIENT: Camp Dresser and McKee
Lab Order: 0011123
Project: RIAC TF GREEN AIRPORT
Lab ID: 0011123-01A

Client Sample ID: MW-10 S-3
Collection Date: 11/9/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
m,p-Xylene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
o-Xylene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Styrene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Bromoform	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Isopropylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,1,2,2-Tetrachloroethane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2,3-Trichloropropane	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Bromobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
n-Propylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
2-Chlorotoluene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
4-Chlorotoluene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,3,5-Trimethylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
tert-Butylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2,4-Trimethylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
sec-Butylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
4-Isopropyltoluene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,3-Dichlorobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,4-Dichlorobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
n-Butylbenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2-Dichlorobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2-Dibromo-3-chloropropane	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2,4-Trichlorobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Hexachlorobutadiene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Naphthalene	ND	78		µg/Kg-dry	1	11/15/00 3:50:00 PM
1,2,3-Trichlorobenzene	ND	39		µg/Kg-dry	1	11/15/00 3:50:00 PM
Surr: Dibromofluoromethane	86.2	66-121		%REC	1	11/15/00 3:50:00 PM
Surr: 1,2-Dichloroethane-d4	90.8	64-125		%REC	1	11/15/00 3:50:00 PM
Surr: Toluene-d8	91.8	67-124		%REC	1	11/15/00 3:50:00 PM
Surr: 4-Bromofluorobenzene	85.6	62-119		%REC	1	11/15/00 3:50:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 28-Nov-00

CLIENT: Camp Dresser and McKee
Lab Order: 0011123
Project: RIAC TF GREEN AIRPORT
Lab ID: 0011123-02A

Client Sample ID: TRIP BLANK
Collection Date: 11/9/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVE	**SW8260B**					Analyst: LN
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Chloromethane	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Chloroethane	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Bromomethane	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Acetone	ND	250		µg/Kg	1	11/15/00 3:14:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
2-Butanone	ND	250		µg/Kg	1	11/15/00 3:14:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Chloroform	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Benzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/15/00 3:14:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Toluene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/15/00 3:14:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
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E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *28-Nov-00*

CLIENT: Camp Dresser and McKee
Client Sample ID: TRIP BLANK

Lab Order: 0011123
Project: RIAC TF GREEN AIRPORT
Collection Date: 11/9/00
Matrix: SOIL

Lab ID: 0011123-02A

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
o-Xylene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Styrene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Bromoform	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2-Dichlorobenzene	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
1,2-Dibromo-3-chloropropane	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
Hexachlorobutadiene	ND	50		µg/Kg	1	11/15/00 3:14:00 PM
Naphthalene	ND	25		µg/Kg	1	11/15/00 3:14:00 PM
1,2,3-Trichlorobenzene	96.1	66-121		%REC	1	11/15/00 3:14:00 PM
Surr: Dibromofluoromethane	102	64-125		%REC	1	11/15/00 3:14:00 PM
Surr: 1,2-Dichloroethane-d4	103	67-124		%REC	1	11/15/00 3:14:00 PM
Surr: Toluene-d8	93.3	62-119		%REC	1	11/15/00 3:14:00 PM
Surr: 4-Bromofluorobenzene						

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

AMRO Environmental Laboratories Corp.

Date: 25-Nov-00

CLIENT: Camp Dresser and McKee
Work Order: 0011123
Project: RIAC TF GREEN AIRPORT

QC SUMMARY REPORT
Method Blank

Sample ID **MBLK-11/15/00** Batch ID: **R5898** Test Code: **SW8260B** Units: **µg/Kg** Analysis Date **11/15/00 2:38:00 PM** Prep Date **11/15/00**

Client ID: Run ID: **V-1_001115A** SeqNo: **89148**

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
Dichlorodifluoromethane	ND	50	µg/Kg									
Chloromethane	ND	50	µg/Kg									
Vinyl chloride	ND	25	µg/Kg									
Chloroethane	ND	50	µg/Kg									
Bromomethane	ND	50	µg/Kg									
Trichlorofluoromethane	ND	50	µg/Kg									
Acetone	ND	250	µg/Kg									
1,1-Dichloroethene	ND	25	µg/Kg									
Carbon disulfide	ND	50	µg/Kg									
Methylene chloride	ND	50	µg/Kg									
Methyl tert-butyl ether	ND	25	µg/Kg									
trans-1,2-Dichloroethene	ND	25	µg/Kg									
1,1-Dichloroethane	ND	25	µg/Kg									
2-Butanone	ND	250	µg/Kg									
2,2-Dichloropropane	ND	25	µg/Kg									
cis-1,2-Dichloroethene	ND	25	µg/Kg									
Chloroform	ND	25	µg/Kg									
Bromochloromethane	ND	25	µg/Kg									
1,1,1-Trichloroethane	ND	25	µg/Kg									
1,1-Dichloropropene	ND	25	µg/Kg									
Carbon tetrachloride	ND	25	µg/Kg									
1,2-Dichloroethane	ND	25	µg/Kg									
Benzene	ND	25	µg/Kg									
Trichloroethene	ND	25	µg/Kg									
1,2-Dichloropropane	ND	25	µg/Kg									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

AMRO Environmental Laboratories Corp.

Date: 28-Nov-00

CLIENT: Camp Dresser and McKee
Work Order: 0011123
Project: RIAC TF GREEN AIRPORT

QC SUMMARY REPORT
Method Blank

Bromodichloromethane	ND	25	µg/Kg
Dibromomethane	ND	25	µg/Kg
4-Methyl-2-pentanone	ND	250	µg/Kg
cis-1,3-Dichloropropene	ND	25	µg/Kg
Toluene	ND	25	µg/Kg
trans-1,3-Dichloropropene	ND	25	µg/Kg
1,1,2-Trichloroethane	ND	25	µg/Kg
1,2-Dibromoethane	ND	25	µg/Kg
2-Hexanone	ND	250	µg/Kg
1,3-Dichloropropane	ND	25	µg/Kg
Tetrachloroethene	ND	25	µg/Kg
Dibromochloromethane	ND	25	µg/Kg
Chlorobenzene	ND	25	µg/Kg
1,1,1,2-Tetrachloroethane	ND	25	µg/Kg
Ethylbenzene	ND	25	µg/Kg
m,p-Xylene	ND	25	µg/Kg
o-Xylene	ND	25	µg/Kg
Styrene	ND	25	µg/Kg
Bromoform	ND	25	µg/Kg
Isopropylbenzene	ND	25	µg/Kg
1,1,2,2-Tetrachloroethane	ND	25	µg/Kg
1,2,3-Trichloropropane	ND	25	µg/Kg
Bromobenzene	ND	25	µg/Kg
n-Propylbenzene	ND	25	µg/Kg
2-Chlorotoluene	ND	25	µg/Kg
4-Chlorotoluene	ND	25	µg/Kg
1,3,5-Trimethylbenzene	ND	25	µg/Kg
tert-Butylbenzene	ND	25	µg/Kg
1,2,4-Trimethylbenzene	ND	25	µg/Kg
sec-Butylbenzene	14.5	25	µg/Kg
4-Isopropyltoluene	ND	25	µg/Kg

J

Qualifiers: ND - Not Detected at the Reporting Limit
S - Spike Recovery outside accepted recovery limits
B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: *28-Nov-00*

CLIENT: Camp Dresser and McKee
Work Order: 0011123
Project: RIAC TF GREEN AIRPORT

QC SUMMARY REPORT
Method Blank

1,3-Dichlorobenzene	ND	25	µg/Kg						
1,4-Dichlorobenzene	ND	25	µg/Kg						
n-Butylbenzene	ND	25	µg/Kg						
1,2-Dichlorobenzene	ND	25	µg/Kg						
1,2-Dibromo-3-chloropropane	ND	50	µg/Kg						
1,2,4-Trichlorobenzene	ND	25	µg/Kg						
Hexachlorobutadiene	ND	25	µg/Kg						
Naphthalene	ND	50	µg/Kg						
1,2,3-Trichlorobenzene	ND	25	µg/Kg						
Surr: Dibromofluoromethane	2234	25	µg/Kg	2500	0	89.3	66	121	0
Surr: 1,2-Dichloroethane-d4	2439	25	µg/Kg	2500	0	97.6	64	125	0
Surr: Toluene-d8	2277	25	µg/Kg	2500	0	91.1	67	124	0
Surr: 4-Bromofluorobenzene	2270	25	µg/Kg	2500	0	90.8	62	119	0

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE

AMRO Environmental Laboratories Corp.

Date: 28-Nov-00

CLIENT: Camp Dresser and McKee
Work Order: 0011123
Project: RIAC TF GREEN AIRPORT

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID 0011123-01AMS **Batch ID:** R5898 **Test Code:** SW8260B **Units:** µg/Kg-dry **Analysis Date** 11/15/00 12:15:00 PM **Prep Date** 11/9/00
Client ID: MW-10 S-3 **Run ID:** V-1_001115A **SeqNo:** 89146

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	883.5	39	µg/Kg-dry	781.2	0	113	61	140	0			
Benzene	904.6	39	µg/Kg-dry	781.2	0	116	71	123	0			
Trichloroethene	770.6	39	µg/Kg-dry	781.2	0	98.6	72	124	0			
Toluene	834.7	39	µg/Kg-dry	781.2	0	107	71	126	0			
Chlorobenzene	773.7	39	µg/Kg-dry	781.2	0	99	73	126	0			
Surr: Dibromofluoromethane	3431	39	µg/Kg-dry	3906	0	87.8	66	121	0			
Surr: 1,2-Dichloroethane-d4	3531	39	µg/Kg-dry	3906	0	90.4	64	125	0			
Surr: Toluene-d8	3627	39	µg/Kg-dry	3906	0	92.9	67	124	0			
Surr: 4-Bromofluorobenzene	3297	39	µg/Kg-dry	3906	0	84.4	62	119	0			

Sample ID 0011123-01AMSD **Batch ID:** R5898 **Test Code:** SW8260B **Units:** µg/Kg-dry **Analysis Date** 11/15/00 12:50:00 PM **Prep Date** 11/9/00
Client ID: MW-10 S-3 **Run ID:** V-1_001115A **SeqNo:** 89147

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	825.7	39	µg/Kg-dry	781.2	0	106	61	140	883.5	6.76	25	
Benzene	887.8	39	µg/Kg-dry	781.2	0	114	71	123	904.6	1.87	25	
Trichloroethene	781.2	39	µg/Kg-dry	781.2	0	100	72	124	770.6	1.36	25	
Toluene	839.7	39	µg/Kg-dry	781.2	0	108	71	126	834.7	0.606	25	
Chlorobenzene	773	39	µg/Kg-dry	781.2	0	99	73	126	773.7	0.101	25	
Surr: Dibromofluoromethane	3407	39	µg/Kg-dry	3906	0	87.2	66	121	0	0	0	
Surr: 1,2-Dichloroethane-d4	3478	39	µg/Kg-dry	3906	0	89	64	125	0	0	0	
Surr: Toluene-d8	3549	39	µg/Kg-dry	3906	0	90.9	67	124	0	0	0	
Surr: 4-Bromofluorobenzene	3246	39	µg/Kg-dry	3906	0	83.1	62	119	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

RL - Reporting Limit: defined as the lowest concentration the laboratory can accurately quantitate.

LABORATORY CONTROL SAMPLE

AMRO Environmental Laboratories Corp.

Date: 28-Nov-00

CLIENT: Camp Dresser and McKee
Work Order: 0011123
Project: RIAC TF GREEN AIRPORT

QC SUMMARY REPORT
Laboratory Control Spike

Sample ID LCS-11/15/00 **Batch ID:** R5898 **Test Code:** SW8260B **Units:** µg/Kg **Analysis Date** 11/15/00 10:55:00 AM **Prep Date** 11/15/00

Client ID: **Run ID:** V-1_001115A **SeqNo:** 89145

Analyte	QC Sample Result	RL	Units	QC Spike Amount	Original Sample Result	%REC	LowLimit	HighLimit	Original Sample or MS Result	%RPD	RPDLimit	Qua
1,1-Dichloroethene	456.2	25	µg/Kg	500	0	91.2	66	138	0			
Benzene	521	25	µg/Kg	500	0	104	76	118	0			
Trichloroethene	447	25	µg/Kg	500	0	89.4	72	123	0			
Toluene	496.8	25	µg/Kg	500	0	99.4	74	119	0			
Chlorobenzene	478.8	25	µg/Kg	500	0	95.8	76	125	0			
Surr: Dibromofluoromethane	2308	25	µg/Kg	2500	0	92.3	66	121	0			
Surr: 1,2-Dichloroethane-d4	2484	25	µg/Kg	2500	0	99.4	64	125	0			
Surr: Toluene-d8	2302	25	µg/Kg	2500	0	92.1	67	124	0			
Surr: 4-Bromofluorobenzene	2260	25	µg/Kg	2500	0	90.4	62	119	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
RL - Reporting Limit: defined as the lowest concentration the laboratory can accurately quantitate.

GC/MS SEMIVOLATILES-SOIL

METHOD 8270C

AMRO Environmental Laboratories Corp.

Date: *28-Nov-00*

CLIENT: Camp Dresser and McKee
Lab Order: 0011123
Project: RIAC TF GREEN AIRPORT
Lab ID: 0011123-01B

Client Sample ID: MW-10 S-3
Collection Date: 11/9/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
4-Chlorophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Fluorene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
4-Nitroaniline	ND	580		µg/Kg-dry	1	11/19/00 6:37:00 PM
4,6-Dinitro-2-methylphenol	ND	580		µg/Kg-dry	1	11/19/00 6:37:00 PM
N-Nitrosodiphenylamine	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
4-Bromophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Hexachlorobenzene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Pentachlorophenol	ND	580		µg/Kg-dry	1	11/19/00 6:37:00 PM
Phenanthrene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Anthracene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Carbazole	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Di-n-butyl phthalate	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Fluoranthene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Pyrene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Butyl benzyl phthalate	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Bis(2-ethylhexyl)phthalate	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
3,3'-Dichlorobenzidine	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Benz(a)anthracene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Chrysene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Di-n-octyl phthalate	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Benzo(b)fluoranthene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Benzo(k)fluoranthene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Benzo(a)pyrene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Dibenz(a,h)anthracene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Indeno(1,2,3-cd)pyrene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Benzo(g,h,i)perylene	ND	290		µg/Kg-dry	1	11/19/00 6:37:00 PM
Surr: 2-Fluorophenol	61.0	27-98		%REC	1	11/19/00 6:37:00 PM
Surr: Phenol-d5	61.0	31-102		%REC	1	11/19/00 6:37:00 PM
Surr: Nitrobenzene-d5	57.6	33-97		%REC	1	11/19/00 6:37:00 PM
Surr: 2-Fluorobiphenyl	60.6	42-100		%REC	1	11/19/00 6:37:00 PM
Surr: 2,4,6-Tribromophenol	65.4	40-117		%REC	1	11/19/00 6:37:00 PM
Surr: 4-Terphenyl-d14	74.9	44-109		%REC	1	11/19/00 6:37:00 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

METHOD BLANK

LEGEND

- VP-14 — VAPOR PROBE
- EDGE OF WETLAND
- TP-1 — DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY TCM SERVICES, INC.,
- SB-4 — DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING DRILLED BY NEW HAMPSHIRE BORING INC.
- APPROXIMATE LIMITS OF PROPOSED BUILDINGS
- A — A' — LOCATION AND ORIENTATION OF GEOLOGIC CROSS SECTION A-A' SHOWN ON FIGURE 2-2
- EDGE OF WATER

NOTES

1.) BASE PLAN PREPARED FROM A DRAWING ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY OF LANDFILL AREA SOUTH OF T.F. GREEN AIRPORT", PREPARED BY BRYANT ASSOCIATES, INC., DATED JANUARY, 2001

2.) TEST PITS TP-1 THROUGH TP-23 WERE EXCAVATED BY TCM SERVICES' INC. OF BELLINGHAM, MASSACHUSETTS, ON OCTOBER 18 & 19 2000

3.) TEST BORING WERE DRILLED BY NEW HAMPSHIRE TEST BORING INC. OF DERRY, NEW HAMPSHIRE BETWEEN NOVEMBER 6 AND NOVEMBER 22, 2000

4.) TEST PITS AND TEST BORINGS WERE MONITORED BY A CDM REPRESENTATIVE AND WERE LOCATED BY FIELD SURVEY.

5.) ELEVATIONS ARE IN FEET AND REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.

6.) HORIZONTAL DATUM REFERS TO NORTH AMERICA DATUM (NAD) '83(1996) AS REFEREED TO THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM

1" = 100'
50 0 100

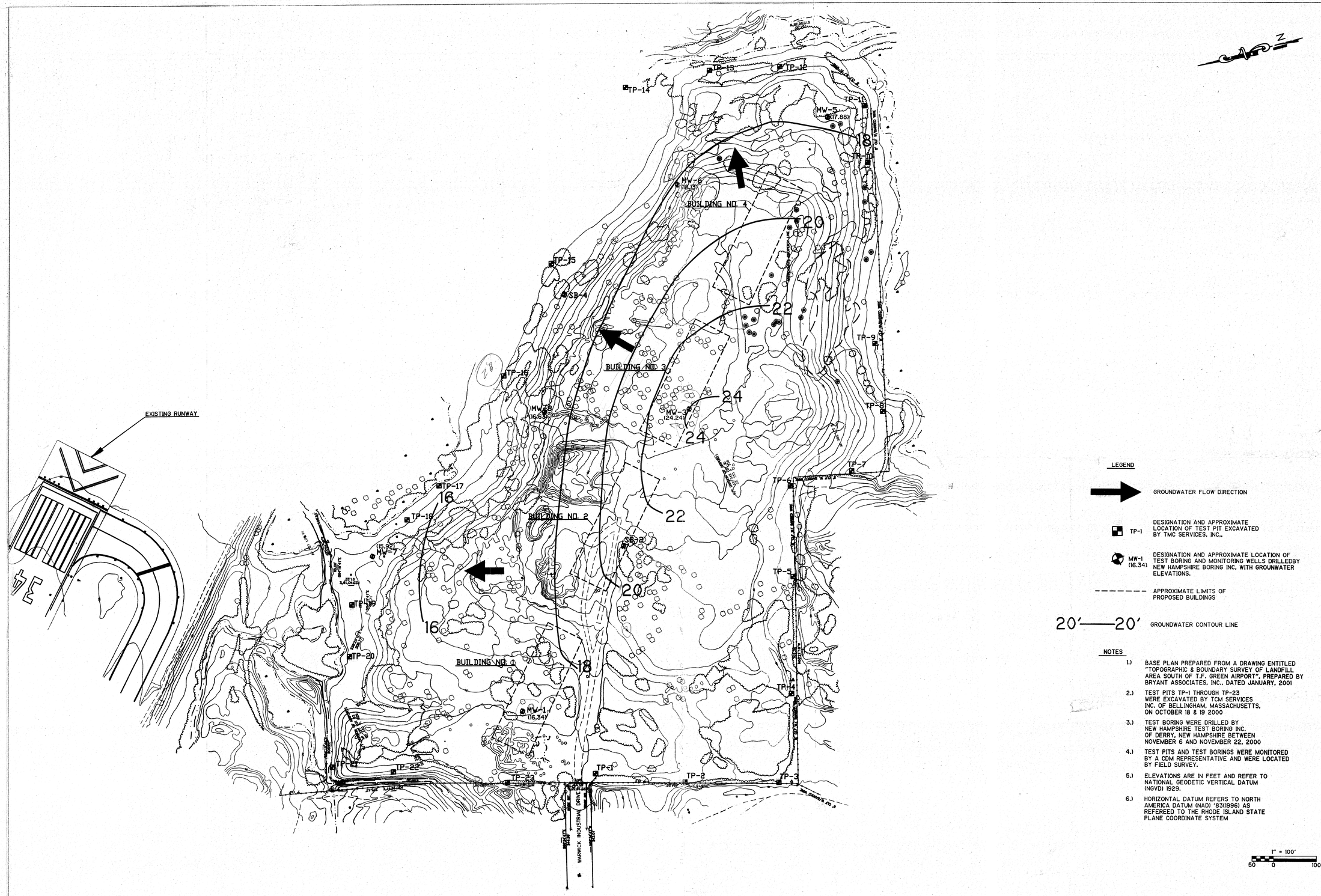
CDM
environmental engineers, scientists, planners, & management consultants

LIMITED ENVIROMENTAL SITE INVESTIGATION REPORT
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

SUBSURFACE EXPLORATION LOCATION PLAN

FIGURE 1-2

O:\CAM_IHW\14815\FIG1-2.DWG



CDM
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LIMITED ENVIROMENTAL SITE INVESTIGATION REPORT
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

GROUNDWATER CONTOUR MAP

FIGURE 2-1

O:\CAM_IHW\14815\FIG2-1.DWG

TABLE 2-2

SUMMARY OF TEST BORING EXPLORATIONS
FORMER TRUK-AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Exploration No.	Approx. Ground Surface Elevation	Exploration Depth (feet)	Strata Thickness (ft)			Depth to Groundwater (feet)
			Waste	Peat	Sand & Gravel	
MW-1	29.5	52	20	NE	>32	14.5
SB-2	41.8	62	30	NE	>32	25
MW-3	43.3	77	40	4	>33	27
SB-4	17.0	62	30	NE	>32	2.5
MW-5	28.5	72	40	NE	>32	13.5
MW-6	31.0	72	32	NE	>42	20
MW-7	19.0	32	NE	NE	>32	6
MW-8	31.5	62	30	NE	>32	16

Notes:

1. Elevations are in feet and refer to NGVD 1929.

NE Indicates strata or groundwater not encountered

> Indicates strata not fully penetrated

Table 2-3
Laboratory Analysis Results of Soil Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Boring/Well Identification Sample Depth (feet)	MW-1 20-22	MW-3 70-72	MW-5 45-47	MW-6 50-52	MW-7 10-12	MW-8 45-47	RIDEM I/C DEC (mg/kg)	RIDEM Leachability Criteria (mg/kg)
Volatile Organic Compounds (mg/kg)								
Chlorobenzene	0.09	0.55	ND	ND	ND	ND	10,000	100
m,p-Xylene	0.037	0.29	ND	ND	ND	0.035	10,000	10,000
o-Xylene	ND	0.044	ND	ND	ND	ND	10,000	10,000
Trichloroethene	ND	0.039	ND	ND	ND	ND	520	20
Ethylbenzene	ND	0.082	ND	ND	ND	ND	10,000	62
Isopropylbenzene	ND	0.046	ND	ND	ND	ND	10,000	NE
1,3,5-Trimethylbenzene	ND	0.036	ND	ND	ND	ND	NE	NE
1,2,4-Trimethylbenzene	ND	0.13	ND	ND	ND	ND	NE	NE
Semi-Volatile Organic Compounds (mg/kg)								
Bis(2-ethylhexyl)phthalate	0.47	ND	4.5	ND	ND	ND	410	NE

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
I/C DEC - Industrial/Commercial Direct Exposure Criteria

Table 2-3
Laboratory Analysis Results of Soil Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Boring/Well Identification Sample Depth (feet)	MW-1 20-22	MW-3 70-72	MW-5 45-47	MW-6 50-52	MW-7 10-12	MW-8 45-47	RIDEM I/C DEC (mg/kg	RIDEM Leachability Criteria (mg/kg)
TAL Metals (mg/kg)							(mg/kg)	
Aluminum	8600	5700	2900	5200	7400	5900	NE	NE
Antimony	ND	ND	ND	ND	ND	ND	820	NE
Arsenic	17	ND	ND	ND	9.1	6.8	3.8	NE
Barium	ND	ND	ND	ND	ND	ND	10,000	NE
Beryllium	ND	ND	ND	ND	ND	ND	1.3	NE
Cadmium	ND	ND	ND	ND	ND	ND	1000	NE
Chromium	17	8.0	6.7	13	13	10	10,000	NE
Cobalt	10	7.2	ND	ND	12	ND	NE	NE
Copper	17	11	9.5	7.7	24	12	10,000	NE
Iron	36000	14000	8300	9900	21000	16000	NE	NE
Lead	9.6	7.2	9.7	4.8	15	6.9	500	NE
Magnesium	4400	2200	1500	1700	3500	3200	NE	NE
Manganese	280	160	170	230	390	180	10,000	NE
Nickel	19	16	7.4	7.1	20	14	10,000	NE
Potassium	860	400	690	1500	770	570	NE	NE
Selenium	ND	ND	ND	ND	ND	ND	10,000	NE
Silver	ND	ND	ND	ND	ND	ND	10,000	NE
Thallium	ND	ND	ND	ND	ND	ND	140	NE
Vanadium	11	9.3	ND	13	14	8.9	10,000	NE
Zinc	51	61	22	30	44	32	10,000	NE
Mercury	ND	ND	ND	ND	ND	ND	610	NE
Total Petroleum Hydrocarbons (ug/kg)	ND	ND	ND	ND	54	ND	2500	NE
Total Organic Carbon (ug/kg)	5600	2100	2100	850	12,000	4600	NE	NE
Percent Moisture	13.8	10.4	13.5	19.3	18	8.7	NE	NE
Pesticides (ug/kg)	ND	ND	ND	ND	ND	ND	NE	NE
PCBs (ug/kg)	ND	ND	ND	ND	ND	ND	10,000	10000

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
I/C DEC - Industrial/Commercial Direct Exposure Criteria
Shaded values exceed RIDEM criteria, although the observed arsenic concentrations may be attributable to background conditions.

Table 2-4
Laboratory Analysis Results of Groundwater Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Monitoring Well Identification	MW-1	MW-3	MW-5	MW-6	MW-7	MW-8	MW-8*	RIDEM GB Groundwater Objective (ug/l)
Volatile Organic Compounds (ug/l)								
2-Butanone	ND	1800	26	12	ND	100	NA	NE
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	590	NA	NE
Acetone	16	140	39	19	10	270	NA	NE
Vinyl chloride	7.0	28	ND	ND	ND	ND	NA	NE
Methylene chloride	ND	610	ND	ND	ND	ND	NA	NE
Dichlorodifluoromethane	ND	ND	ND	8.0	ND	ND	NA	NE
Chloroethane	1600	11000	11	ND	63	370	NA	NE
1,1-Dichloroethene	6.3	2700	ND	ND	ND	ND	NA	7
cis-1,2-Dichloroethene	9.1	99	2.8	ND	ND	ND	NA	2400
1,2-Dichloroethane	ND	75	ND	ND	ND	ND	NA	110
1,1,1-Trichloroethene	ND	710	ND	ND	ND	ND	NA	3100
Naphthalene	67	170	45	52	ND	55	NA	NE
4-Isopropyltoluene	2.7	25	ND	ND	ND	ND	NA	NE
Toluene	2.4	1700	10	2.8	ND	1300	NA	1700
m,p-Xylene	550	8200	490	99	ND	8300	NA	NE
o-Xylene	ND	2300	6.4	3.5	ND	1300	NA	NE
Benzene	23	44	15	1	5.0	27	NA	140
Isopropylbenzene	6.4	52	7.2	7.3	ND	ND	NA	NE
n-Propylbenzene	6.1	90	8.9	10	ND	ND	NA	NE
1,3,5-Trimethylbenzene	15	190	15	7.9	ND	23	NA	NE
1,2,4-Trimethylbenzene	53	660	73	84	ND	78	NA	NE
sec-Butylbenzene	ND	30	ND	ND	ND	ND	NA	NE
Ethylbenzene	120	2500	18	4.4	ND	2100	NA	1600
Chlorobenzene	110	ND	100	32	ND	ND	NA	3200
1,4-Dichlorobenzene	21	ND	18	20	ND	ND	NA	NE
1,2-Dichlorobenzene	22	ND	4.0	ND	ND	ND	NA	NE
Semi-Volatile Organic Compounds (ug/l)								
Naphthalene	22	130	34	20	ND	40	42	NE
2-Methylnaphthalene	ND	11	ND	ND	ND	ND	ND	NE
Phenol	ND	16	ND	ND	ND	ND	ND	NE
2-Methylphenol	ND	11	ND	ND	ND	ND	ND	NE
4-Methylphenol	ND	190	ND	ND	ND	17	18	NE
2,4-Dimethylphenol	ND	23	ND	ND	ND	25	20	NE
3-Nitroaniline	ND	ND	ND	ND	ND	1600	1400	NE
Diethyl phthalate	ND	100	ND	ND	ND	37	35	NE
Bis(2-ethylhexyl)phthalate	ND	50	13	11	ND	ND	ND	NE

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
* - Field Duplicate
Shaded values are at concentrations at or above RIDEM groundwater standards.

Table 2-4
Laboratory Analysis Results of Groundwater Samples
Former Truk-Away Landfill
T.F. Green Airport
Warwick, Rhode Island

Monitoring Well Identification Sample Depth (feet)	MW-1 20-22	MW-3 70-72	MW-5 45-47	MW-6 50-52	MW-7 10-12	MW-8 45-47	MW-8*	RIDEM GB Groundwater Objective (ug/l)*
TAL Metals (ug/l)								
Aluminum	2700	670	520	3200	NA	890	1300	NE
Antimony	ND	ND	ND	ND	NA	ND	ND	NE
Arsenic	58	ND	31	ND	NA	ND	28	NE
Barium	250	820	290	570	NA	520	480	NE
Beryllium	ND	ND	ND	ND	NA	ND	ND	NE
Cadmium	ND	ND	ND	ND	NA	ND	ND	NE
Chromium	ND	ND	ND	37	NA	16	26	NE
Cobalt	ND	ND	ND	ND	NA	ND	ND	NE
Copper	ND	ND	ND	ND	NA	ND	ND	NE
Iron	94,000	100,000	38,000	31,000	NA	86,000	100,000	NE
Lead	11	ND	ND	ND	NA	680	1200	NE
Magnesium	11,000	17,000	56,000	60,000	NA	22,000	15,000	NE
Manganese	1200	690	350	290	NA	1200	1600	NE
Nickel	ND	ND	50	130	NA	ND	ND	NE
Potassium	12,000	22,000	100,000	190,000	NA	31,000	18,000	NE
Selenium	ND	ND	ND	ND	NA	ND	ND	NE
Silver	ND	ND	ND	ND	NA	ND	ND	NE
Thallium	ND	ND	ND	ND	NA	ND	ND	NE
Vanadium	ND	ND	ND	ND	NA	ND	ND	NE
Zinc	36	590	130	850	NA	260	450	NE
Mercury	ND	ND	ND	ND	NA	0.50	0.86	NE
Chemical Oxygen Demand (mg/l)	78	370	240	520	69	260	280	NE
Total Dissolved Solids (mg/l)	510	920	1000	1900	560	710	530	NE
Alkalinity (mg/l as CaCO3)	400	720	1300	1800	300	750	580	NE
Nitrogen-Nitrate (mg/l)	ND	0.16	ND	0.62	0.21	ND	ND	NE
Chloride (mg/l)	30	160	190	650	210	73	36	NE
Sulfate (mg/l)	5.4	1.2	0.95	0.83	3	1.6	2.0	NE
Cyanide, Total (mg/l)	ND	ND	ND	ND	ND	ND	ND	NE
Pesticides (ug/l)								
alpha-BHC	0.011	ND	ND	ND	ND	ND	ND	NE
beta-BHC	0.0082	ND	ND	ND	ND	ND	ND	NE
delta-BHC	ND	ND	ND	ND	0.015	ND	ND	NE
4,4-DDE	0.055	0.060	ND	ND	ND	ND	ND	NE
4,4-DDD	ND	0.058	ND	ND	ND	ND	ND	NE
4,4-DDT	ND	0.220	ND	ND	ND	ND	ND	NE
gamma-Chlordane	ND	0.063	ND	0.038	ND	ND	ND	NE
alpha-Chlordane	ND	0.13	ND	ND	ND	ND	ND	NE
Dieldrin	ND	0.021	ND	ND	ND	ND	ND	NE
Endosulfan II	ND	0.084	ND	ND	ND	ND	ND	NE
PCBs (ug/l)								
Aroclor 1016	ND	ND	ND	ND	ND	0.27	ND	NE

ND=Not detected at or above the method detection limit
NA=Not analyzed
NE=None established
* - Field Duplicate
* Groundwater GB Objectives are only established for VOCs.

TABLE 2-5
SUMMARY OF GROUNDWATER ELEVATION DATA

FORMER TRUK-AWAY LANDFILL SITE
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

		December 13, 2000	
Well Identification	Casing Elevation (feet)	Depth to Water (Feet)	Water Table Elevation ^ (feet)
MW-1	33.1	16.76	16.34
MW-3	46.1	21.86	24.24
MW-5	33	15.12	17.88
MW-6	40.1	21.97	18.13
MW-7	20.6	4.68	15.92
MW-8	37.5	20.87	16.63

^ Elevations based on National Geoditical Vertical Datum.

TABLE 2-6
SUMMARY OF SOIL GAS READINGS

FORMER TRUK-AWAY LANDFILL SITE
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Vapor Probe	VOCs (ppm^)	Hydrogen Sulfide (ppm)	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Lower Explosive Limit (%)
VP-1	13.2	0.4	0.2	9.1	13.3	4
VP-2	0	6	59.7	38.4	2.1	Exceeded Instrument Limit
VP-3	15.5	0.1	0	1.3	20.6	0
VP-4	10	0.2	0	1.3	20.6	0
VP-5	0	0.4	14.5	8.5	13.9	292
VP-6	NR	NR	NR	NR	NR	NR
VP-7	9	0	0	0.2	20.8	0
VP-8	0	0.8	26.9	17.3	5.9	560
VP-9	1.7	0.3	3.9	9	11.7	76
VP-10	0	0.6	11.9	14.5	2.2	236
VP-11	7	0	0	0.1	19.8	0
VP-12	0	30	62.3	31	0.5	Exceeded Instrument Limit
VP-13	71.8	0.1	0	6.7	13.4	0
VP-14	23.8	0.1	0	6.1	14.8	0
VP-15	55.7	0.4	0	0.4	19.6	0
VP-16	0	3.7	66.4	33.4	0.3	Exceeded Instrument Limit

(1) No readings were collected at VP-6 due to wet conditions.
(2) Volatile organic compound (VOCs) readings were collected using a ThermoElectron Model 580B Organic Vapor Meter.
(3) Hydrogen sulfide readings were taken with an Interscan H2S Meter.
(4) All other readings were collected with a GEM 500 air monitoring device.

CDM

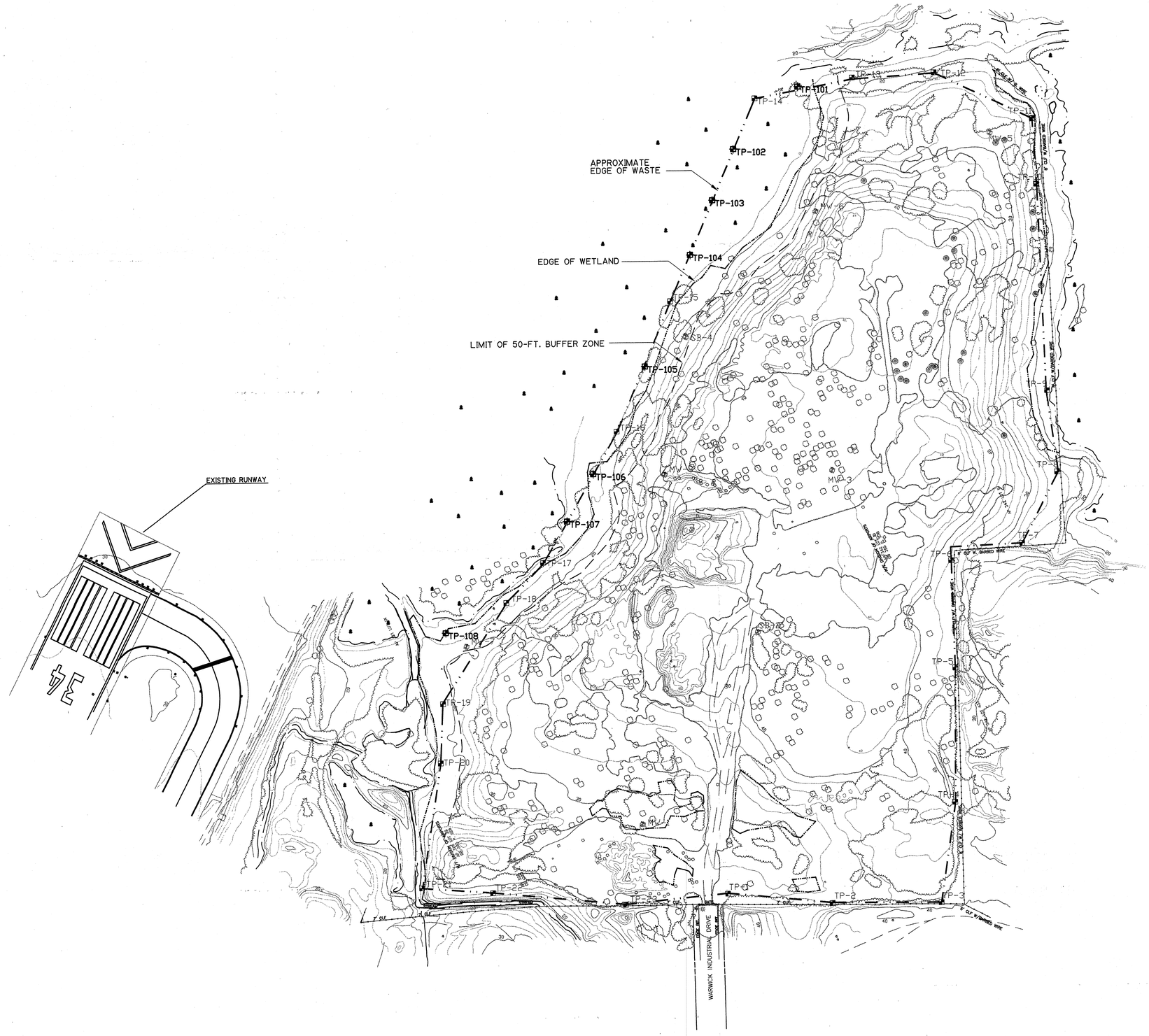
Preliminary Cost Estimate Report

Former Truk-Away Landfill Site
T. F. Green Airport
Warwick, Rhode Island

January 2002

Prepared by:

Camp Dresser & McKee Inc.
50 Hampshire Street
One Cambridge Place
Cambridge, Massachusetts 02139



LEGEND

TP-1	DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT(S) PREVIOUSLY EXCAVATED BY TMC SERVICES, INC. OF BELLINGHAM, MA.
SB-4	DESIGNATION AND APPROXIMATE LOCATION OF TEST BORING PREVIOUSLY DRILLED BY NEW HAMPSHIRE BORING INC.
TP-101	DESIGNATION AND APPROXIMATE LOCATION OF PROPOSED TEST PIT(S) TO BE EXCAVATED BY TMC SERVICES, INC. OF BELLINGHAM, MA.
	WETLAND/SWAMP SYMBOL
	EDGE OF WETLAND
	LIMIT OF 50 FT. BUFFER ZONE
	EDGE OF WATER
	APPROXIMATE EDGE OF WASTE

NOTES

1.) BASE PLAN PREPARED FROM A DRAWING ENTITLED "TOPOGRAPHIC & BOUNDARY SURVEY OF LANDFILL AREA SOUTH OF T.F. GREEN AIRPORT", PREPARED BY BRYANT ASSOCIATES, INC., DATED JANUARY, 2001

2.) TEST PITS TP-1 THROUGH TP-23 WERE EXCAVATED BY TMC SERVICES INC. OF BELLINGHAM, MASSACHUSETTS, ON OCTOBER 18 & 19 2000

3.) TEST BORING WERE DRILLED BY NEW HAMPSHIRE TEST BORING INC. OF DERRY, NEW HAMPSHIRE BETWEEN NOVEMBER 6 AND NOVEMBER 22, 2000

4.) TEST PITS AND TEST BORINGS WERE MONITORED BY A CDM REPRESENTATIVE AND WERE LOCATED BY FIELD SURVEY.

5.) ELEVATIONS ARE IN FEET AND REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD) 1929.

6.) HORIZONTAL DATUM REFERS TO NORTH AMERICA DATUM (NAD) '83(1996) AS REFEREED TO THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM

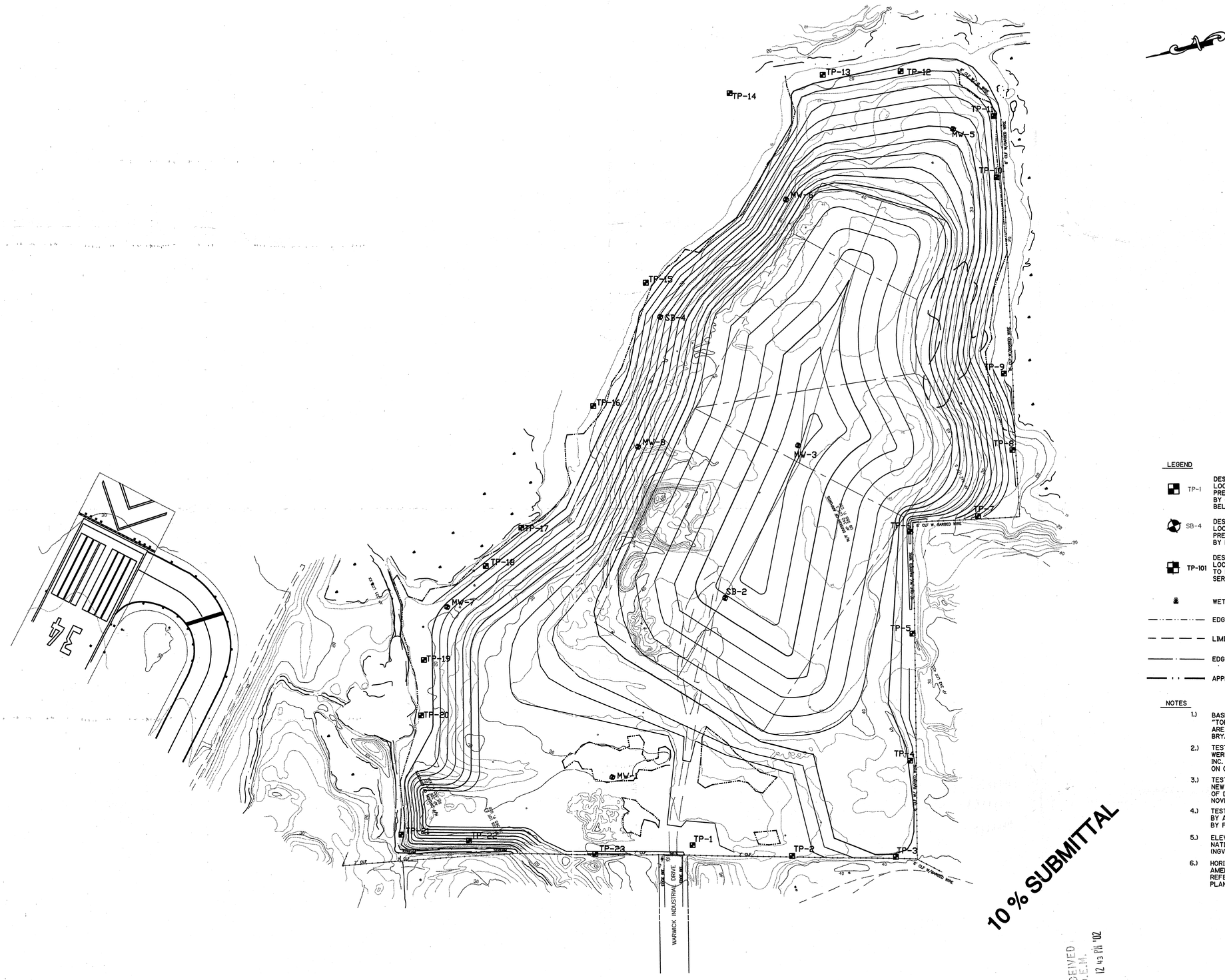
1" = 100'
50 0 100

CDM
environmental engineers, scientists, planners, & management consultants

FORMER TRUK-AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

PROPOSED ADDITIONAL TEST PIT LOCATION PLAN

FIGURE 1



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1" = 100'
50 0 100

10 % SUBMITTAL

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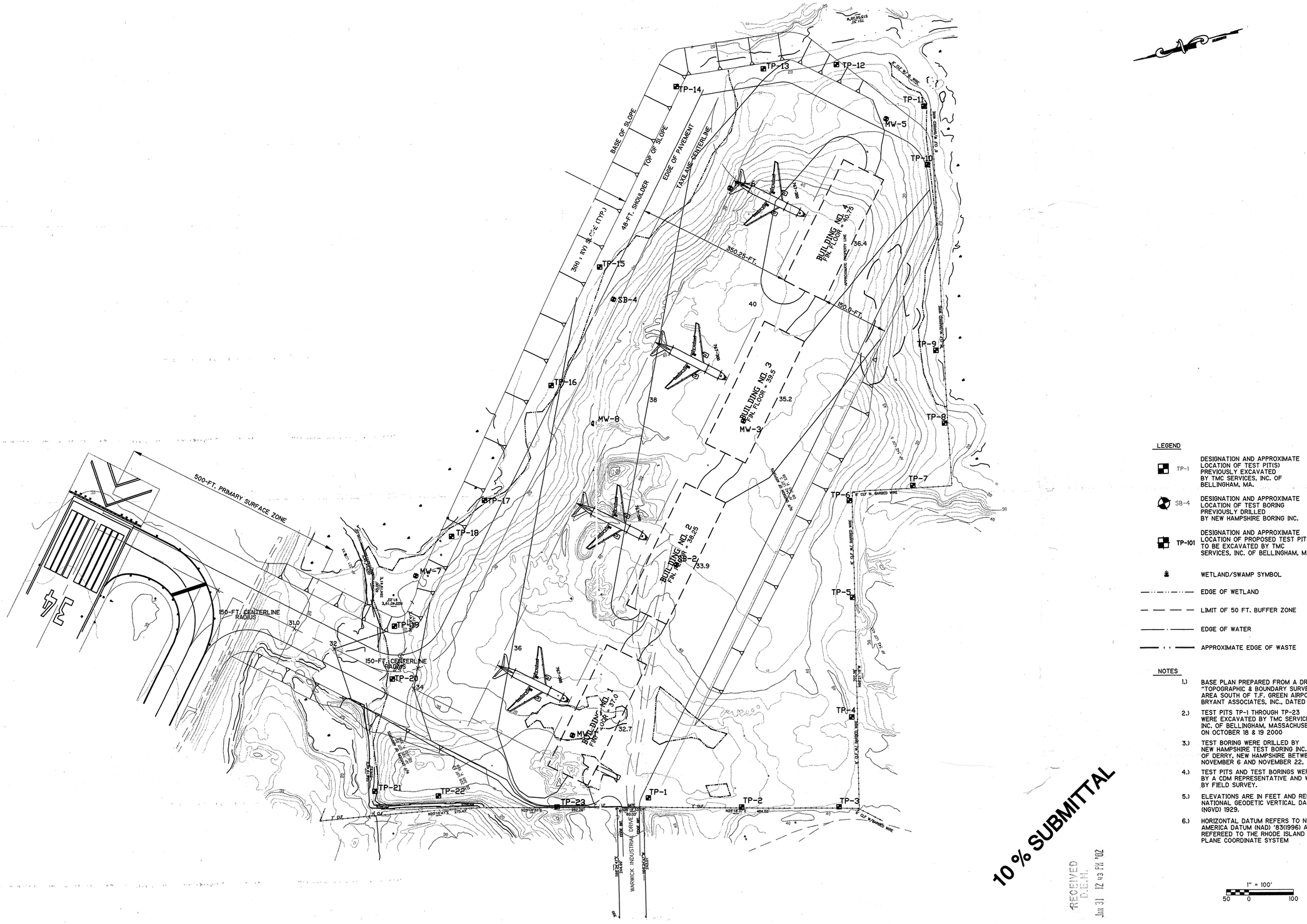
CONCEPTUAL DESIGN REPORT
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

ALTERNATIVE 1
LANDFILL CLOSURE

FIGURE 2-1



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1" = 100'
50 0 100

10 % SUBMITTAL

RECEIVED
D.E.M.
JAN 31 12 43 PM '02

CDM
environmental engineers, scientists, planners, & management consultants

CONCEPTUAL DESIGN REPORT
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

ALTERNATIVE 3
LANDFILL CLOSURE & CARGO BUILDINGS

FIGURE 2-3

CDM
One Cambridge Place, 50 Hampshire Street
Cambridge, Massachusetts 02139
tel: 617 452-6000
fax: 617 452-8000

January 18, 2002

Ms. Laurie Grandchamp
Supervising Engineer
Office of Waste Management
Phode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908-5767

Subject: Preliminary Cost Estimate Report
T.F. Green Airport
Former Truck Away Landfill Site
Warwick, Rhode Island

Dear Laurie:

On Behalf of the Rhode Island Airport Corporation (RIAC), Camp Dresser & McKee, Inc. (CDM) hereby submits the enclosed Preliminary Cost Estimate Report for the former Truk Away Landfill Site at the T.F. Green Airport in Warwick, Rhode Island. As Agreed between RIAC, RIDEM and CDM, the goal of this evaluation was to obtain a preliminary, planning level cost estimate for three different site closure/improvement options for the site. An additional goal of this evaluation was to better estimate the degree of differential settlement between proposed site cargo building and associated ramps and taxiways. Our findings are enclosed in the attached report.

The estimate cost associated with the closure of the landfill and construction of cargo buildings makes this site improvement option economically infeasible. In addition, the expected long term differential settlement that would be experienced at the site is not within operational tolerances normally associated with aircraft travel over pavement. As part of the Master Plan/Environmental impact Study (EIS), (RIAC) is evaluating other potential site uses that will also incorporate measures to mitigate potential impacts to human health and the environment.

Please call either of the undersigned at (617) 452-6000 if you have any questions or if you need additional information.

Very truly yours,

Matthew Dentch, P.E.
Project Manager
Camp Dresser & McKee Inc.

Kevin J. Riley, P.E.
Associate
Camp Dresser & Mckee Inc.

cc: Mr. James Zisiades, RIAC
Ms. Mary Soderstrum, RIAC
Mr. Thomas Wright, RIDOA
Mr. Dave Sheldon, RIDOA

Contents

Executive Summary

This Preliminary Cost Estimate Report for the former Truk Away Landfill (the site) at T. F. Green Airport in Warwick, Rhode Island has been prepared by Camp Dresser & McKee, Inc. (CDM) to provide a preliminary cost estimate for three site closure/improvement alternatives. These three alternatives were selected in consultation with RIAC to better define the long-term strategy for the site based on:

- The likelihood that each alternative would meet with approval from local, state and federal officials,
- The economic feasibility of each alternative,
- Regulatory requirements for landfill closure and
- Future airport operational needs.

The three alternatives do not provide a similar final site use, but instead were selected to provide RIAC with a conceptual design and preliminary cost estimate to evaluate the feasibility of site closure/improvement from an economic, regulatory and technical practicability standpoint. The three alternatives that were evaluated are as follows:

- Alternative 1 - Landfill closure as required by the Rhode Island Department of Environmental Management (RIDEM) regulations with no site improvements. Major landfill closure elements include a final cover system, perimeter storm water controls, gas collection and treatment (if required) and leachate collection and treatment (if required).
- Alternative 2 - Partial landfill closure to the west and southwest and implementation of a soil preloading program lasting up to 24 months to assist in mitigating long term settlement of the proposed ramps and taxiways. This alternative assumes that complete closure of the landfill would proceed after this alternative has been implemented as described in Alternative 1 or 3.
- Alternative 3 - Landfill closure as required by RIDEM regulations and the construction of four 30,000 square foot cargo buildings, ramps, taxiways and parking and a taxiway wetland crossing from Runway 16/34.

Prior to conducting the evaluation of the three alternatives, CDM undertook an initial environmental and geotechnical study of the site to further evaluate the engineering properties of the subsurface soils. Also, an evaluation of impacts to the adjacent wetlands from site closure/improvements and the state and federal environmental permits that will be required for these site closure/improvement options is presented. Lastly, CDM designed project site improvements to Federal Aviation Administration (FAA) design requirements.

Site Description and History

The former Truk Away Landfill is located within the southern portion of T.F. Green Airport in Warwick, Rhode Island. The landfill covers approximately 34 acres and is bounded to the west and northwest by industrial property, to the north by the southern end of Runway 34-16, to the east by the wetlands at the end of the runway and a former City of Warwick solid waste facility, and to the south by residential property. The landfill surface is vegetated with low growing shrubs and grasses and occasional stands of small trees with a maximum height of about 20 feet. Correspondence from Truk Away and Sanitas Waste Disposal to the Division of Solid Waste Management during the 1970's that have been made available to CDM suggests that extensive deposits of peat underlie the site. The waste materials placed in the landfill are not well documented but reference is made to "rubbish and construction demolition debris."

Summary of Previous Environmental and Geotechnical Investigations

Between October 19, and December 13, 2000, CDM undertook a limited environmental site investigation. Key findings of CDM's initial investigation included:

- The landfill's edge of waste generally corresponded to the site's fence line/property line to the south and west and with the edge of wetlands to the north and east.

- Soil and groundwater laboratory analysis results and field screening of soil vapor indicates that subsurface conditions at the site are typical of what would be expected at a landfill containing residential/commercial waste and construction demolition debris. Floating product, however, was detected at a thickness of about 2 feet in MW-3, which is located in the center of the landfill.

- Elevated concentrations of methane were reported in a number of vapor probes although the observance of elevated methane concentrations was restricted to the subsurface environment and not ambient, breathing zone areas.

The investigation described in CDM's Limited Site Investigation Report was intended as an initial investigation of subsurface conditions at the site and was not meant to include a comprehensive site investigation of the landfill area. More comprehensive investigations will likely be required to provide adequate information for landfill closure. If RIAC chooses not to pursue cargo building construction at the landfill, responsibility for further landfill investigations and closure will revert back to the Rhode Island Department of Transportation (RIDOT).

A report entitled Preliminary Subsurface Investigation and Geotechnical Feasibility Study by CDM and dated January 19, 2001 identified that significant settlement would likely occur with site improvements, namely the construction of air cargo buildings, ramps and taxiways. The anticipated settlement is a function of the existence of waste material and peat underlying the site. While short-term settlement can be mitigated through a pre-construction program involving deep dynamic compaction and/or soil preloading, the site would be expected to experience long-term settlement. The report concluded that long-term settlement of the buildings could be addressed by the installation of deep foundations; however, differential settlement between the buildings and airplane taxiways/building ramps would likely require long term maintenance over the life of the buildings, taxiway and ramps.

Alternative Evaluation Summary

The results of the alternative evaluation are summarized on Table ES-1. A review of this table identifies the following significant findings:

1. The preliminary estimated cost to implement landfill closure/cargo building construction (Alternative 3) is $46,100,000 including long-term operation and maintenance costs. This estimate takes into account escalation costs (4 percent per year) since the soil preloading program would extend construction duration to an estimated three year period. Advantages of this option include protection of human health and the environment through landfill closure, and creation of employment opportunities for the community. Disadvantages of this alternative include the high cost to implement and the uncertainty in obtaining regulatory approval for the proposed wetland crossing.

2. Although CDM has assumed a certain cost associated with addressing difference in settlement between buildings and ramps (as part of Alternative 3), operational issues associated with maintaining the proposed ramps are difficult to predict. While we believe that deep dynamic compaction, soil preloading and deep foundations will address short term settlement, the uncertainty of controlling a 12 inch difference in settlement over a 30 year design life requires significant attention by RIAC.

3. In all alternatives, regrading the landfill for closure purposes may attract a large bird population, which could pose a significant safety hazard to aircraft using the adjacent runway.

4. Significant wetland issues will be encountered in all three alternatives. In general, the wetlands at and adjacent to the former Truk Away Landfill are in a compromised state due to the highly developed nature of the airport and surrounding urban community. RIDEM and the United State Army Corps of Engineers, however, will still require RIAC or RIDOT to complete the necessary permitting activities associated with work in a wetland. Given these potential wetland impacts, it is likely that a compensatory wetland construction program

will be required within Warwick city limits to offset the wetland impacts from the proposed cargo building project.

To further complicate the wetland issues, a site improvement project north of the site on airport property is currently under development where a wetland crossing will be required. RIAC should consider the permitting sequence of the two projects and may want to consider permitting these projects together.

TABLE ES-1

ALTERNATIVE EVALUATION SUMMARY
FORMER TRUK-AWAY LANDFILL

T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Alternative Description	Ability to Receive Regulatory Approval	Advantages	Disadvantages	Preliminary Estimated Cost
Alternative 1 - Landfill Closure	High	Protective of human health and the environment.	Doesn't address long-term airport needs. No increase in jobs for community Regrading may cause bird hazard.	$10,900,000
Alternative 2 - Partial Landfill Closure with Soil Preloading Program	Medium to High	Partially protective of human health and the environment. Allows RIAC more time to evaluate economic feasibility of proposed site future use.	Partial landfill closure technically more difficult than complete closure. Soil pre-loading piles require maintenance. Regrading may cause bird hazard. Partial closure would be complicated by financial responsibility between RIAC, RIDOA, and RIDOT.	$13,300,000
Alternative 3 - Landfill Closure with Cargo Building Construction	Medium	Protective of human health and the environment. Generates new jobs for community. Addresses long-term airport operational needs given lack of available real estate.	Regulatory approval for wetland crossing may be difficult. Local opposition may be high. Regrading may cause bird hazard. Difference in predicted settlement between buildings and ramps will require maintenance. High cost - payback evaluation required.	$46,100,000

Section 1
Introduction

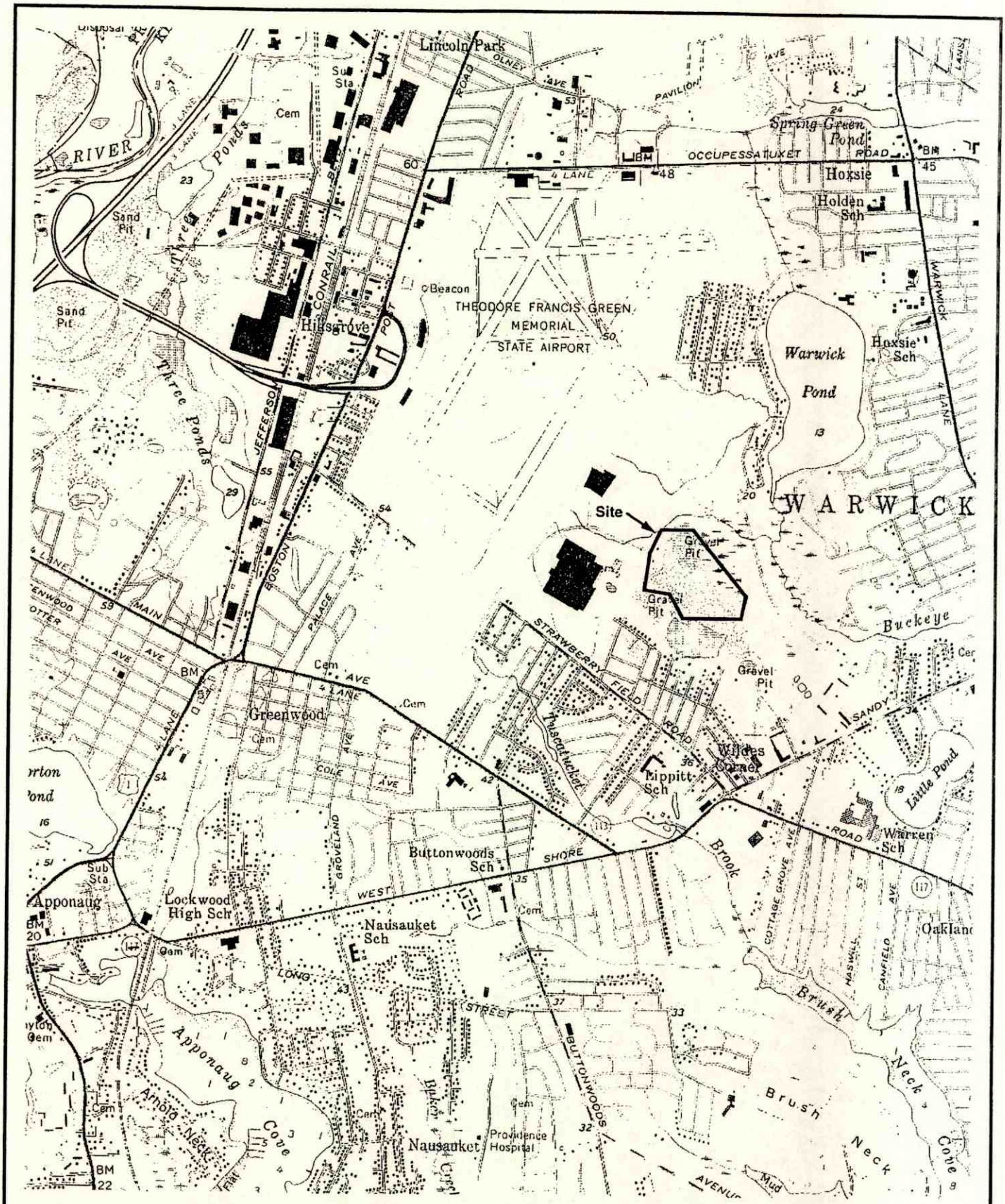
This Preliminary Cost Estimate Report for the former Truk Away Landfill (the site) at T. F. Green Airport in Warwick, Rhode Island has been prepared by Camp Dresser & McKee, Inc. (CDM) to provide a preliminary cost estimate for three site closure/improvement alternatives. These three alternatives were selected in consultation with RIAC to better define the long-term strategy for the site. CDM has prepared a conceptual design challenges and preliminary cost estimate of the following three site closure/improvement options:

- Alternative 1 - Landfill closure as required by the Rhode Island Department of Environmental Management (RIDEM) with no site improvements.
- Alternative 2 - Partial landfill closure and implementation of a soil preloading program.
- Alternative 3 - Landfill closure and cargo buildings construction.

During 2000, CDM conducted a limited environmental site investigation and preliminary geotechnical engineering evaluation of the site to obtain the initial data to support this preliminary cost estimate. Prior to conducting the evaluation of the three alternatives, CDM undertook an additional geotechnical study of the site to further evaluate the engineering properties of the subsurface soils. The results of the recent geotechnical evaluation are presented in Section 2. Also, an evaluation of the adjacent wetlands and the state and federal environmental permits that will be required for these site closure/improvement options is presented. Lastly, CDM designed the proposed project site improvements to meet Federal Aviation Administration (FAA) requirements.

1.1 Site Description and History

The former Truk Away Landfill is located within the southern portion of T.F. Green Airport in Warwick, Rhode Island. The landfill covers approximately 34 acres and is bounded to the west and northwest by industrial property, to the north by the southern end of Runway 34-16, to the east by the wetlands at the end of the runway and a former City of Warwick solid waste facility, and to the south by residential property. The landfill surface is vegetated with low growing shrubs and grasses and occasional stands of small trees with maximum height of about 20 feet. Numerous piles and small areas of solid waste are located throughout the landfill, although no drums or containers that may store hazardous waste were noted on the ground surface during CDM's field investigations or site visits. A Locus Map is provided on **Figure 1-1** and a Site Plan is provided on **Figure 1-2**, contained in the report back pocket.



Base Map: USGS Quad - East
Greenwich, RI - 1975
Scale 1" = 2083'

CDM Camp Dresser & McKee Inc

Figure 1-1
Site Locus

Correspondence from Truk-Away and Sanitas Waste Disposal to the Division of Solid Waste Management during the 1970's that have been made available to CDM suggests that extensive deposits of peat underlie the site. The waste materials placed in the landfill are not well documented but reference is made to "rubbish and construction demolition debris." The removal of batteries from the landfill has been reported to occur in the past.

1.2 Summary of Previous Environmental Investigations

Between October 19, and December 13, 2000, CDM undertook a limited environmental site investigation. Field activities conducted as part of this limited subsurface investigation included:

- Excavation of test pits around the landfill perimeter to delineate the edge of waste;
- Wetland flagging;
- Advancement of soil borings, including the collection and laboratory analysis of soil samples
- Installation of six monitoring wells;
- Monitoring well development
- Groundwater sampling and laboratory analysis; and
- Soil vapor monitoring.

Key findings of CDM's initial investigation included:

- The landfill's edge of waste generally corresponded to the site's fence line/property line to the south and west and with the edge of wetlands to the north and east.
- Soil and groundwater laboratory analysis results and field screening of soil vapor indicates that subsurface conditions at the site are typical of what would be expected at a landfill containing residential and/or commercial waste. The only compound detected in soil above RIDEM Industrial/Commercial Direct Exposure or Leachability Criteria was arsenic at two locations. The concentrations of arsenic detected (9.1 mg/kg and 6.8 mg/kg) could in fact be attributable to background conditions and are within the range of a typical urban fill area. The only compounds detected in groundwater samples at or above RIDEM GB Groundwater Objectives were toluene at 1.7 mg/l in MW-3 and ethylbenzene at 2.5 mg/l in MW-3 and 2.1 mg/l in MW-8. Floating product, however, was detected at a thickness of about 2 feet in MW-3, which is located in the center of the landfill.

- Elevated methane concentrations were reported in a number of vapor probes although the observance of elevated methane concentrations were restricted to the subsurface environment and not ambient, breathing zone areas. CDM anticipates that RIDEM will require closure of the landfill according to applicable RIDEM solid waste regulations, which require controls for methane.

The investigation described in CDM's Limited Site Investigation Report was intended as an initial investigation of subsurface conditions at the site and was not meant to include a comprehensive site investigation of the landfill area. More comprehensive investigations will likely be required to provide adequate information for landfill closure. In a letter dated June 22, 2001, RIDEM indicated that the following activities should be conducted prior to closure design:

- Delineation of the spatial extent of free product at the site;
- Determination of the volume of waste located beyond the southern site boundary;
- Bedrock groundwater investigations to evaluate whether dense non-aqueous phase liquids exist;
- More extensive landfill gas investigations; and
- Surface water and sediment sampling of the wetlands surrounding the site.

As part of the preliminary cost estimate, CDM has included the cost associated with additional environmental investigations at the site prior to closure. If RIAC chooses not to pursue cargo building construction at the landfill, responsibility for further landfill investigations and closure will revert back to Rhode Island Department of Transportation (RIDOT).

1.3 Summary of Previous Geotechnical Investigations

Preliminary cost estimates associated with soil preloading, deep dynamic compaction and deep foundation systems were presented in CDM's Preliminary Subsurface Investigation and Geotechnical Feasibility Study dated January 19, 2001. The results of the preliminary geotechnical investigation and feasibility evaluation identified that significant settlement would likely occur with site improvements, namely the construction of air cargo buildings, ramps and taxiways.

The anticipated settlement is a function of the existence of waste material and peat underlying the site. While short-term settlement can be mitigated through a pre-construction program involving deep dynamic compaction and/or soil preloading, the site would be expected to experience long-term settlement. The report concluded that long-term settlement of the buildings could be addressed by the installation of deep foundations; however, difference in settlement between the buildings and

taxiways/building ramps would likely require corrective action over the life of the buildings. RIAC and CDM agreed that additional geotechnical evaluations were warranted to support a preliminary cost estimate of proposed site improvement options and to better estimate long-term settlement. The results of these additional geotechnical evaluations are presented in Section 2.2 and their impacts to design of the three alternatives is presented in Section 3.

Section 2
Supplemental Geotechnical Engineering and Wetland Evaluations

This section presents the results of the geotechnical and wetland evaluations that were conducted during April and May 2001 as part of the evaluation of the three site closure/improvement options for the former Truk Away Landfill. Impacts that the geotechnical properties of site soils/waste material will have on the design of closure/improvement alternatives and the wetland permits required are discussed in Section 3 under each alternative.

2.1 Additional Geotechnical Evaluations

The purpose of the additional geotechnical evaluations undertaken as part of this study was to further investigate the subsurface conditions at the landfill. Specifically, the scope of work included the following:

- Advancing three (3) test borings within the limits of the landfill to further investigate subsurface conditions and obtain soil and waste samples for geotechnical laboratory testing;
- Conducting geotechnical laboratory tests to assist with classification and estimating engineering properties of the soil and waste encountered;
- Providing geotechnical engineering recommendations for foundation system alternatives and ground improvement techniques based on the additional subsurface information collected;

2.1.1 Subsurface Exploration Program

Three test borings (B-1 through B-3) were drilled as part of this evaluation to further investigate the subsurface conditions at the site. The test borings were drilled by New Hampshire Boring Inc. of Derry, New Hampshire between April 30 and May 2, 2001. The test borings were drilled using an all-terrain vehicle (ATV) drill rig. Test boring depths ranged from 22 feet to 47 feet below the existing ground surface. Split-spoon sampling was conducted at about five-foot intervals at each boring location in accordance with ASTM D1586. Representative samples were taken from each split-spoon collected in the waste and the underlying peat and naturally deposited sand and stored in jars for later review and laboratory testing.

A CDM representative observed the test borings in the field. Test borings were located in the field by taping from existing site features. Elevations were estimated relative to available site topography. Logs of the test borings, prepared by New Hampshire Boring and reviewed by CDM, are included in Appendix A. Figure 1-2 shows the approximate locations of the explorations. Test borings were backfilled with bentonite grout to an elevation approximately 5 feet above the bottom of the

waste material. The remainder of the test borings were backfilled with waste and spoil material. No monitoring wells were installed as part of this investigation.

2.1.2 Subsurface Conditions

Subsurface soil conditions were interpreted from the test borings conducted at the site and our understanding of the landfill history and local geology. A summary of subsurface conditions encountered during the first phase of test borings can be found in CDM's Preliminary Subsurface Investigation and Geotechnical Feasibility Study dated January 19, 2001. Test borings drilled within the landfill typically encountered cover soil and waste overlying naturally deposited peat, sand and gravel. Landfill cover material, consisting of medium dense to dense, brown to black, fine to medium sand with varying amounts of silt and gravel, was encountered in all of the recent borings. Cover thickness ranged from 1.5 to 2 feet with Standard Penetration Test (SPT) N-values ranging from 13 to 33 blows per foot (bl/ft). Waste was encountered in all three test borings. Waste material typically consisted of loose to dense black wood, paper, glass, cloth, soil, metal, wire and plastic. Waste thickness ranged from greater than 20.5 feet to 40.5 feet with SPT N-values ranging from 8 to 41 bl/ft.

In test borings B-1 and B-2, the lower 5 to 13 feet of the waste was mixed with the underlying peat soils. Samples taken within this zone consisted of very loose to medium dense black PEAT with varying amounts of waste material, silt, and sand. Typical SPT N-values in the peat and waste mix ranged from weight of hammer (WOH) to 11 bl/ft. The natural inorganic soils below the waste and peat mix were encountered in test borings B-1 and B-2. These soils typically consisted of loose to dense, gray, fine to coarse sand and gravel. Test boring B-2 encountered three feet of very loose, gray silt, trace roots overlying loose gray fine sand, little silt. Typical SPT N-values in the inorganic layer ranged from 8 bl/ft to 19 bl/ft and was encountered up to 7 feet in thickness. Test borings B-1 and B-2 were terminated in the naturally deposited inorganic sand and gravel stratum. Test boring B-3 was terminated within the waste. **Table 2-1** presents a summary of the recent subsurface explorations

2.1.3 Groundwater Levels

Groundwater levels in each test boring were estimated based on the conditions of the samples obtained and by the observed water levels within the borehole at the time of drilling. Groundwater was observed in test boring B-1 and was at approximately 16 feet below ground surface. Groundwater was not encountered in test borings B-2 and B-3.

Based on the groundwater encountered during drilling and measured in the existing monitoring wells, the original configuration of the site, and the surrounding wetlands, it appears that there may be pockets of water perched within the landfill waste material and the natural groundwater level is at approximately the top of the peat strata (between 20 and 40 feet below grade). Water levels measured in the explorations should not necessarily be considered to represent stabilized groundwater

TABLE 2-1

SUMMARY OF SUBSURFACE EXPLORATIONS

CARGO FACILITIES, T.F GREEN AIRPORT
RHODE ISLAND AIRPORT CORPORATION
WARWICK, RHODE ISLAND

Exploration No.	Approximate Ground Surface El. (1)	Exploration Depth (ft.)	Strata Thickness (ft.)					Depth to Groundwater at time of drilling (4) (ft.)
			Cover Material	Waste	Peat	Silt	Sand & Gravel	
B-1	31.5	45	2	40.5 (2)	NE	NE	>2.5	16
B-2	27.5	47	2	35 (3)	NE	3	>7	NE
B-3	47.5	22	1.5	>20.5	NE	NE	NE	NE

Notes:

1. Elevations are in feet and refer to NGVD 1929.
2. Lower 5 ft. of waste mixed with peat.
3. Lower 13 ft. of waste mixed with peat.
4. Groundwater depths are relative to the existing ground surface.

Abbreviations:

NE Indicates strata not encountered
> Indicates strata not fully penetrated

levels. In addition, water levels are expected to fluctuate with season, temperature, climate, construction in the area, and other factors.

2.1.4 Laboratory Testing

Geotechnical laboratory tests were performed on selected waste and peat samples collected as part of this study to determine organic content, water content, plasticity and consolidation properties of these materials. In addition, more complete detailed visual classifications of the waste materials were obtained, which included descriptions of the type and percentage of materials comprising the waste.

Organic content (ASTM D2974) tests were performed on select waste samples recovered from all of the test borings. The results of organic content tests performed on waste samples ranged from 5.9% to 94.1%. Visual classifications of the waste samples indicated that the waste is comprised of several materials including; soil, plastic, paper, organics (wood, roots, etc.), and metal. Two undisturbed samples of the peat deposit were collected in test boring B-2. These peat samples, collected between 28 - 30 feet and 31 - 33 feet below ground surface, were also mixed with waste. The results of organic content tests performed on these samples ranged from 21.4% to 89.4% and, based on the Atterberg limits testing, are classified as OH (organic clays of medium to high plasticity, organic silts) or MH (inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts).

Consolidation tests (ASTM D2435) were performed on the undisturbed tube samples of peat collected from B-2. Consolidation tests were conducted to assist with settlement analysis. Based on the results of the consolidation tests, the peat can be considered normally consolidated and has a relatively high compressibility. The results of the laboratory tests are included in Appendix B.

The impacts that the site subsurface materials (peat and waste material) have on construction of the three alternatives and preliminary geotechnical design recommendations are presented in Section 3 under each alternative.

2.2 Wetland Issues

2.2.1 Additional Waste Delineation

To confirm the limits of waste delineation along the northern and eastern boundaries of the landfill, TMC Services, Inc. of Bellingham, Massachusetts excavated six test pits at locations along this area of the landfill. Previously, CDM had observed the excavation of 23 test pits around the perimeter of the landfill to delineate the edge of waste. Since proposed Alternative 3 will likely result in grading along this portion of the landfill, these additional test pits were conducted to verify the extent of waste in this area of the landfill.

Up to four test pits were excavated at each location until the approximate line of waste was encountered. Test pits were excavated on September 19, 2001 with a CAT 315B excavator. Test pit depths varied to up to 10 feet below ground surface. A CDM representative observed the test pit excavations in the field. The results of the test pit program identified that the approximate extent of waste along the northern and eastern side of the landfill is consistent with the results of the October 2000 test pit program. Edge of waste delineations is shown on Figure 1-2.

2.2.2 Wetland Evaluation

As part of the T. F. Green Airport Master Plan/Environmental Impact Statement work being conducted by Landrum and Brown (L&B), an evaluation of the wetland quality was undertaken. The wetlands on airport property were field-delineated by Applied Bio-Systems in the fall and winter of 2000-2001, per United States Army Corps of Engineers (USACE) and Rhode Island definitions. The delineation was field-surveyed and overlaid onto project topographic mapping. In general, the wetlands at and adjacent to the former Truk Away Landfill are in a compromised state due to the highly developed nature of the airport and surrounding urban community.

The wetlands on the airport are located along the eastern and southeastern perimeters of the airport property, as shown on Figure 2-2. All of these wetlands are fresh water wetlands and have no tidal influence. Most of these wetlands are associated with drainage channels or streams that flow off-airport to the east, south, and southeast, such that they are part of larger systems. Systems A, B, C include wetlands both on and off airport, while System D is located entirely within airport property. Systems C and D border the Truk-Away Landfill

System C

System C is comprised of perennial streams with forested borders and an open wetland of mostly common reed grass. It is located west and south of Runway 34 and east of Runway 5 receiving surface drainage from these areas. Wetlands in this system drain toward the end of Runway 34, where a culvert flows into Buckeye Brook. System C has three distinct areas. One wetland is located off-airport property, while the other two sections of the wetland are located within the airport boundary.

The primary channel of System C begins some 600 feet from the intersection of Runways 5 and 34, near the Airport Traffic Control Tower. Drainage from the airport is the origin of this perennial stream that flows in a southeast direction along the west side of Runway 34 and into Buckeye Brook. This wetland appears to have been significantly altered. Not only does piped drainage play a major role in its water regime, the land on its north and eastern edges has been built up by fill to form a steep 10-12 foot embankment that is regularly mowed.

Unlike the meandering and sometimes braided stream channel from the Industrial area that flows into it, some sections of the main channel have been straightened, with the channel bank along the airport property line as high as four feet. This stream, at

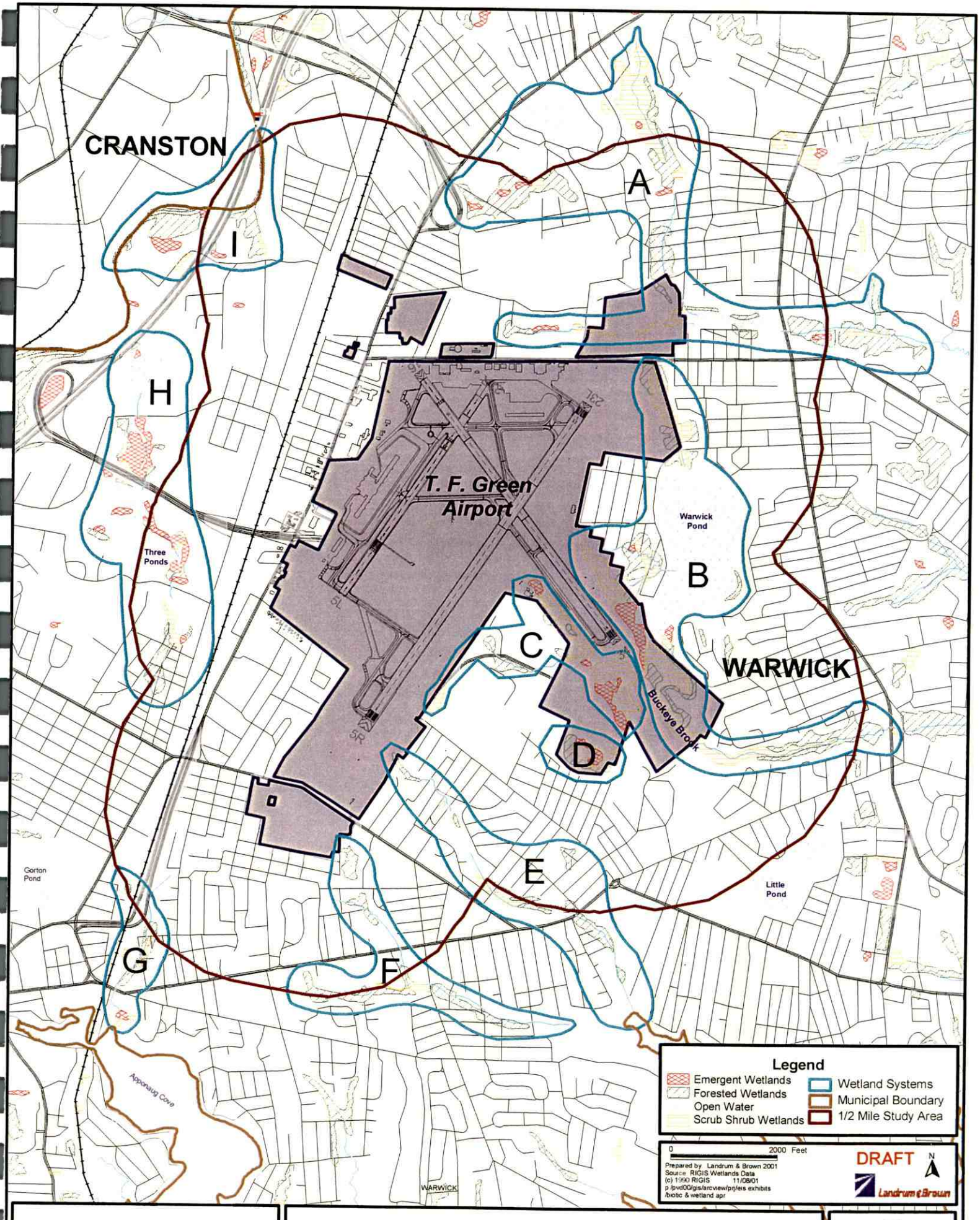
times orange in color, flows through a narrow forested area with red maple, black cherry, gray birch, oaks, willow, and black locust but no obviously dominant tree species. East of the forested area this section of wetland System C has a diverse but thin shrub growth of European buckthorn, steeplebush (Spirea tomentosa), northern bayberry (Myrica pensylvanica), high-bush blueberry, grapevines and poison sumac. Emergent plants include common reed grass, common cattails, purple loosestrife, tussock sedge, and moss. The area is wet but not saturated.

As the channel flows in a southeast direction approaching the end of Runway 34 the forested area turns into a thin edge of speckled alder (Alnus incana) trees, smooth sumac (Rhus glabra), open water and a common reed grass field. This portion of System C has a distinctly different character, as it is broad and open, more field than forest. The primary functions of this wetland are: floodflow alteration; sediment and toxicant retention; nutrient removal and retention; and wildlife habitat.

System D

System D is approximately 7.5-acres, dominated by common reed grass. It is located entirely within, and bordered on three sides by, the airport property perimeter. It is north of a Strawberry Field Road residential area, northwest of a former landfill, and east of Industrial Avenue. The edge closest the residential area is dominated by sweet pepperbush in the shrub layer and slopes down to the wetland's lowest point where skunk cabbage and common cattails are co-dominant in the herbaceous layer. As the wetland slopes to the north the elevation gradually rises. Here there is some purple loosestrife but common reed grass predominates. The wetland rises up to a prominent ridge that is mostly bare except for a few large trees.

The primary value of this wetland is nutrient removal because of its position downstream of a densely developed residential and industrial area. The extensive root system of the common reed grass and somewhat flat topography provide excellent opportunity for sediment/toxicant retention and nutrient uptake.



Source: Landrom & Brown, 2001

Wetland Systems Occurring On T. F. Green Airport

Figure 2-1

Section 3
Evaluation of Site Closure/Improvement Alternative

This section presents an evaluation of the three site closure/improvement options for the former Truk Away Landfill. Each alternative is described in the sections provided below, followed by an estimated cost for the alternative and discussions relative to geotechnical and wetland issues.

3.1 Overview of Site Closure/Improvement Alternatives

As presented in Section 1, three site closure/improvement alternatives were evaluated as part of this preliminary cost estimate. The three alternatives were selected with input from RIAC planning officials based on:

- the likelihood that each alternative would meet with approval from local, state and federal officials,
- the economic feasibility of each alternative,
- regulatory requirements for landfill closure and
- future airport operational needs.

The three alternatives do not provide a similar final site use, but instead were selected to provide RIAC with a conceptual design and the preliminary cost estimate to evaluate the feasibility of site closure/improvement from an economic, regulatory and technical practicability standpoint. The three alternatives that were evaluated are as follows:

- Alternative 1 - Landfill closure as required by RIDEM regulations with no site improvements. Major landfill closure elements include a final cover system, perimeter storm water controls, gas collection and treatment (if required) and leachate collection and treatment (if required).
- Alternative 2 - Partial landfill closure to the west and southwest and implementation of a soil preloading program lasting up to 24 months to further evaluate whether this option will mitigate long term settlement of the proposed ramps and taxiways.
- Alternative 3 - Landfill closure as required by RIDEM regulations and the construction of four 30,000 square foot cargo buildings, ramps, taxiways and parking and a taxiway wetland crossing from Runway 16/34.

It is important to note that the level of detail associated with the conceptual design provided herein will correlate with the level of detail required to prepare a

preliminary cost estimate for the three alternative described above. CDM has focused on design elements that can have the greatest impact on construction cost such as cut/fill volumes, landfill closure elements, building, taxiway and ramp construction and geotechnical support of buildings, ramps and taxiways. For construction cost items that are not specifically related to environmental or geotechnical issues, CDM used unit costs from recent construction projects or readily available unit cost publications. Detailed engineering cost estimates should be developed during preliminary and final design depending on which alternative is deemed feasible.

3.2 Alternative 1 – Landfill Closure

This alternative involves installing a landfill cover at the former Truk-Away landfill and construction of other landfill closure elements as required by RIDEM to mitigate potential impacts to human health or the environment.

3.2.1 Conceptual Design

Since filling activities have been reported as recently as 1995, it is highly likely that a final landfill cover will be required as part of site closure/development. Landfill closure components would include: a final cover, a combined active/passive landfill gas venting system, perimeter drainage and possibly a leachate/groundwater collection and treatment system.

This section describes the conceptual design of the landfill closure alternative for the project site. The landfill closure design is based upon the existing site topography and Rhode Island DEM Solid Waste Regulation No. 2 – Landfills dated January 1997.

The intent of the design is to minimize the re-handling of the waste to reduce the cost to implement this alternative and to minimize the potential bird hazard. With the exception of a few mounded hills within the landfill area, the terrain is well suited for landfill closure. The plateau is gently sloped at roughly a 2 percent grade and the side slopes leading from the edge of waste to the abrupt change in slope at the plateau are approximately 6(H): 1(V). The landfill cap is designed to contain the waste landfilled at the site and protect the environment and public health. The waste along the edge of the project will likely be pulled back somewhat to provide a clean surface from where to start the capping components.

The landfill capping requirements specified by RIDEM have the following goals. Final cover system is designed to minimize the infiltration of precipitation into the landfill and promote drainage from the surface while minimizing erosion and maintenance. The Final cover system that meets the above goals is as follows;

- 12-in. (min.) Topsoil layer (suitable for supporting Vegetation)
- Granular or synthetic filter fabric (to prevent clogging of the drainage layer)
- 12-in. (min.) Drainage layer
- Low Permeability layer (consisting of clay or HDPE liner)
- Bedding material (6-in. minimum layer thickness)

Side slopes include the following;

- Side slopes 3(H): 1(V)
- Slope at top of landfill (3-5%)
- Drainage layer must have slope of 5% to allow for subsidence

In addition to the above requirements, a leachate collection system, surface water controls, and a gas collection and treatment system will be included within the design. These elements are intended to collect and treat leachate from the landfilled waste, promote positive drainage flow from the landfill, and collect and treat landfill gases generated by the decomposition of the waste

The irregularly shaped and areas of varied topography of the existing site will need to be reshaped in some areas to provide a uniform surface for placement of capping components. This effort will have to be compared with the placement of imported fill from an economic perspective to minimize costs and construction time. The top plateau must be graded at a minimum slope of 5% to promote drainage flow. Presently, the top portion of the existing landfill is sloped at 2%, so material must be reshaped from existing cover materials, or imported from off-site to make up the difference. An economical source could be construction and debris material where generators will pay the disposal facility to accept the material. This would prevent rehandling of the present material and eliminate any costs related to the import of material to obtain desired sub grade levels. Given the uncertainty associated with state acceptance of this approach, our cost estimate assumed that landfill regrading and fill (soil) will be used to shape the landfill.

3.2.2 Estimated Cost

Capital cost for this alternative include: pre-closure environmental investigations, engineering design and permitting of the closure system, construction cost for the closure system (cut/fill for grading, surface water controls, landfill gas controls, the final cover, and leachate/groundwater controls), bird control costs, construction oversight, and air monitoring during construction. Other capital costs include non-construction items such as legal fees, contractor overhead and profit, and contingencies.

Operation and maintenance costs associated with this alternative include landfill cover maintenance, monitoring of the landfill gas control and leachate systems, and groundwater and surface water monitoring. To estimate the cost of this alternative, CDM has assumed that a leachate/groundwater collection and treatment system would operate for a five year period. CDM assumed this duration since it is unclear whether leachate collection and treatment will even be required. By assuming that a leachate collection and treatment will be required for a five year period to provide a conservative approach to cost estimating without assuming a more conservative 30 year leachate system operational period.

The present worth cost associated with this alternative is estimated to be $10,900,000 using a 30-year operation period and 4 percent interest rate. A table summarizing the cost of this alternative is presented in **Table 3-1**.

3.2.3 Preliminary Geotechnical Design Consideration

Relatively light loads will be associated with the landfill cover that will be added to the site as part of this option. CDM expects that the loads associated with construction of the cap will result in settlement of the underlying strata that is tolerable to the capping system. Therefore, no preloading or deep dynamic compaction of the landfill will be required for this alternative

3.2.4 Wetland Issues

This alternative would provide a beneficial outcome to the large wetland system to the east since the perimeter drainage and leachate/groundwater collection and treatment system would mitigate detrimental impacts from surface and groundwater. Although the smaller wetland systems that are located throughout the landfill would be filled in from landfill closure, these wetland systems have a low value due to the placement of solid waste.

Also, wetland permitting for this alternative would be streamlined since the landfill closure would likely be viewed as a remediation project. Generally when property owners conduct remediation projects where work is being conducted with the wetland resource are (or 50 foot buffer zone), the Waste Management and Wetlands sections of RIDEM discuss the project and issue an approval letter to conduct work in the wetland area.

3.3 Alternative 2 - Partial Landfill Closure and Soil Preloading

This alternative involves construction of a landfill closure system south of the proposed air cargo buildings (cargo building construction locations and description are described under Alternative 3), as well as, implementation of a soil pre-loading program in the area of the proposed cargo building ramps/taxiways. The purpose of this alternative is to protect human health and the environment through partial landfill closure. In addition, performing a preloading program to assist in mitigating long-term settlement and further evaluating whether this preloading program will allow RIAC to proceed with Alternative 3 in a cost-effective manner.

3.3.1 Conceptual Design

The proposed landfill closure elements south of the proposed cargo buildings represents placement of a landfill cover of approximately 9 acres. A description of the landfill closure elements is presented under Alternative 1. The rational behind this alternative is two-fold and includes the following:

TABLE 3-1

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
CAPITAL COSTS - ALTERNATIVE 1

LANDFILL CLOSURE

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Cost
MOBILIZATION/DEMOBILIZATION (5%)	LS	1	$267,293	$267,293
PRE-DESIGN ENVIRONMENTAL INVESTIGATIONS	LS	1	$300,000	$300,000
BIRD CONTROL	LS	1	$75,000	$75,000
SITE SECURITY/HEALTH AND SAFETY (DURING CONSTRUCTION)	WK	16	$5,000	$80,000
EARTHWORK - PREGRADING	CY	40820	$9	$348,725
Strip and Stockpile	CY	24200	$2	$48,400
SITE PREPARATION				
- Clearing and Grubbing	ACRE	30	$2,000	$60,000
- Construct Haul/Access Roads	LS	1	$70,000	$70,000
-Silt Fence and Hay bales	LF	3,000	$3.48	$10,440
SURFACE WATER CONTROLS	LS	1	$200,000	$200,000
LANDFILL CLOSURE SYSTEM				
- Perimeter Drainage	LF	3,500	$14.00	$49,000
- HDPE Liner	SY	149,024	$4.09	$609,508
- Drainage Layer	cy	49,674	$19.20	$953,741
-Bank Run Gravel	cy	24,837	$8.60	$213,598
-Common Fill	cy	20,250	$6.32	$127,980
- Topsoil	CY	49,674	$16.03	$796,125
- Seed/Mulch/Fertilizer	SF	1,341,220	$0.32	$429,190
- Signs	EA	33	$20.00	$660
LANDFILL GAS CONVAYENCE AND TREAT				
- Piping and distribution	LF	3,000	$28	$82,500
- Thermal Treatment Unit	LS	1	$150,000	$150,000
- Passive/Active Landfill Gas Well Assembly	EA	20	$6,000	$120,000
LEACHATE/GROUNDWATER COLLECTION AND TREATMENT SYSTEM				
- Booster Pumps	LS	1	$200,000	$200,000
- Collection Trench	LF	2,000	$39	$77,000

TABLE 3-1

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
CAPITAL COSTS - ALTERNATIVE 1

LANDFILL CLOSURE

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Cost
- Distribution Lines	LF	5,000	$8.80	$44,000
- Treatment Building	LS	1	$240,000	$240,000
- Ancillary Equipment (Booster Pumps, etc.)	LS	1	$50,000	$50,000
- Recharge System	LS	1	$50,000	$50,000
- Process Control Equipment	LS	1	$200,000	$200,000
- Instrumentation/Control/Electrical	LS	1	$50,000	$50,000
INSTALLATION OF MONITORING WELLS				
- Overburden	EA	10	$1,000	$10,000
TOTAL CAPITAL COST				$5,913,161
Contractor General Conditions, Overhead and Profit (15%)				$886,974
Legal Fees, Licensing, Permitting (10%)				$591,316
Engineering/Administration (10%)				$591,316
SUBTOTAL				$7,982,768
Contingency (25%)				$1,995,692
Total Construction Cost				$9,978,460
TOTAL PRESENT WORTH OF O&M COSTS				$917,304
TOTAL PRESENT WORTH				$10,895,764

TABLE 3-1 (CONT.)

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
OPERATION AND MAINTENANCE COSTS - ALTERNATIVE 1

LANDFILL CLOSURE AND LEACHATE/GROUNDWATER COLLECTION AND TREATMENT

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Annual Cost	Operating Time (Year	Total Cost
CAP MAINTENANCE						
- Maintenance	YR	1	$10,000	$10,000	30	$172,900
- Erosion Control	YR	1	$10,000	$10,000	30	$172,920
LEACHATE/GROUNDWATER COLLECTION SYSTEM						
- Maintenance	YR	1	$10,000	$10,000	5	$44,520
- Sampling and Analysis	YR	1	$15,000	$15,000	5	$66,780
LEACHATE/GROUNDWATER TREATMENT SYSTEM						
- Labor	HR	260	$30	$7,800	5	$34,726
- Chemicals	YR	1	$5,000	$5,000	5	$22,260
- Sludge Disposal	55 - GAL.	10	$400	$4,000	5	$17,808
- Maintenance	YR	1	$10,000	$10,000	5	$44,520
- Electrical Supply (15%)	YR	1	$5,000	$5,000	5	$22,260
GROUNDWATER MONITORING						
- Sample	YR	1	$2,000	$2,000	10	$16,222
- Analysis	YR	1	$5,000	$5,000	10	$40,555
SURFACE WATER MONITORING						
- Sample	YR	1	$2,000	$2,000	10	$16,222
- Analysis	YR	1	$5,000	$5,000	10	$40,555
AIR MONITORING PROGRAM AND THERMAL TREATMENT O&M	YR	1	$15,000	$15,000	10	$121,665
SUBTOTAL						$833,913
CONTINGENCY (10%)						$83,391
TOTAL PRESENT WORTH OF 0&M COST						$917,304

* Used 4% interest rate for present worth analysis.

- By closing a portion of the landfill, the goal of protecting human health and the environment is partially addressed on an accelerated schedule;
- This alternative allows RIAC more time to evaluate the feasibility of air cargo construction while at the same time addressing potential long term differential settlement issues;
- Placement of the landfill cover in the areas of the proposed cargo buildings was not considered cost-effective due to difficult construction of deep foundations through a landfill cover system.

Soil preloading consists of temporarily placing excess fill in the area of future construction and over a compressible layer so as to cause consolidation settlement to occur prior to construction rather than after construction. In this alternative, CDM estimates that a 10 acre area located along the northeastern edge of the landfill will be the area subject to preloading. Once the layer has consolidated sufficiently, the excess fill is removed. The amount of excess fill required and duration of a preloading program are dependent on the type and thickness of material that is being preloaded as well as the foundation loading and tolerable settlement of the proposed permanent structures. Soil preloading is considered appropriate for portions of the site that are primarily underlain by peat soil rather than primarily waste material. The southern and eastern portion of the site appears to be primarily underlain by peat deposits of varying thicknesses.

3.3.2 Estimated Cost

Capital cost for this alternative include: pre-closure environmental investigations, engineering design of the closure system, construction cost for the closure system (cut/fill for grading, surface water controls, landfill gas controls, the final cover, and leachate/groundwater controls), construction oversight, air monitoring during construction, soil placement for pre-loading and installation and monitoring of settlement points. Other capital costs include non-construction items such as legal fees, contractor overhead and profit, permitting and contingencies. Operation and maintenance costs associated with this alternative include landfill cover maintenance, monitoring of the landfill gas control and leachate systems, and groundwater and surface water monitoring.

The present worth cost associated with this alternative is estimated to be $ 13,300,000 using a two year operation period and four percent interest rate. This alternative only addresses the execution of a soil preloading program and installation of a partial landfill closure system. A long-term operation and maintenance period was not included since this alternative would be the first phase of site closure/improvement scenario that could lead to continuing with Alternative 3. A table summarizing the cost of this alternative is presented in **Table 3-2**.

TABLE 3-2

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
CAPITAL COSTS - ALTERNATIVE 2

SOIL PRELOADING AND PARTIAL LANDFILL CLOSURE

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Cost
MOBILIZATION/DEMOBILIZATION (5%)	LS	1	$343,390	$343,390
PRE-DESIGN ENVIRONMENTAL INVESTIGATIONS	LS	1	$300,000	$300,000
BIRD CONTROL	LS	1	$75,000	$75,000
SITE SECURITY/HEALTH AND SAFETY (DURING CONSTRUCTION)	WK	12	$5,000	$60,000
EARTHWORK - PREGRADING	CY	18142	$9	$154,987
Strip and Stockpile	CY	19360	$2	$38,720
SITE PREPARATION				
- Clearing and Grubbing	ACRE	12	$5,000	$60,000
- Construct Haul/Access Roads	LS	1	$50,000	$50,000
-Silt Fence and Hay bales	LF	2,000	$3.48	$6,960
SURFACE WATER CONTROLS	LS	1	$100,000	$100,000
LANDFILL CLOSURE SYSTEM				
- Perimeter Drainage	LF	1,800	$14.00	$25,200
- HDPE Liner	SY	66,167	$4.09	$270,622
- Drainage Layer	cy	22,055	$19.20	$423,461
-Bank Run Gravel	cy	11,028	$8.60	$94,838
-Common Fill	cy	8,991	$6.32	$56,823
- Passive Landfill Gas Well Assembly	EA	9	$6,000	$54,000
- Topsoil	CY	22,075	$16.03	$353,798
- Seed/Mulch/Fertilizer	SF	596,038	$0.32	$190,732
- Signs	EA	33	$20.00	$660
SOIL PRELOADING PROGRAM				
- Soil Placement (20' High)	ACRES	10	$484,000	$4,840,000
- Settlement Plates	LS	1	$8,000	$8,000
INSTALLATION OF MONITORING WELLS				
- Overburden	EA	4	$1,000	$4,000
TOTAL CAPITAL COST				$7,511,191

TABLE 3-2

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
CAPITAL COSTS - ALTERNATIVE 2

SOIL PRELOADING AND PARTIAL LANDFILL CLOSURE

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Cost
Contractor GC*, Overhead and Profit (15%)				$1,126,679
* General Conditions				
Legal Fees, Licensing, Permitting (10%)				$751,119
Engineering/Administration (10%)				$751,119
SUBTOTAL				$10,140,107
Contingency (25%)				$2,535,027
Total Construction Cost				$12,675,134
Escalation (4% at 2 year Construction Period)				$507,005
TOTAL PRESENT WORTH OF O&M COSTS				$77,042
TOTAL PRESENT WORTH				$13,259,182

TABLE 3-2 (CONT.)

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
OPERATION AND MAINTENANCE COSTS - ALTERNATIVE 2

SOIL PRELOADING AND PARTIAL LANDFILL CLOSURE

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Annual Cost	Operating Time (Year	Total Cost
CAP MAINTENANCE						
- Maintenance	YR	1	$10,000	$10,000	2	$12,970
- Erosion Control	YR	1	$10,000	$10,000	2	$12,970
GROUNDWATER MONITORING						
- Sample	YR	1	$2,000	$2,000	2	$2,594
- Analysis	YR	1	$5,000	$5,000	2	$6,485
SURFACE WATER MONITORING						
- Sample	YR	1	$2,000	$2,000	2	$2,594
- Analysis	YR	1	$5,000	$5,000	2	$6,485
SETTLEMENT PLATE MONITORIN	YR	1	$20,000	$20,000	2	$25,940
SUBTOTAL						$70,038
CONTINGENCY (10%)						$7,004
TOTAL PRESENT WORTH OF 0&M COST						$77,042

* Used 4% interest rate for present worth analysis.

3.3.3 Preliminary Geotechnical Design Consideration

As discussed for Option 1, portions of the landfill which are closed with no further development (other than cars/trucks traffic) are expected to result in settlement of the underlying strata, due to the placement of the landfill cap and paving system that is tolerable to the capping system.

Based on the laboratory tests that were performed on samples of the peat encountered at the site, CDM estimates that a preload program consisting of 20 feet of excess fill placed over the area of the proposed site improvements would need to remain in place for up to 24 months. This excess fill is in addition to the 6 to 20 feet of fill that will be placed for grading purposes in this area. The required duration of the preload program could be reduced by increasing the amount of excess fill placed. After removal of the excess fill, the proposed site improvements are estimated to experience up to 6 inches of post-construction primary (consolidation) settlement.

Although a preload program will help limit post-construction consolidation settlement, long-term creep settlement will be lessened but not eliminated. Organic soils with a high organic content, such as peat, should be expected to experience significant long-term creep settlement. The amount of long-term settlement is dependent on the thickness and creep characteristics of the underlying material as well as time. Based on the laboratory testing that was performed on the peat samples, we estimate that the long-term creep settlement of the peat soils at the site will result in approximately 6 to 12 inches of additional settlement over approximately 30 years. The amount of long term creep settlement will be less in areas of thinner layers of underlying peat.

Construction considerations for the use of soil preloading as a means to improve the settlement characteristics of the peat deposit at the site include the following:

- Granular material suitable for use in a soil preload program is anticipated to be readily available;
- Placement of the preload material is anticipated to be accomplished with conventional earth moving equipment;
- Fill used as part of a preloading program should be placed in conjunction with site filling around the perimeter of the landfill and can be used as part of a final landfill cover; and
- Preloading will reduce the amount of long-term creep settlement, however, preloading is not expected to eliminate long-term creep settlement associated with decomposition of the peat soils. This additional settlement will need to be incorporated into the design of the proposed structures. In addition, long-term

creep settlement should be monitored and maintenance will likely be needed over time.

3.3.4 Wetland Issues

Alternative 2 involves preliminary activities (soil preloading and partial landfill closure) with the ultimate goal of constructing cargo buildings on the landfill. Impacts to wetlands from the soil preloading program will occur since the soil preloading will be conducted adjacent to the wetlands and in some cases with the wetland boundary. Since the RIDEM review period for a project of this magnitude can be up to 18 months, it would be prudent to submit a permit application to RIDEM that encompasses not only the soil preloading program but also the full landfill closure project and cargo building construction. Since the ultimate goal of Alternative 2 is the same as Alternative 3, the reader is referred to Section 3.4.4 for a description of potential wetland issues associated with Alternative 2.

3.4 Alternative 3 – Landfill Closure and Cargo Building Construction

This alternative involves installing a landfill cover at the former Truk-Away landfill and construction of other landfill closure elements as required by RIDEM to mitigate potential impacts to human health or the environment. In addition, this alternative involves construction of four 30,000 square foot cargo buildings, ramps, and taxiways, paved parking areas, site drainage and landscaped areas.

3.4.1 Conceptual Design

The conceptual design for this alternative includes the construction of a cargo terminal to be served by freight aircraft and large trucks. The Cargo Terminal consists of a total of 120,000 square feet of cargo space (in four–30, 000 square feet buildings) sited parallel to Runway 16/34. The aircraft access the proposed facility by the extension of a taxiway into the landfill site, and vehicular access is gained from an existing roadway, namely, Warwick Industrial Drive.

The specific design elements of this alternative is based upon geometric guidelines published by the US DOT and Federal Aviation Administration (FAA) Advisory Circular AC 150 - Airport Design Manual. For maximum flexibility and for aircraft accessibility standards, the preliminary design uses geometry for Aircraft Design Group IV (ADG IV) for aircraft up to and including the size of a Boeing 767-300. The Cargo Facility Preliminary Design shown on Figure 3-3 depicts the Preliminary Design described herein. Primary Surface Zones and limitations on the maximum gradient of taxi lanes govern the surface elevations within the approach to the cargo buildings. Alignment of the taxi lane is also driven by the convention that airport design requirements generally favors parallel or perpendicular geometry.

Implementation of this alternative will involve the following steps:

- Rehandling or relocation of existing waste and soil,
- Preloading and deep dynamic compaction of peat/waste material
- Following sufficient preloading, constructing a cap over the 34 acres landfill to RIDEM specifications (with the exception of topsoil layer in areas reserved for future construction),
- Construction of cargo facility including deep foundations and structural slabs for buildings

Soil preloading (as discussed under Alternative 2) in areas of minimal waste and thick peat layers and deep dynamic compaction (as described in Section 3.4.3) in areas of waste material is required to mitigate short and long term settlement of the taxiways and ramps.

Construction of a cap over the landfill to RIDEM specifications. This involves the following (from Option1):

- Granular or synthetic filter fabric (to prevent clogging of the drainage layer)
- 12-in. (min.) Drainage layer
- Low Permeability layer (consisting of clay or HDPE liner)
- Bedding material (6-in. minimum layer thickness)

In areas not intended for development, the above components are covered with a topsoil layer intended to support vegetative growth for stability and appearance.

Construction of the cargo facilities will involve deep foundations and/or structural slabs for the buildings. For cost estimating purposes, CDM assumed that the cargo buildings would be constructed of metal exterior with interior finishes suitable for use as a cargo storage facility. Concrete taxiway and aprons are proposed between the existing runway and the proposed buildings.

Implementation of this alternative includes the direct alteration of wetland areas in order to comply with horizontal geometry requirements set forth by the FAA. Some disturbance along the fringe of the wetland boundary will be necessary in any event in order to contain the waste. These impacts are discussed further in Section 3.4.4.

3.4.2 Estimated Cost

Capital cost for this alternative include: pre-closure environmental investigations, engineering design of the closure system, construction cost for the closure system (cut/fill for grading, surface water controls, landfill gas controls, the final cover, and leachate/groundwater controls), construction oversight, and air monitoring during

construction. Other capital costs include non-construction items such as legal fees, contractor overhead and profit, permitting and contingencies. Operation and maintenance costs associated with this alternative include landfill cover maintenance, monitoring of the landfill gas control and leachate systems, and groundwater and surface water monitoring. For cost estimating purposes, CDM assumed that the leachate/groundwater collection and treatment system would operate for a five year period, as discussed in Alternative 1.

The present worth cost associated with this alternative is estimated to be $ 46,100,000 using a 30 year operation period and 4 percent interest rate. The 30 year O&M period covers pavement maintenance and erosion control. Based on CDM's preliminary understanding of site conditions and RIDEM regulatory requirements, the following additional O&M periods were assumed: leachate collection/treatment (5years), groundwater and surface water monitoring and landfill gas treatment monitoring (10 years), and settlement plate monitoring for the soil preloading program (2 years). A table summarizing the cost of this alternative is presented in **Table 3-3**.

3.4.3 Preliminary Geotechnical Design Consideration

As stated in CDM's previous geotechnical report, the existing waste and peat soils underlying the site are not considered suitable for foundation support of the proposed taxiways, aprons, or structures. These strata are highly compressible and lack sufficient strength to adequately support the proposed site improvements without excessive post-construction settlement.

The recent subsurface investigation did not reveal information about the waste material that impacted our previous analysis but rather confirmed the assumptions we made as part of that study. The geotechnical laboratory testing results provided more technical evidence concerning estimated long-term settlement and allows CDM and RIAC a greater degree of confidence in estimating both long-term settlement and estimated costs for Alternative 3.

As discussed in our previous report, deep dynamic compaction (DDC) can be used to treat the in-place waste material and reduce settlement of the underlying material. We recommend that DDC be used in areas of ramps, taxiways, and parking that are underlain primarily by waste material. The cargo buildings will not likely be able to tolerate the long-term creep settlement associated with decomposition of the waste or peat and, as such, we recommend that the structures be supported on deep foundations bearing in the underlying sand and gravel stratum.

DDC is a ground improvement technique that consists of repeated tamping of the ground surface by dropping heavy steel or concrete weights. Typically the weights are about 6 to 20 tons and are dropped in a grid pattern by a crane from various heights depending on the amount of energy required. Dropping the weights produces shock waves that propagate through the underlying material that consolidates the material resulting in reduced void space, increased density and

TABLE 3-3

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
CAPITAL COSTS - ALTERNATIVE 3

LANDFILL CLOSURE AND CARGO BUILDING CONSTRUCTION

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Cost
MOBILIZATION/DEMOBILIZATION (5%)	LS	1	$1,187,321	$1,187,321
PRE-DESIGN ENVIRONMENTAL INVESTIGATIONS	LS	1	$300,000	$300,000
BIRD CONTROL	LS	1	$75,000	$75,000
SITE SECURITY/HEALTH AND SAFETY (DURING CONSTRUCTION)	WK	16	$5,000	$80,000
EARTHWORK - PREGRADING	CY	189182	$8.54	$1,616,182
Strip and Stockpile	CY	24200	$2.00	$48,400
SITE PREPARATION				
- Clearing and Grubbing	ACRE	30	$5,000	$150,000
- Construct Haul/Access Roads	LS	1	$70,000	$70,000
-Silt Fence and Hay bales	LF	3,000	$3.48	$10,440
SURFACE WATER CONTROLS	LS	1	$200,000	$200,000
LANDFILL CLOSURE SYSTEM				
- Perimeter Drainage	LF	3,500	$14.00	$49,000
- HDPE Liner	SY	142,316	$4.09	$582,072
-Bank Run Gravel	cy	24,837	$8.60	$213,598
-Common Fill	cy	20,250	$6.32	$127,980
- Signs	EA	33	$20.00	$660
-Add. Cost for Foundations through HDPE Liner	LS	1	$200,000	$200,000
SOIL PRELOADING PROGRAM				
- Soil Placement	ACRES	10	$484,000	$4,840,000
- Settlement Plates	LS	1	$10,000	$10,000
DEEP DYNAMIC COMPACTION	ACRES	10	$85,000	$850,000
CARGO BUILDING CONSTRUCTION				
- Concrete Work*	LS	1	$1,773,486	$886,743
- Pre-Engineered Structures (Buildings)	EA	4	$700,000	$2,800,000
RAMP/TAXIWAY PAVEMENT				
- Grading for Asphalt Pavement	SY	92,489	$1.42	$131,149
- Screened Gravel Bedding	CY	35,978	$25.53	$918,626
- Asphalt Pavement (16")	TONS	81,388	$56.68	$4,613,072
DEEP FOUNDATIONS	BLDG	4	$1,000,000	$4,000,000
LANDFILL GAS CONVAYENCE AND TREAT				
- Piping and distribution	LF	3,000	$28	$82,500
- Thermal Treatment Unit	LS	1	$150,000	$150,000
- Passive Landfill Gas Well Assembly	EA	20	$6,000	$120,000

TABLE 3-3

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
CAPITAL COSTS - ALTERNATIVE 3

LANDFILL CLOSURE AND CARGO BUILDING CONSTRUCTION

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Cost
LEACHATE/GROUNDWATER COLLECTION AND TREATMENT SYSTEM				
- Booster Pumps	LS	1	$200,000	$200,000
- Collection Trench	LF	2,000	$39	$77,000
- Distribution Lines	LF	5,000	$8.80	$44,000
- Treatment Building	LS	1	$240,000	$240,000
- Ancillary Equipment (Booster Pumps, etc.)	LS	1	$50,000	$50,000
- Recharge System	LS	1	$50,000	$50,000
- Process Control Equipment	LS	1	$200,000	$200,000
- Instrumentation/Control/Electrical	LS	1	$50,000	$50,000
INSTALLATION OF MONITORING WELLS				
- Overburden	EA	10	$1,000	$10,000
TOTAL CAPITAL COST				$25,233,744
Contractor GC*, Overhead and Profit (15%) * - General Conditions				$3,785,062
Legal Fees, Licensing, Permitting (10%)				$2,523,374
Engineering/Administration (10%)				$2,523,374
SUBTOTAL				$34,065,555
Contingency (25%)				$8,516,389
Total Construction Cost				$42,581,943
Escalation (4% at 3 year Construction Period) Assume escalation for mid point of construction				$2,554,917
TOTAL PRESENT WORTH OF O&M COSTS				$945,838
TOTAL PRESENT WORTH				$46,082,698

* - See Appendix D for detailed cost breakdown.

TABLE 3-3 (CONT.)

FORMER TRUK AWAY LANDFILL
T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

TOTAL PRESENT WORTH COST ESTIMATE
OPERATION AND MAINTENANCE COSTS - ALTERNATIVE 3

LANDFILL CLOSURE AND CARGO BUILDING CONSTRUCTION

ITEM DESCRIPTION	Units	Quantity	Unit Price	Total Annual Cost	Operating Time (Year	Total Cost
PAVEMENT MAINTENANCE						
- Maintenance	YR	1	$10,000	$10,000	30	$172,900
- Erosion Control	YR	1	$10,000	$10,000	30	$172,920
LEACHATE/GROUNDWATER COLLECTION SYSTEM						
- Maintenance	YR	1	$10,000	$10,000	5	$44,520
- Sampling and Analysis	YR	1	$15,000	$15,000	5	$66,780
LEACHATE/GROUNDWATER TREATMENT SYSTEM						
- Labor	HR	260	$30	$7,800	5	$34,726
- Chemicals	YR	1	$5,000	$5,000	5	$22,260
- Sludge Disposal	55 - GAL.	10	$400	$4,000	5	$17,808
- Maintenance	YR	1	$10,000	$10,000	5	$44,520
- Electrical Supply (15%)	YR	1	$5,000	$5,000	5	$22,260
GROUNDWATER MONITORING						
- Sample	YR	1	$2,000	$2,000	10	$16,222
- Analysis	YR	1	$5,000	$5,000	10	$40,555
SURFACE WATER MONITORING						
- Sample	YR	1	$2,000	$2,000	10	$16,222
- Analysis	YR	1	$5,000	$5,000	10	$40,555
SETTLEMENT PLATE MONITORING	YR	1	$20,000	$20,000	2	$25,940
AIR MONITORING PROGRAM AND THERMAL TREATMENT O&M	YR	1	$15,000	$15,000	10	$121,665
SUBTOTAL						$859,853
CONTINGENCY (10%)						$85,985
TOTAL PRESENT WORTH OF 0&M COST						$945,838

* Used 4% interest rate for present worth analysis.

reduced long-term settlement of the underlying material. Larger weights and/or higher drop heights are required to treat thick deposits.

DDC is most effective on material that is above the water table and primarily granular in nature. The presence of groundwater and high fines content of the material tend to dampen the impact of DDC. DDC is not considered suitable for treatment of peat soils.

Once compacted, volume change of the underlying material of about 5 to 10 percent can be achieved for older landfills and up to about 25 percent for younger landfills. The increase in volume change for younger landfills, i.e., landfills which are still actively undergoing degradation, is thought to represent that portion of settlement that occurred previously in the older, now less active, landfills. The amount of volume change resulting from DDC is estimated by measuring how much the ground surface is lowered, i.e., crater depth. If insufficient volume change is initially achieved, repeated drops at one location may be required.

Lightweight structures constructed on top of DDC waste at other landfill sites have been reported to experience post construction settlement in the range of 0.25 percent of the underlying consolidated waste thickness (Ref. Lukas and Seiler, 1994). For purposes of this study, we estimate that the medium-weight to heavy-weight cargo facilities proposed at the site may experience up to approximately 12-in. of post construction primary settlement after DDC treatment. However, settlement estimates of DDC-treated waste should be made based on the characteristics of the site specific waste. Thus, a geotechnical subsurface investigation program is required after the DDC program is completed.

It should be noted that DDC-treated waste is still expected to experience some long-term creep settlement. The amount of creep settlement is dependent on the age of the waste and the amount of degradation that has occurred previously. For purposes of this study, we estimate that up to 1 foot of post construction long-term creep settlement may occur at the site after DDC treatment, although buildings constructed on deep foundations would not experience this amount of long-term settlement.

Deep foundations, consisting of driven or drilled-in piles, can be used to support the proposed cargo facilities. Supporting the taxiway and aprons on deep foundations is not considered cost effective. We recommend that other methods be used to limit post construction settlement of slabs-on-grade, taxiways, ramps and aprons. Deep foundations used to support buildings should extend through the waste and peat soils and bear in the underlying sand and gravel deposit. However, installing piles through the waste may be difficult due to the potential to encounter obstructions. Installation of drilled-in piles may accommodate obstructions somewhat better since the obstruction may be able to be removed using the drilling equipment.

Drilled-in piles should be designed to develop capacity as friction in the sand and gravel deposit with an allowable adhesion value of 500 pounds per square foot (psf).

Downdrag loads on the piles from ongoing settlement of the waste or peat should be considered in the design. Downdrag loads should be expected to be large. Settlement of structures supported on deep foundations is estimated to be less than one inch with no long-term creep settlement.

The lowest level floor slabs can be constructed as structural slabs that are supported on deep foundations. Alternatively, the slabs can be constructed as slabs-on-grade provided the slabs are separated from the portion of the building supported on deep foundations and can tolerate both primary and long-term settlement of the underlying waste and/or peat. Since settlement of slabs-on-grade, without DDC or preloading, are estimated to be excessive, we do not recommend that building slabs be supported on grade.

3.4.4 Wetland Issues

Constructing a taxiway from Runway 34-16 to the proposed cargo buildings will require a wetlands crossing at the site. Also the proposed taxiway on the eastern side of the landfill will require alterations to the wetlands in this area. Given these potential wetland impacts, it is likely that a compensatory wetland construction program will be required within Warwick city limits to off-set the wetland impacts from the proposed cargo building project. This section will discuss wetland impacts from the proposed project and wetland permitting issues related to this alternative.

This evaluation was prepared by Applied BioSystems of Kingston, Rhode Island and was prepared in accordance with the requirements of Section 10.03 and 11.02 of the Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act, April 1998. The wetland delineation at the landfill area was conducted on-site by Applied Bio-Systems, Inc. during September and October 2000.

The project will alter approximately 189,486 square feet of wetland area. This will be a direct loss of wetland area that is primarily associated with the intermittent stream channel. The three smaller wetlands that will be impacted are of lower wetland quality. These wetlands are contained in depressions and appear to have been created from past land use disturbances. The Area Subject to Flooding (ASF) was observed to contain water only following rainfall events. The wetlands are dominated with exotic and invasive plant species that have limited wildlife value. The plants observed include: common reed (Phragmites australis), purple loosestrife (Lythrum salicaria), Japanese bamboo (Polygonum cuspidatum). Sheet 60 of the Soil Survey of Rhode Island classifies these three small wetlands, as well as the entire land fill area, as having a Dumps (Du) soil unit. This soil unit consists of areas used for trash disposal (Rector, USDA, 1981). Although a large amount of permanent wetland alterations will result from this project; the wetland resources that will be disturbed are not functioning as healthy ecosystems.

A detailed evaluation of the review criteria that RIDEM – Office of Water Resources will review to determine whether this project represents a significant alteration of

wetlands is presented in Appendix C. A summary of the evaluation is provided below. The term project as stated below refers to the proposed Alternative 3.

Based on the evaluation of potential wetland impacts from Alternative 3, ABS highlighted the following significant findings:

- The project does not expect to significantly reduce the overall wildlife production of any of the wetland areas. Presently, the wetlands are in a compromised state due to the highly developed nature of the airport and surrounding urban community.

- It is not expected that there will be any significant reduction in the ability of the wetland area to satisfy the needs of a particular wildlife species. There are no wildlife species known to inhabit the wetlands on site whose requirements are so particular that they will not be satisfied as a result from the loss of wetland habitat. Also, there are no known rare wetland types, animal or plant species in the vicinity of the project.

- It is not expected that there will be a significant reduction in the suitability of any wetland for use by any wildlife species in the short-term or long-term. The intermittent stream channel will be altered which may reduce the suitability of the wetland for use as a travel corridor. Presently, the stream appears to be in a compromised water quality condition based on the red color and odors observed during the wetland delineation. Also, the airport is currently undertaking an odor control project within the stream near the control tower because of the odors produced by the de-icing chemicals that drain into the stream. It is unlikely that wetland-dependent wildlife species such as amphibians, turtles, otter, beaver, and mink would use this stream based on its present condition.

- It is not expected that there will be any more than a minimal intrusion of, or increase in, less valuable, invasive and/or exotic plant or animal species in a wetland due to the project.

- There are presently no opportunities for any passive or active recreational activities available to the public. There will be no elimination or severe limitation of any traditional human access to, along the bank of, up and/or down, or through any rivers, streams, ponds, or other freshwater wetlands. The entire airport property is completely restricted to the public for security purposes.

- The project does not expect to reduce the water quality functions and values or negative impacts to the natural water quality characteristics, either in the short- or long-term. Presently, the stream appears to be in a compromised water quality condition based on the red color and odors observed during the wetland delineation.

- There will be no placement of any matter or material beneath the surface water elevations or any erection of barriers within any ponds or flowing bodies of water that could cause any hazards to safety.

- There will be no restriction or significant modification of the path and/or velocities of flood flows for the 2-year, 10-year, 25-year, or 100-year frequency, 24-hour, Type III storm events so as to cause harm to life, property, or other functions and values provided by the freshwater wetland. There will be no placement of any structure or obstruction within a floodway so as to cause harm to life, property, or other functions and values provided by freshwater wetland.

There are three isolated wetlands within the project vicinity. All three of these wetlands will be permanently impacted by the project. The three smaller wetlands that will be impacted are of low wetland quality. These wetlands are contained in depressions and appear to have been created from past land use disturbances. The wetlands are dominated by exotic and invasive plant species that have limited wildlife value. Although a large amount of permanent wetland alterations will result from this project, the wetland resources that will be disturbed are not functioning as healthy ecosystems.

3.4.5 Permitting Required

RIDEM (Wetlands Division) will have jurisdiction over all the wetland areas within the project vicinity. A 50 foot Perimeter Wetland will be applied to the biological (flagged) edges of wetland. The other wetland areas are too small to receive a buffer. The intermittent stream channel will receive a 100 foot Riverbank Wetland extended from the riverbank edge as area within RIDEM jurisdiction. Any alterations proposed within these areas will need prior approval from RIDEM – Wetlands Division.

Also, this project will require an Application to Alter Freshwater Wetlands (formal application). The average review period for RIDEM – Wetlands is approximately twelve to eighteen months. This is dependent upon the application being complete and the wetland delineation being accurate with the wetland flagging visible in the field. An approval from RIDEM will require that the project minimize all impacts to freshwater wetlands and that there are no other alternatives. Several factors to consider may include the following:

- Are there any other areas within the airport property that this project could be constructed to avoid altering wetland areas;

- Can a detention system be designed to adequately handle the additional storm water flows from the project;

- Can the scale of this project be reduced; and
- If an additional, nearby development project is proposed, can both areas use the same access way.

The Army Corps of Engineers (ACOE) also has jurisdiction over all direct fill that is placed within wetland areas. Based on the large size of the alteration, greater than 1 acre in fill, this project would require an Individual Permit with the ACOE. Also, a RIDEM Water Quality Permit will be required.

3.5 Alternative Evaluation Summary

The results of the alternative evaluation are summarized on Table 3-1. A review of this table identifies the following significant findings:

1. The preliminary estimated cost to implement landfill closure/cargo building construction (Alternative 3) is $ 46,100,000 including long-term operation and maintenance costs. This estimate takes into account escalation costs (4 percent per year) since the soil preloading program would extend construction duration to an estimated three year period. Advantages of this option include protection of human health and the environment through landfill closure, and creation of employment opportunities for the community. Disadvantages of this alternative include the high cost to implement and the uncertainty in obtaining regulatory approval for the proposed wetland crossing.

2. Although CDM has assumed a certain cost associated with addressing differential settlement between buildings and ramps (as part of Alternative 3), operational issues associated with maintaining the proposed ramps are difficult to predict. While we believe that deep dynamic compaction, soil preloading and deep foundations will address short term settlement, the uncertainty of controlling a 12 inch difference in settlement over a 30 year design life requires significant attention by RIAC.

3. In all alternatives, regrading the landfill for closure purposes may attract a large bird population, which could pose a significant safety hazard to aircraft using the adjacent runway.

4. Significant wetland issues will be encountered in all three alternatives. In general, the wetlands at and adjacent to the former Truk Away Landfill are in a compromised state due to the highly developed nature of the airport and surrounding urban community. RIDEM and the United State Army Corps of Engineers, however, will still require RIAC or RIDOT complete the necessary permitting activities associated with work in a wetland. Given these potential wetland impacts, it is likely that a compensatory wetland construction program will be required within Warwick city limits to off-set the wetland impacts from the proposed cargo building project.

To further complicate the wetland issues, a site improvement project north of the site on airport property is currently under development where a wetland crossing will be required. RIAC should consider the permitting sequence of the two projects and may want to consider permitting these projects together.

TABLE 3-1

ALTERNATIVE EVALUATION SUMMARY
FORMER TRUK-AWAY LANDFILL

T.F. GREEN AIRPORT
WARWICK, RHODE ISLAND

Alternative Description	Ability to Receive Regulatory Approval	Advantages	Disadvantages	Preliminary Estimated Cost
Alternative 1 - Landfill Closure	High	Protective of human health and the environment.	Doesn't address long-term airport needs. No increase in jobs for community Regrading may cause bird hazard.	$10,900,000
Alternative 2 - Partial Landfill Closure with Soil Preloading Program	Medium to High	Partially protective of human health and the environment. Allows RIAC more time to evaluate economic feasibility of proposed site future use.	Partial landfill closure technically more difficult than complete closure. Soil pre-loading piles require maintenance. Regrading may cause bird hazard. Partial closure would be complicated by financial responsibility between RIAC, RIDOA, and RIDOT.	$13,300,000
Alternative 3 - Landfill Closure with Cargo Building Construction	Medium	Protective of human health and the environment. Generates new jobs for community. Addresses long-term airport operational needs given lack of available real estate.	Regulatory approval for wetland crossing may be difficult. Local opposition may be high. Regrading may cause bird hazard. Difference in predicted settlement between buildings and ramps will require maintenance. High cost - payback evaluation required.	$46,100,000

Appendix A
Soil Boring Logs

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: B-1 **Project: RHODE ISLAND AIRPORT CORP.** **Project #:**

Project Address: **City:** WARWICK **State:** RI **Zip:**

Date Start: 4/30/01 **Date End: 5/1/01** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 4/30	**Depth: 16'**	**Casing: out**	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	9"	3-2	CAP	Moist, dense, brown/black, medium to fine
-					31-8	2.0'	sand, trace to little silt, fine gravel, coarse sand.
-							(metal and plastic in tip)
-							
5'	S-2	5'-7'	24"	6"	8-10		Moist, dense, black/dark brown medium to
-					23-9		fine sand, some styrofoam, wood fibers,
-							glass, metal, plastic hard plastic, trace
-							silt (20% trash, no decomposition)
-							
10'		10'-12'	24"	0"	9-2		No recovery
-					11-18		
-							Plastic bits, glass fragments, plastic bags,
-							metal in wash at 13.5'
-							
15'	S-3	15'-17'	24"	0"	25-19		No recovery. Advanced 3" spoon.
-					11-9		Medium dense, plastic, metal. (100% trash,
-							no decomposition.)
-						WASTE	
-							
20'	S-4	20'-22'	24"	4"	9-9		Medium dense, wood, some metal,
-					7-6		little fabric. (100% trash, no decomposition)
-							
-							
-							Advanced 3" spoon.
25'	S-5	25'-27'	24"	0"	11-9		Medium dense, medium to fine sand and
-					7-5		glass, plastic, metal, little decomposed leaves.
-							(50% trash, no decomposition)
-							
-							Top 3": Rubber, glass, metal, some wood.
30'	S-6	30'-32'	24"	8"	11-10		Bottom 5": Dense, medium to fine sand, little
					31-75/0.5"		coarse sand, fine gravel, trace silt.

Driller: M. Thompson **Helper: D.Palmer** **Inspector: K. Polley**

Remarks: Page 1 of 2

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: B-1 **Project:** RHODE ISLAND AIRPORT CORP. **Project #:**

Project Address: **City:** WARWICK **State:** RI **Zip:**

Date Start: 4/30/01 **Date End: 5/1/01** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date: 4/30	**Depth: 16'**	**Casing: out**	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/ 6"	S/C	SAMPLE DESCRIPTION
-							(rubber in tip) (50% trash, no decompostion)
-							
-							
-							
35'	S-7	35'-37'	18"	5"	3-4	WASTE	Medium dense, black, wood, some plastic,
-					13-8		little silt, trace metal. (85% trash, no
-						37.5'	decomposition)
-							
-							
40'		40'-42'	24"	0"	6-5	PEAT	No recovery.
-					6-7	AND	(black silt on outside of spoon)
-						WASTE	Advanced 3" spoon.
-	S-8	43'-45'	24"	3"	12-11	42.5'	Medium dense, gray, coarse to fine sand
-					8-10	SAND	and gravel.
45'						AND	TERMINATED BORING AT 45'
-						GRAVEL	
-							
-							
-							
50'							
-							
-							
-							
-							
55'							
-							
-							
-							
-							
60'							

Driller: M. Thompson **Helper: D.Palmer** **Inspector: K. Polley**

Remarks: Page 2 of 2

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: B-2 **Project:** RHODE ISLAND AIRPORT CORP. **Project #:**

Project Address: **City:** WARWICK **State:** RI **Zip:**

Date Start: 5/1/01 **Date End: 5/1/01** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 5/1	**Depth:**	**Casing: out**	**Stabilization Per.** Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/ 6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	5"	3-6	CAP	Dry, medium dense, brown/black medium to fine
-					7-3	2.0	sand. (Plastic in tip)
-							
-							
5'		5'-7'	24"	0"	13-7		No recovery.
-					9-10		Brass and plastic in wash.
-							
-							
-							Advanced 3" spoon.
10'	S-2	10'-12'	24"	0"	9-4		Loose,gray/black/brown medium to fine sand,
-					5-7		some to little silt, little paper. (little
-							decomposition), rubber, glass, plastic.
-							(15% trash, no decomposition)
-							
15'		15'-17'	24"	0"	20-14		No recovery.
-					6-3		
-	S-3	17'-19'	24"	5"	5-8	WASTE	Medium dense, gray/black medium to fine
-					10-12		sand, some plastic, wood, glass, metal,
-							little silt. (25% trash, no decomposition)
20'	S-4	20'-22'	24"	5"	8-8		Medium dense, paper, trace wood, (100%
-					14-9		trash, little decomposition)
-							
-							
-						24.0	24' rollerbitting was soft.
25'		25'-27'	24"	0"	6-2		No recovery. Advanced 3" spoon.
-					1-2		Very loose, black, organic silt, metal,
-						PEAT	glass, plastic, little medium to fine sand.
-	U-1	28'-30'	24"	0"		AND	(50% trash, little decomposition)
-						WASTE	No recovery in U-1.
30'							

Driller: M. Thompson **Helper: D.Palmer** **Inspector: K. Polley**

Remarks: Page 1 of 2

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: B-2 **Project:** RHODE ISLAND AIRPORT CORP. **Project #:**

Project Address: **City:** WARWICK **State:** RI **Zip:**

Date Start: 5/1/01 **Date End: 5/1/01** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing: out**	**Stabilization Per.**
5/1			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	U-2	31'-33'	24"	10"			
-							
-	U-3	33.5'-35.5'	24"	12"		PEAT	
-						AND	
35'						WASTE	
-	S-6	36'-38'	24"	24"	WOH/22-2		Top 2": very loose, black organic silt,
-						37'	little peat. Bottom 22": Very loose, gray silt,
-						SILT	trace roots.
-							
40'	S-7	40'-42'	24"	8"	6-4	40'	Loose, gray fine sand, little silt.
-					4-5		
-							
-							
-						SAND	
45'	S-8	45'-47'	24"	8"	6-4		Same as above
-					5-3		
-							TERMINATED BORING AT 47'
-							
-							
50'							
-							
-							
-							
-							
55'							
-							
-							
-							
-							
60'							

Driller: M. Thompson **Helper: D.Palmer** **Inspector: K. Polley**

Remarks: Page 2 of 2

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: B-3 **Project:** RHODE ISLAND AIRPORT CORP **Project #:**

Project Address: **City:** WARWICK **State:** RI **Zip:**

Date Start: 5/2/01 **Date End: 5/2/01** **Location: See Plan**

Casing: H-S-A	**Sampler:**	**Casing: 4-1/4" ID**	**Sampler:**
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

G R O U N D W A T E R O B S E R V A T I O N

Date:	**Depth:**	**Casing: out**	**Stabilization Per.**
5/2			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/ 6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	10"	2-6	CAP	Top 6": Brown/black, medium to fine
-					11-10	1.5'	sand, some coarse sand, gravel.
-							Bottom 4": Plastic, wood, (25% trash
-							little decomposition)
5'							
-							2.5'-3.5'- very soft rollerbitting, wash came out
-							out foamy with strong odor.
-							Rubber, plastic, wood, metal in wash at 6.5'
-							Black chunks in wash water at 9.5'
10'	S-2	10'-12'	24"	7"	4-4		Top 3": Wet, loose, newspaper, (little
-					4-5		decomposition), plastic, glass.
-							Bottom 6": Loose, leaves, sticks,
-						WASTE	(100% trash, no decomposition)
-							
15'							
-							
-							
-							
20'	S-3	20'-22'	24"	5"	13-11		Medium dense, fabric, metal, cardboard,
-					7-8		some medium to fine sand. (50% trash, little
-							decomposition.)
-							TERMINATED BORING AT 22'
-							
25'							
-							
-							
-							
30'							

Driller: M. Thompson **Helper: D.Palmer** **Inspector: K. Polley**

Remarks:

S/#: Sample **PEN:** Penetration **REC:** Recovery **S/C:** Strata Change

Appendix B
Geotechnical Laboratory Testing Results

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warwick,RI
Project Number:	14815-26553-TO1.CG
Sample Number:	S-2
Sample Depth(ft):	5-7
Sample Date:	5/1/01
Sample Location:	CDM-B1
Lab ID Number:	285

Tested By:	MY
Test Date:	5/10/01
Procedure:	C
Temperature:	440 ^{o}C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	1302
Tin Weight (g)	98.5
Wet Weight of Sample & Tin (g)	255.6
Dry Weight of Sample & Tin (g)	216.9
Weight of Water (g)	38.7
Weight of Dry Soil (g)	118.4
Moisture Content (%)	32.7

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	16.7
Porcelain Dish + Oven Dried Soil (g)	36.9
Weight of Oven Dried Soil (g)	20.2
Weight of Dish & Burned Soil (g)	35.7
Weight of Burned Soil (g)	19.0
Weight of Organic Material (g)	1.2
Ash Content (%)	94.1

Organic Content, (%)

5.9

Note:
Sample composed of approx. 20% Soil/Unidentifiable Material, 20% Plastic, 50% Wood/Plant/Roots, 10% Metal

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warvick, RI
Project Number:	14815-26553-TO1.CG
Sample Number:	S-2
Sample Depth(ft):	10-12
Sample Date:	5/1/01
Sample Location:	CDM-B2
Lab ID Number:	286

Tested By:	MY
Test Date:	5/10/01
Procedure:	C
Temperature:	440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	GS
Tin Weight (g)	98.1
Wet Weight of Sample & Tin (g)	273.7
Dry Weight of Sample & Tin (g)	215.3
Weight of Water (g)	58.4
Weight of Dry Soil (g)	117.2
Moisture Content (%)	49.8

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	17.4
Porcelain Dish + Oven Dried Soil (g)	32.5
Weight of Oven Dried Soil (g)	15.1
Weight of Dish & Burned Soil (g)	31.1
Weight of Burned Soil (g)	13.7
Weight of Organic Material (g)	1.4
Ash Content (%)	90.7

Organic Content, (%)

9.3

Note:
Sample composed of approx. 60% Soil/Unidentifiable Material, 10% Plastic, 20% Wood/Plant/Roots, 10% Glass

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warvick, RI
Project Number:	14815-26553-TO1.CG
Sample Number:	S-3
Sample Depth(ft):	17-19
Sample Date:	5/1/01
Sample Location:	CDM-B2
Lab ID Number:	288

Tested By:	MY
Test Date:	5/10/01
Procedure:	C
Temperature:	440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	J2
Tin Weight (g)	83.9
Wet Weight of Sample & Tin (g)	243.5
Dry Weight of Sample & Tin (g)	206.0
Weight of Water (g)	37.5
Weight of Dry Soil (g)	122.1
Moisture Content (%)	30.7

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	19.1
Porcelain Dish + Oven Dried Soil (g)	34.2
Weight of Oven Dried Soil (g)	15.1
Weight of Dish & Burned Soil (g)	32.9
Weight of Burned Soil (g)	13.8
Weight of Organic Material (g)	1.3
Ash Content (%)	91.4

Organic Content, (%)

8.6

Note:
Sample composed of approx. 60% Soil/Unidentifiable Material, 5% Plastic, 35% Wood/Plant/Roots

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warwick,RI
Project Number:	14815-26553-TO1.CG
Sample Number:	S-4
Sample Depth(ft):	20-22
Sample Date:	5/1/01
Sample Location:	CDM-B2
Lab ID Number:	289

Tested By:	MY
Test Date:	5/10/01
Procedure:	C
Temperature:	440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	J4
Tin Weight (g)	83.2
Wet Weight of Sample & Tin (g)	132.6
Dry Weight of Sample & Tin (g)	102.1
Weight of Water (g)	30.5
Weight of Dry Soil (g)	18.9
Moisture Content (%)	161.4

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	18.7
Porcelain Dish + Oven Dried Soil (g)	23.7
Weight of Oven Dried Soil (g)	5.0
Weight of Dish & Burned Soil (g)	19.2
Weight of Burned Soil (g)	0.5
Weight of Organic Material (g)	4.5
Ash Content (%)	10.0

Organic Content, (%)

90.0

Note:
Sample composed of approx. 1% Soil/Unidentifiable Material, 99% Paper

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC		
Project Name:	Cargo Facilities-TF Green Airport	Tested By:	MY
Project Location:	Warwick,RI	Test Date:	5/10/01
Project Number:	14815-26553-TO1.CG	Procedure:	C
Sample Number:	S-5	Temperature:	440 °C
Sample Depth(ft):	25-27		
Sample Date:	5/1/01		
Sample Location:	CDM-B2		
Lab ID Number:	284		

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	1305
Tin Weight (g)	98.8
Wet Weight of Sample & Tin (g)	240.5
Dry Weight of Sample & Tin (g)	166.6
Weight of Water (g)	73.9
Weight of Dry Soil (g)	67.8
Moisture Content (%)	109.0

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	18.5
Porcelain Dish + Oven Dried Soil (g)	33.3
Weight of Oven Dried Soil (g)	14.8
Weight of Dish & Burned Soil (g)	30.4
Weight of Burned Soil (g)	11.9
Weight of Organic Material (g)	2.9
Ash Content (%)	80.4

Organic Content, (%)

19.6

Note:
Sample composed of approx. 50% Soil/Unidentifiable Material, 40% Plastic, 10% Wood/Plant/Roots

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warwick, RI
Project Number:	14815-26553-TO1.CG
Sample Number:	U-1
Sample Depth(ft):	31-33
Sample Date:	5/1/01
Sample Location:	CDM-B2
Lab ID Number:	291

Tested By:	MY
Test Date:	5/21/01
Procedure:	C
Temperature:	440 ^{o}C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	PC5
Tin Weight (g)	9.4
Wet Weight of Sample & Tin (g)	169.3
Dry Weight of Sample & Tin (g)	32.8
Weight of Water (g)	136.5
Weight of Dry Soil (g)	23.5
Moisture Content (%)	582.1

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	18.1
Porcelain Dish + Oven Dried Soil (g)	24.2
Weight of Oven Dried Soil (g)	22.1
Weight of Dish & Burned Soil (g)	20.5
Weight of Burned Soil (g)	2.4
Weight of Organic Material (g)	3.7
Ash Content (%)	10.6

Organic Content, (%)

89.4

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warwick, RI
Project Number:	14815-26553-TO1.CG
Sample Number:	U-2
Sample Depth(ft):	33-35
Sample Date:	5/1/01
Sample Location:	CDM-B2
Lab ID Number:	292

Tested By:	RW
Test Date:	5/15/01
Procedure:	C
Temperature:	440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	MJ10
Tin Weight (g)	9.4
Wet Weight of Sample & Tin (g)	82.8
Dry Weight of Sample & Tin (g)	28.1
Weight of Water (g)	54.7
Weight of Dry Soil (g)	18.8
Moisture Content (%)	291.2

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	18.1
Porcelain Dish + Oven Dried Soil (g)	33.7
Weight of Oven Dried Soil (g)	15.6
Weight of Dish & Burned Soil (g)	30.4
Weight of Burned Soil (g)	12.3
Weight of Organic Material (g)	3.4
Ash Content (%)	78.6

Organic Content, (%)

21.4

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Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC
Project Name:	Cargo Facilities-TF Green Airport
Project Location:	Warwick,RI
Project Number:	14815-26553-TO1.CG
Sample Number:	S-2
Sample Depth(ft):	10-12
Sample Date:	5/1/01
Sample Location:	CDM-B3
Lab ID Number:	287

Tested By:	MY
Test Date:	5/10/01
Procedure:	C
Temperature:	440 °C

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	J11
Tin Weight (g)	82.6
Wet Weight of Sample & Tin (g)	165.9
Dry Weight of Sample & Tin (g)	107.5
Weight of Water (g)	58.4
Weight of Dry Soil (g)	24.9
Moisture Content (%)	234.5

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	18.1
Porcelain Dish + Oven Dried Soil (g)	21.9
Weight of Oven Dried Soil (g)	3.8
Weight of Dish & Burned Soil (g)	19.4
Weight of Burned Soil (g)	1.3
Weight of Organic Material (g)	2.5
Ash Content (%)	34.2

Organic Content, (%)

65.8

Note:
Sample composed of approx. 5% Soil/Unidentifiable Material, 10% Plastic, 85% Paper

CDM Jessberger
Geotechnical Engineering Laboratory

Standard Test Method for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils(ASTM D2974)

Client:	RIAC		
Project Name:	Cargo Facilities-TF Green Airport	Tested By:	MY
Project Location:	Warvick, RI	Test Date:	5/10/01
Project Number:	14815-26553-TO1.CG		
Sample Number:	S-3	Procedure:	C
Sample Depth(ft):	20-22	Temperature:	440 °C
Sample Date:	5/1/01		
Sample Location:	CDM-B3		
Lab ID Number:	290		

AS RECEIVED MOISTURE CONTENT	
Tin Dish Identity	J15
Tin Weight (g)	86.3
Wet Weight of Sample & Tin (g)	210.6
Dry Weight of Sample & Tin (g)	174.8
Weight of Water (g)	35.8
Weight of Dry Soil (g)	88.5
Moisture Content (%)	40.5

ASH CONTENT	
Porcelain Dish Identity	XX
Porcelain Dish Weight (g)	18.5
Porcelain Dish + Oven Dried Soil (g)	40.6
Weight of Oven Dried Soil (g)	22.1
Weight of Dish & Burned Soil (g)	39.3
Weight of Burned Soil (g)	20.8
Weight of Organic Material (g)	1.3
Ash Content (%)	94.1

Organic Content, (%)

5.9

Note:
Sample composed of approx. 40% Soil/Unidentifiable Material, 10% Plastic, 20% Paper, 30% Metal

CDM Jessberger
Geotechnical Engineering Laboratory

Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D4318)

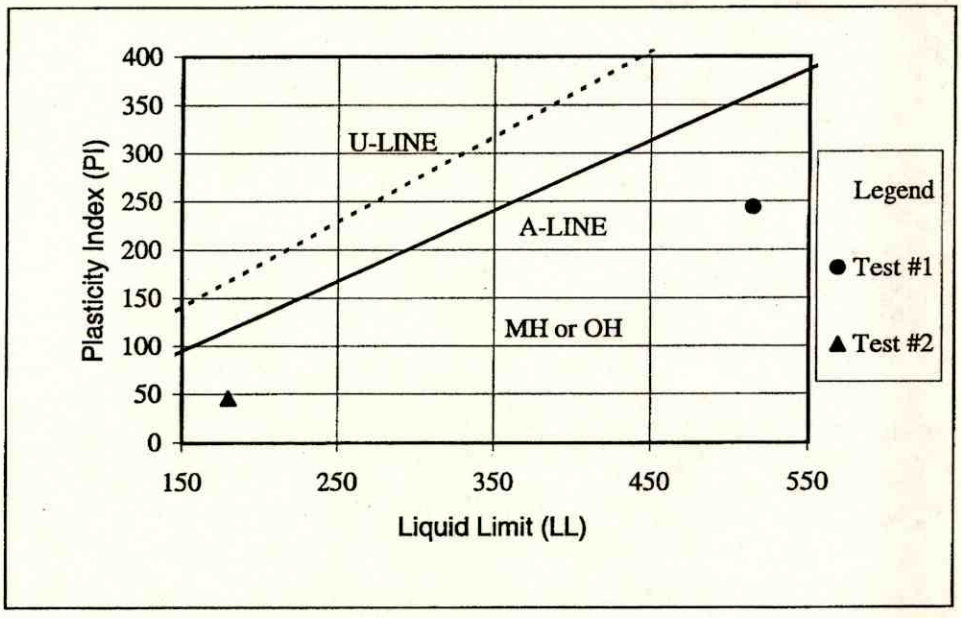
Client:	RIAC
Project Name:	TF Green Airport-Cargo Facilities
Project Location:	Warwick, RI
Project Number:	14815-26553-TO1.CG

Results

Test Number:	**1**	**2**
Sample Number:	U-1	U-2
Sample Location:	CDM-B2	CDM-B2
Lab ID Number:	291	292
Tested By:	MY	RW
Test Date:	5/22/01	5/14/01
Sample Depth (ft):	31-33	33-35
As Rec'd Water Cont. (%):	468.5	291.2
Liquid Limit (LL)	515	180
Plastic Limit (PL)	271	134
Plasticity Index (PI)	244	46

Plasticity Chart

For classification of fine-grained soils and fine-grained fraction of coarse-grained soils.



Reference: ASTM D 2487

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Consolidation Test

Phase Relations Sheet

Dry Mass of Solids, M_d [gm]	12.46
Initial Water Content, w_0	383.60%
Final Water Content, w_f	203.86%
Initial Volume of Specimen, V_0 [in^3]	3.59
Initial Dry Density, ρ_d [g/cm^3]	0.21
Initial Dry Unit Weight, γ_d [lbf/ft^3]	13.21
Volume of Solids, V_s [inch^3]	0.39
Height of Solids, H_s [inch]	0.0802
Initial Voids Ratio, e_0	8.123
Final Voids Ratio, e_f	3.936
Initial Degree of Saturation, S_0	91.1%
Final Degree of Saturation, S_f	100.0%

CDM Jessberger Geotechnical Laboratory

Consolidation Test

Increment Summary Sheet

Note: Data from Log Time Constructions

Increment	σ'_{vc} [tsf]	Total Displacement [inch]			Specimen Height [inch]			Strain, ε			Voids Ratio, *e*		
		d_{50}	d_{100}	d_{final}	H_{50}	H_{100}	H_{final}	ε_{50}	ε_{100}	ε_{final}	e_{50}	e_{100}	e_{final}
Seating	0.00	0.0000	0.0000	0.0000	0.7320	0.7320	0.7320	0.0000	0.0000	0.0000	8.1225	8.1225	8.1225
1	0.19	0.0129	0.0177	0.0284	0.7190	0.7143	0.7036	0.0177	0.0241	0.0388	7.9613	7.9023	7.7686
2	0.33	0.0336	0.0367	0.0534	0.6983	0.6952	0.6786	0.0459	0.0502	0.0730	7.7037	7.6650	7.4570
3	0.61	0.0618	0.0666	0.0972	0.6701	0.6654	0.6348	0.0845	0.0910	0.1328	7.3517	7.2926	6.9111
4	1.16	0.1151	0.1300	0.1828	0.6169	0.6019	0.5492	0.1572	0.1777	0.2497	6.6884	6.5019	5.8442
5	2.27	0.2108	0.2383	0.2548	0.5212	0.4937	0.4772	0.2880	0.3255	0.3481	5.4956	5.1531	4.9469
6	4.49	0.2895	0.3246	0.3427	0.4425	0.4073	0.3893	0.3955	0.4435	0.4682	4.5147	4.0764	3.8513
7	8.92	0.3742	0.4067	0.4215	0.3577	0.3253	0.3105	0.5113	0.5556	0.5759	3.4584	3.0542	2.8692
8	2.27	0.4143	0.4079	0.4072	0.3176	0.3240	0.3248	0.5660	0.5573	0.5563	2.9589	3.0386	3.0475
9	0.61	0.3972	0.3868	0.3861	0.3347	0.3452	0.3459	0.5427	0.5284	0.5275	3.1715	3.3017	3.3104
10	0.06	0.3622	0.3378	0.3351	0.3697	0.3941	0.3969	0.4949	0.4615	0.4578	3.6082	3.9122	3.9461

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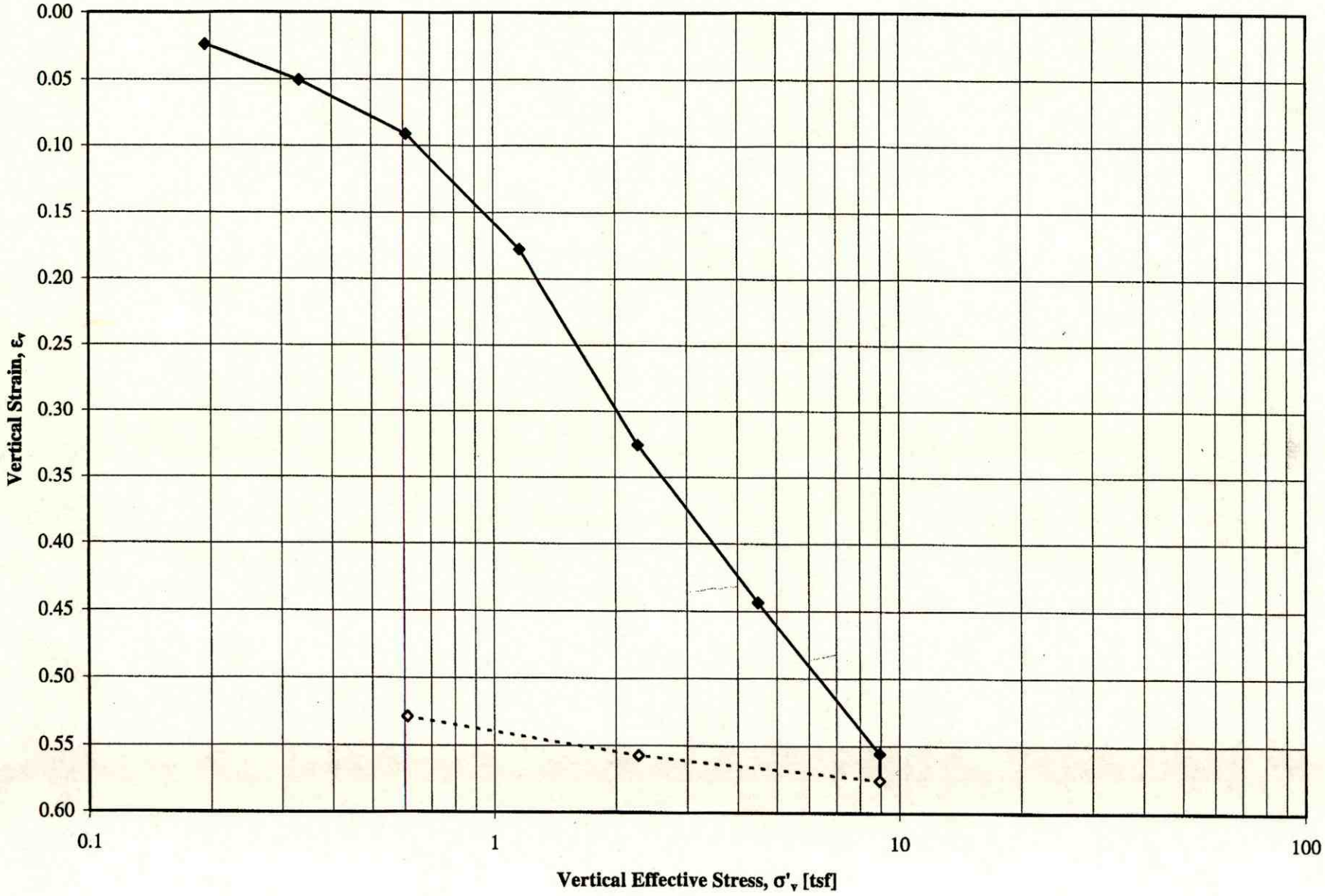
Consolidation Test

Parameter Summary Sheet

Increment	σ'_{vc} [tsf]	Time [sec]		$2H_{d50}$ [inch]		Coef. of Consol, c_v [ft^2/day]			Coef. of Compress, a_v [1/tsf]	Hydraulic Conduct., *k* [inch/sec]			Coef. of Second. Compr., $c_{\alpha\varepsilon}$
		t_{90}	t_{50}	$t^{1/2}$	log t	$t^{1/2}$	log t	Average		$t^{1/2}$	log t	Average	
Seating	-	-	-	-	-	-	-	-	-	-	-	-	-
1	0.19	12	3	0.7199	0.7190	5.3812	4.6280	5.0046	2.2705	5.91E-06	5.08E-06	5.50E-06	4.754E-03
2	0.33	12	3	0.6996	0.6983	5.3861	4.5380	4.9620	0.9013	2.42E-06	2.04E-06	2.23E-06	5.055E-03
3	0.61	19	3	0.6692	0.6701	2.9424	4.2850	3.6137	0.7906	1.21E-06	1.76E-06	1.48E-06	1.036E-02
4	1.16	32	9	0.6202	0.6169	1.5060	1.3086	1.4073	0.8916	7.57E-07	6.58E-07	7.08E-07	2.055E-02
5	2.27	49	143	0.5379	0.5212	0.7511	0.0560	0.4036	0.7850	3.94E-07	2.94E-08	2.11E-07	2.323E-02
6	4.49	104	105	0.4591	0.4425	0.2577	0.0551	0.1564	0.3185	6.45E-08	1.38E-08	3.92E-08	2.413E-02
7	8.92	250	188	0.3704	0.3577	0.0699	0.0201	0.0450	0.1524	1.04E-08	2.98E-09	6.67E-09	1.495E-02
8	2.27	166	348	0.3139	0.3176	0.0753	0.0086	0.0419	0.0028	2.31E-10	2.63E-11	1.29E-10	-3.060E-03
9	0.61	506	2630	0.3275	0.3347	0.0269	0.0013	0.0141	-0.1826	•	•	•	-6.421E-03
10	0.06	38259	14890	0.3650	0.3697	0.0004	0.0003	0.0004	-1.8356	•	•	•	-1.295E-02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Vertical Strain, ε_v
0.1
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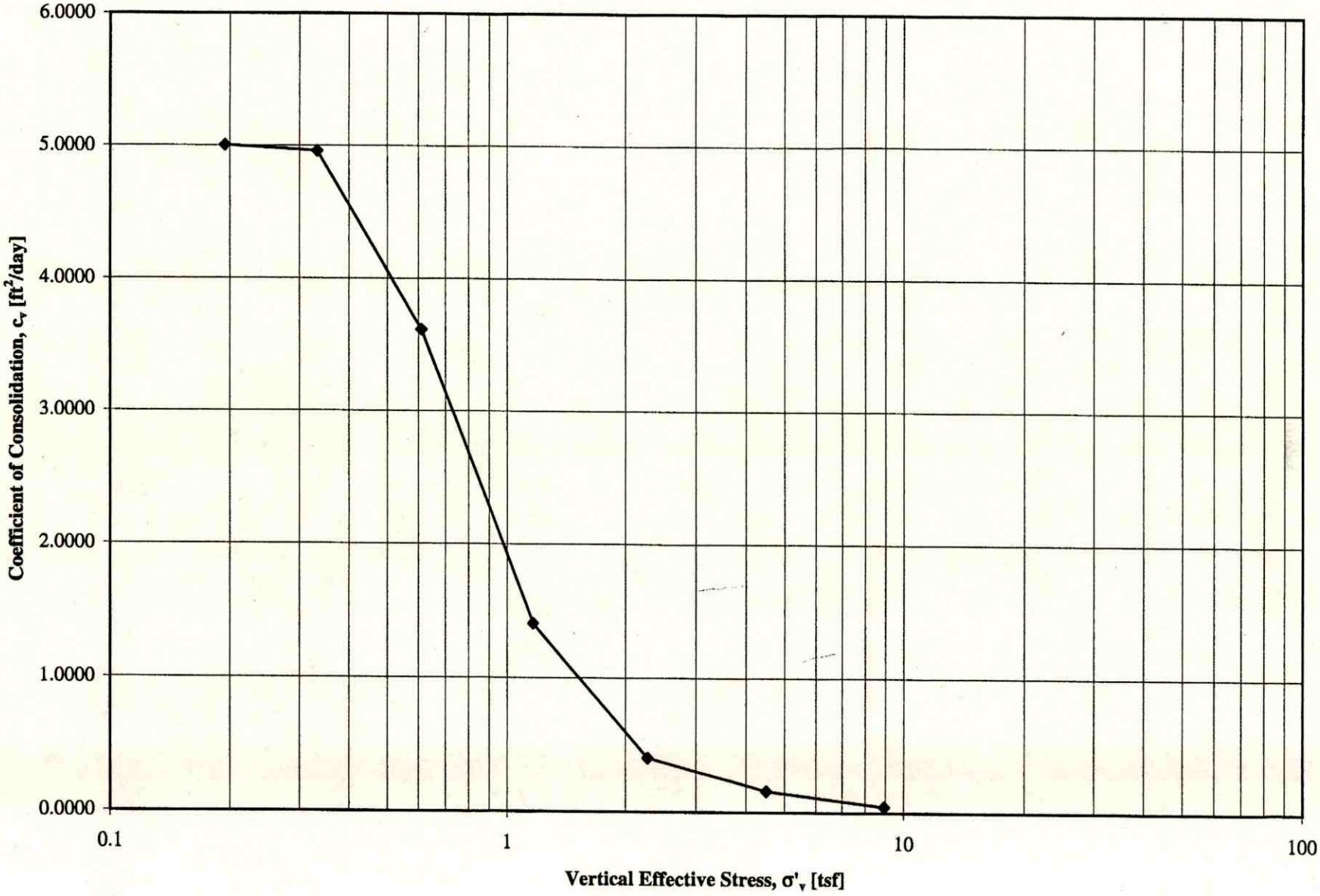
10
100
Vertical Effective Stress, σ'_v [tsf]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Coefficient of Consolidation, c_v [ft^2/day]
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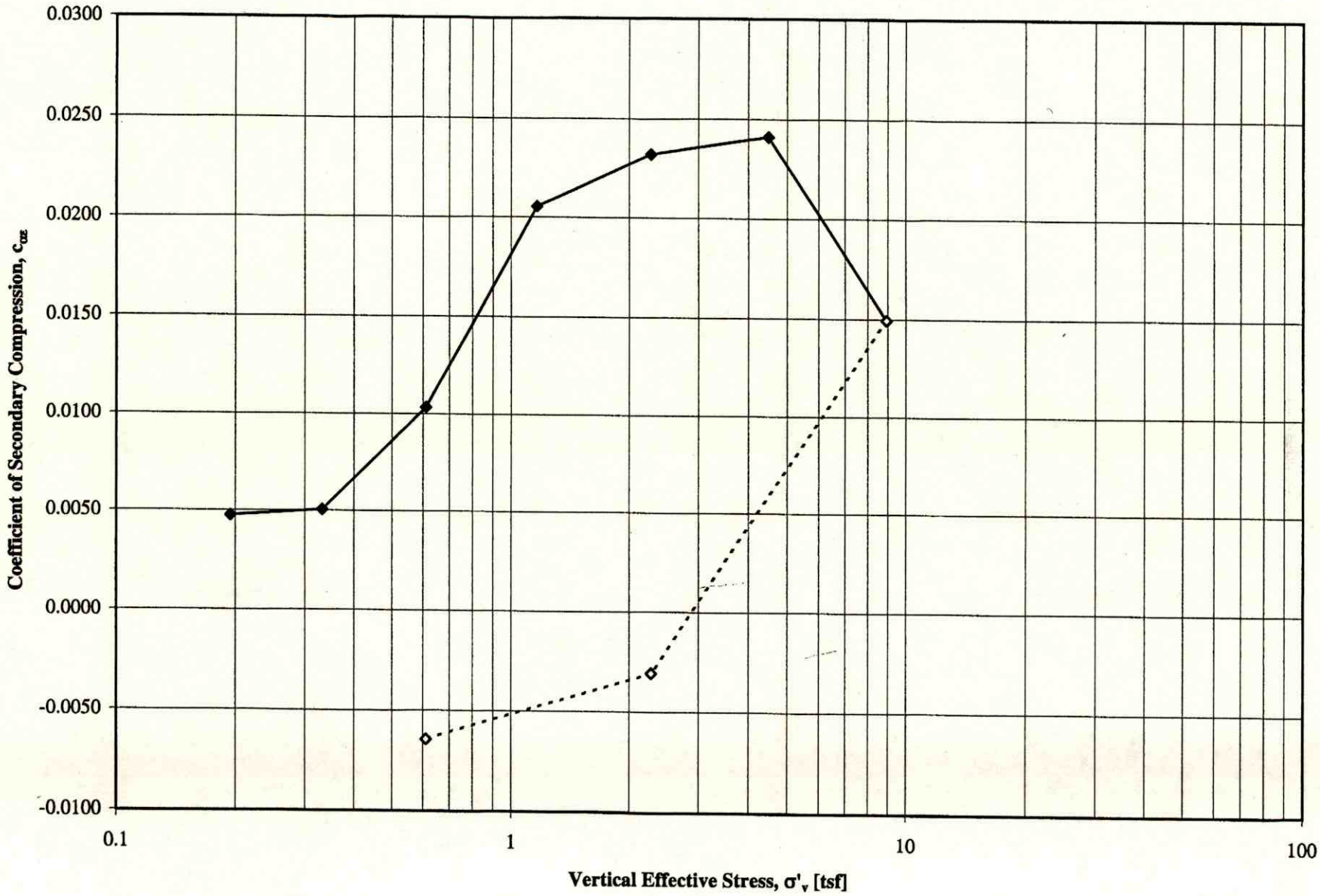
1
10
100
Vertical Effective Stress, σ'_v [tsf]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0.0000
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-0.0100
Coefficient of Secondary Compression, $c_{\alpha\varepsilon}$
0.1
1
10
100
Vertical Effective Stress, σ'_v [tsf]

CDM Jessberger Geotechnical Laboratory

Consolidation Test

Phase Relations Sheet

Dry Mass of Solids, M_d [gm]	18.34
Initial Water Content, w_0	263.5%
Final Water Content, w_f	138.5%
Initial Volume of Specimen, V_0 [in^3]	3.60
Initial Dry Density, ρ_d [g/cm^3]	0.31
Initial Dry Unit Weight, γ_d [lbf/ft^3]	19.4
Volume of Solids, V_s [inch^3]	0.46
Height of Solids, H_s [inch]	0.0927
Initial Voids Ratio, e_0	6.870
Final Voids Ratio, e_f	3.394
Initial Degree of Saturation, S_0	94.0%
Final Degree of Saturation, S_f	100.0%

CDM Jessberger Geotechnical Laboratory

Consolidation Test

Increment Summary Sheet

Note: Data from Log Time Constructions

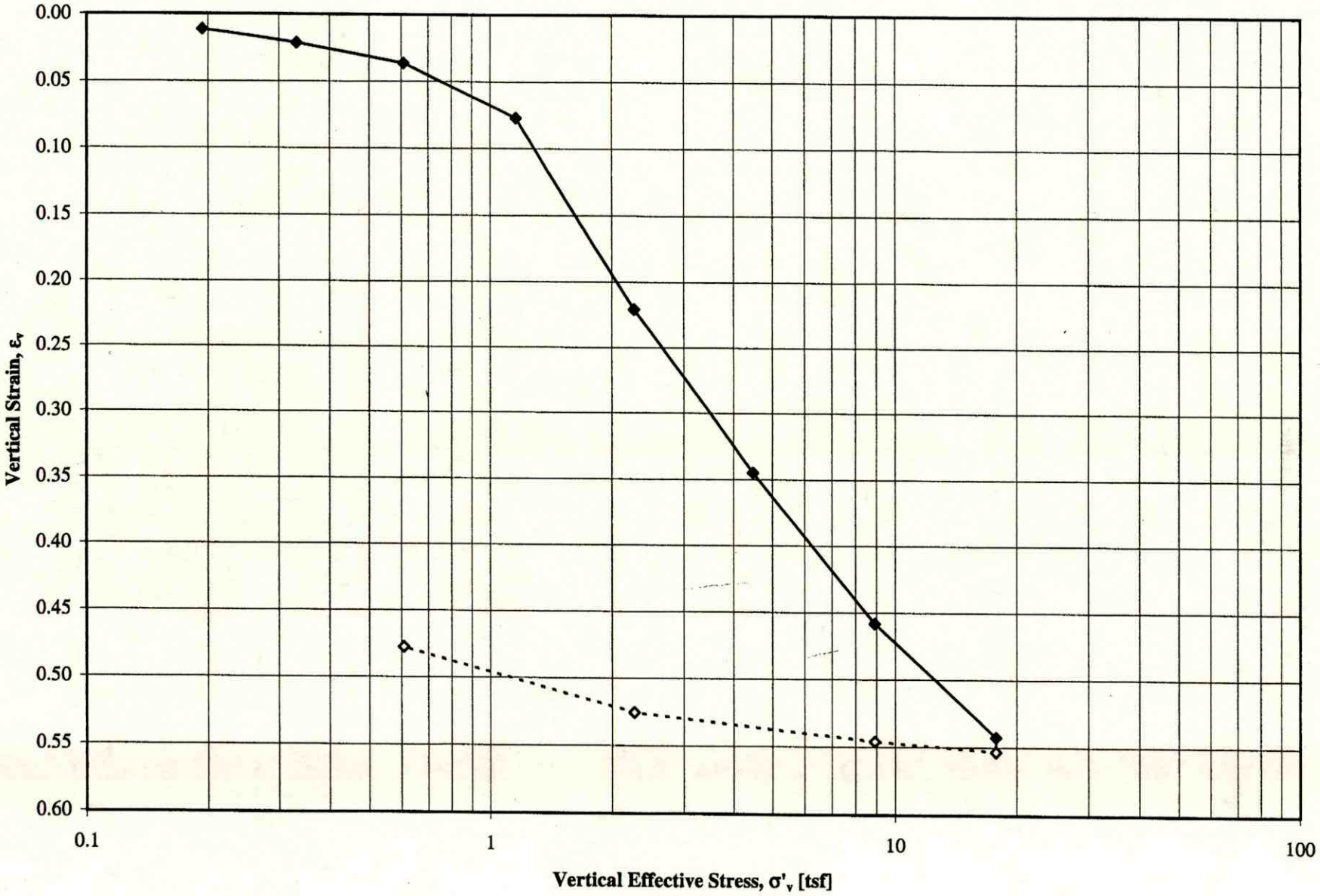
Increment	σ'_{vc} [tsf]	Total Displacement [inch]			Specimen Height [inch]			Strain, ε			Voids Ratio, *e*		
		d_{50}	d_{100}	d_{final}	H_{50}	H_{100}	H_{final}	ε_{50}	ε_{100}	ε_{final}	e_{50}	e_{100}	e_{final}
Seating	0.06	0.0000	0.0000	0.0000	0.7299	0.7299	0.7299	0.0000	0.0000	0.0000	6.8703	6.8703	6.8703
1	0.19	0.0042	0.0084	0.0106	0.7257	0.7215	0.7193	0.0057	0.0115	0.0145	6.8251	6.7800	6.7560
2	0.33	0.0135	0.0156	0.0196	0.7164	0.7142	0.7103	0.0185	0.0214	0.0269	6.7250	6.7016	6.6589
3	0.61	0.0239	0.0267	0.0332	0.7060	0.7031	0.6967	0.0327	0.0366	0.0455	6.6130	6.5821	6.5123
4	1.16	0.0456	0.0562	0.0787	0.6842	0.6736	0.6512	0.0625	0.0770	0.1078	6.3785	6.2641	6.0216
5	2.26	0.1199	0.1611	0.1884	0.6100	0.5688	0.5415	0.1643	0.2207	0.2581	5.5774	5.1331	4.8387
6	4.47	0.2204	0.2515	0.2677	0.5094	0.4784	0.4622	0.3020	0.3446	0.3668	4.4932	4.1586	3.9836
7	8.89	0.3011	0.3343	0.3486	0.4287	0.3956	0.3813	0.4126	0.4580	0.4776	3.6230	3.2657	3.1112
8	17.73	0.3720	0.3958	0.4038	0.3578	0.3340	0.3261	0.5097	0.5424	0.5533	2.8586	2.6018	2.5159
9	8.89	0.4007	0.3984	0.3983	0.3292	0.3315	0.3316	0.5490	0.5458	0.5457	2.5496	2.5745	2.5753
10	2.26	0.3900	0.3834	0.3834	0.3398	0.3464	0.3465	0.5344	0.5254	0.5253	2.6646	2.7355	2.7359
11	0.61	0.3589	0.3484	0.3520	0.3709	0.3814	0.3779	0.4918	0.4774	0.4823	3.0000	3.1130	3.0745
12	0.06	0.3308	0.3210	0.3217	0.3991	0.4089	0.4082	0.4532	0.4398	0.4408	3.3033	3.4091	3.4013

CDM Jessberger Geotechnical Laboratory

Consolidation Test

Parameter Summary Sheet

Increment	σ'_{vc} [tsf]	Time [sec]		$2H_{d50}$ [inch]		Coef. of Consol, c_v [ft^2/day]			Coef. of Compress, a_v [1/tsf]	Hydraulic Conduct., *k* [inch/sec]			Coef. of Second. Compr., $c_{\alpha\varepsilon}$
		t_{90}	t_{50}	$t^{1/2}$	log t	$t^{1/2}$	log t	Average		$t^{1/2}$	log t	Average	
Seating	-	-	-	-	-	-	-	-	-	-	-	-	-
1	0.19	21	14	0.7274	0.7257	3.1809	1.0732	2.1270	0.7130	1.26E-06	4.24E-07	8.40E-07	1.754E-03
2	0.33	86	19	0.7165	0.7164	0.7549	0.8122	0.7836	0.2990	1.27E-07	1.36E-07	1.31E-07	1.781E-03
3	0.61	56	13	0.7059	0.7060	1.1269	1.0926	1.1098	0.2544	1.63E-07	1.58E-07	1.61E-07	3.343E-03
4	1.16	81	42	0.6871	0.6842	0.7413	0.3270	0.5341	0.3599	1.57E-07	6.91E-08	1.13E-07	1.321E-02
5	2.26	980	332	0.6170	0.6100	0.0494	0.0331	0.0413	0.6605	2.15E-08	1.44E-08	1.80E-08	2.376E-02
6	4.47	1005	428	0.5171	0.5094	0.0338	0.0179	0.0259	0.2892	7.73E-09	4.09E-09	5.91E-09	2.557E-02
7	8.89	1190	402	0.4348	0.4287	0.0202	0.0135	0.0169	0.1336	2.53E-09	1.69E-09	2.11E-09	1.713E-02
8	17.73	1490	519	0.3616	0.3578	0.0112	0.0073	0.0092	0.0499	6.25E-10	4.08E-10	5.17E-10	1.806E-02
9	8.89	125	250	0.3279	0.3292	0.1090	0.0128	0.0609	0.0020	2.72E-10	3.20E-11	1.52E-10	-8.221E-05
10	2.26	1989	1576	0.3377	0.3398	0.0073	0.0022	0.0047	-0.0289	•	•	•	-1.261E-03
11	0.61	17689	9041	0.3675	0.3709	0.0010	0.0004	0.0007	-0.2629	•	•	•	-5.892E-03
12	0.06	98596	23080	0.3995	0.3991	0.0002	0.0002	0.0002	-0.8934	•	•	•	-7.399E-03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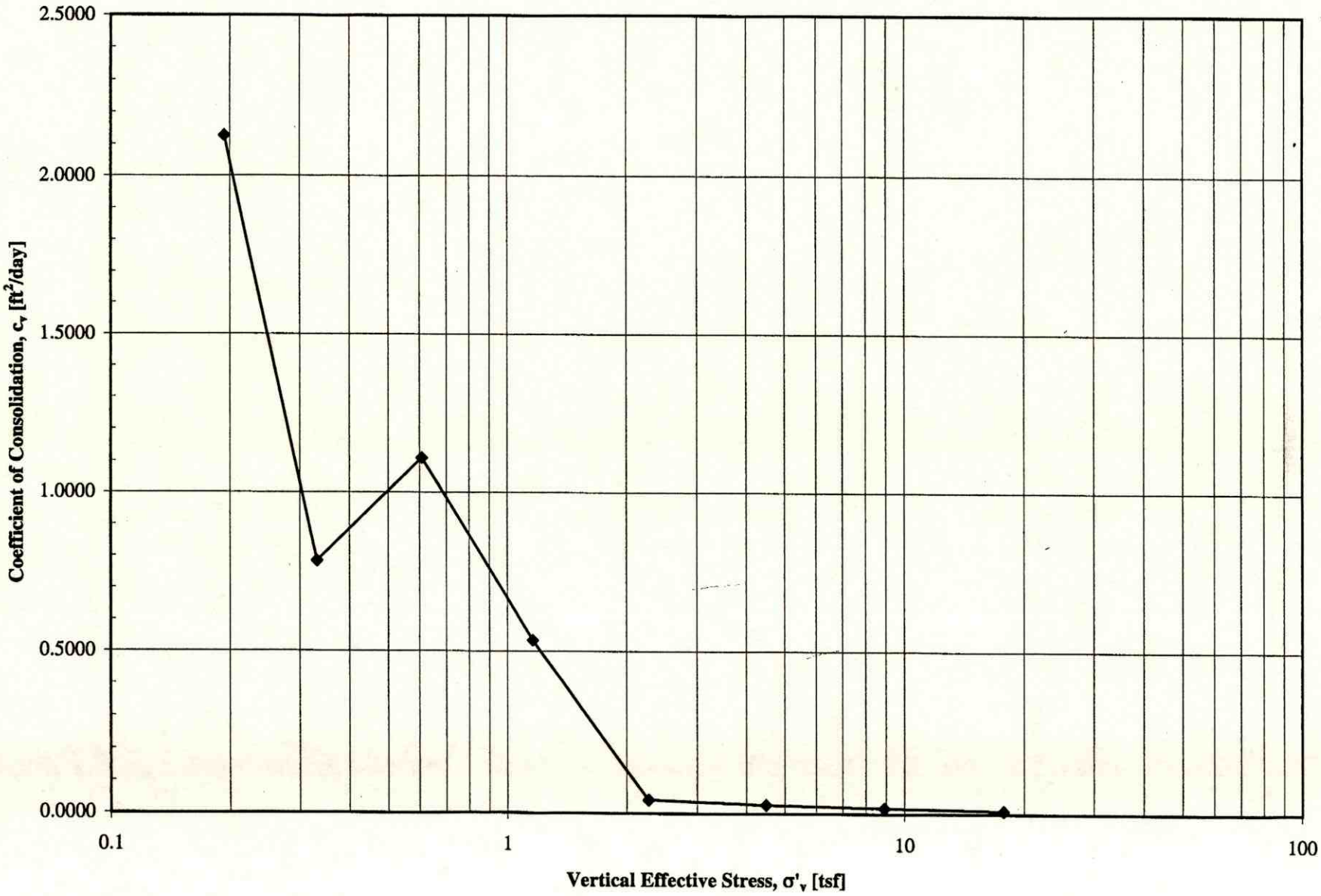
Vertical Effective Stress, σ'_v [tsf]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Coefficient of Consolidation, c_v [ft^2/day]
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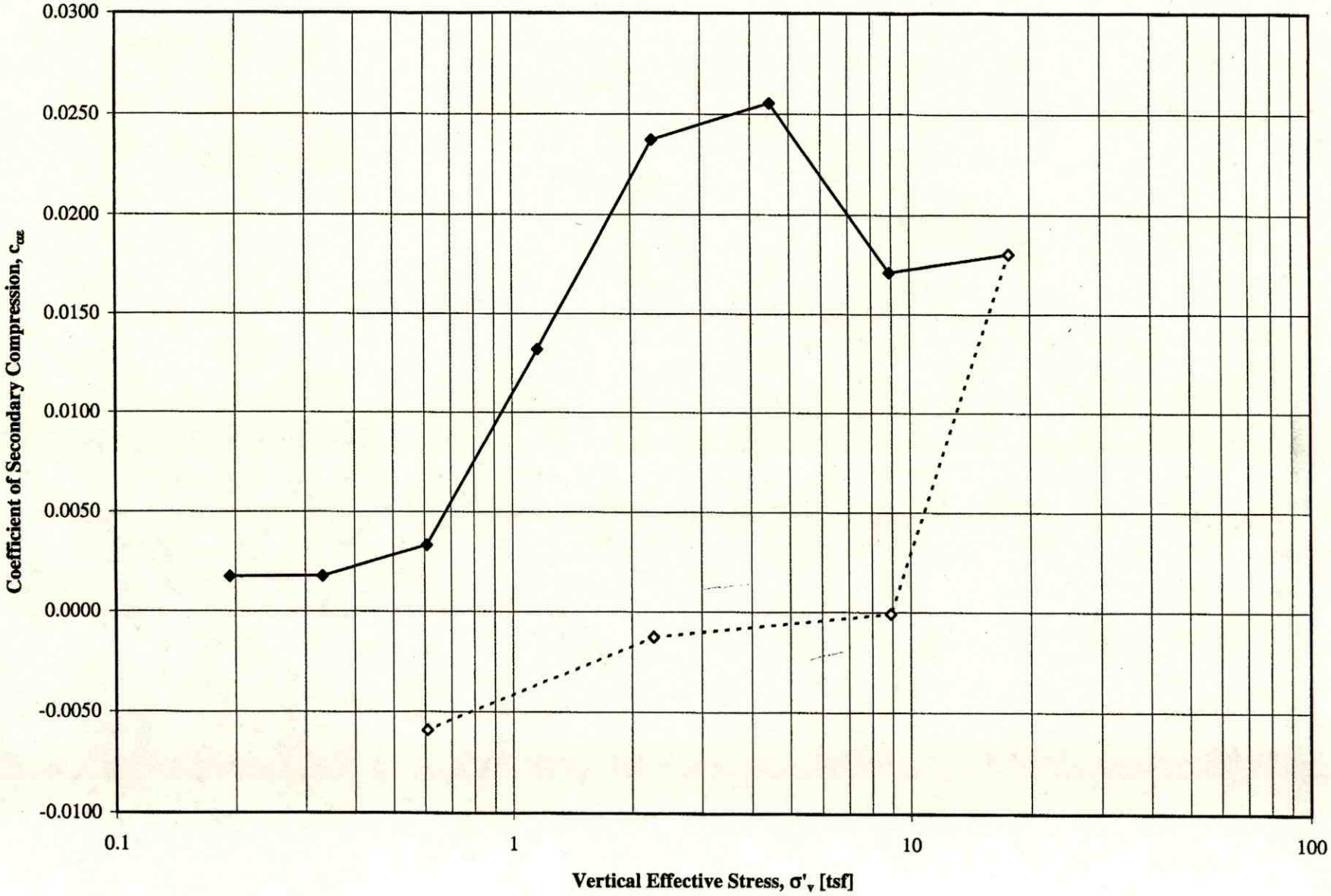
Vertical Effective Stress, σ'_v [tsf]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0.1
1
10
100
Coefficient of Secondary Compression, $c_{\alpha\varepsilon}$
Vertical Effective Stress, σ'_v [tsf]

Appendix C
Evaluation of RIDEM Review Criteria – Wetland Alterations

Criteria Evaluation Against RIDEM Wetland Permitting

1) *Significant reduction in the overall wildlife production and/or diversity of a wetland*;

The project does not expect to significantly reduce the overall wildlife production of any of the wetland areas. Presently, the wetlands are in a compromised state due to the highly developed nature of the airport and surrounding urban community. It appears that a greater threat to wildlife will occur from the loss of the large open space that the landfill provides to wildlife species that use the area for nesting, hunting, and resting. This development will directly impact small mammal populations, coyote (*Canis latrans*), red fox (*Vulpes vulpes*), hunting hawks, and field species of birds.

2) *Significant reduction in the ability of a wetland to satisfy the needs of a particular wildlife species*;

No, it is not expected that there will be any significant reduction in the ability of the wetland area to satisfy the needs of a particular wildlife species. There are no wildlife species known to inhabit the wetlands on site whose requirements are so particular that they will not be satisfied as a result from the loss of wetland habitat.

3) *Significant displacement or extirpation of any wildlife species from a wetland or surrounding areas due to the alteration of the wetland*;

It is expected that there will not be a significant displacement or extirpation of any wildlife species from the wetlands or surrounding areas due to the project. It is expected that many of those wildlife species utilizing the habitat will remain in the surrounding area once the construction is complete.

4) *Any reduction in the ability of the wetland to ensure the long-term viability of any rare animal or rare plant species*;

There are no known rare animal or plant species in the vicinity of the project.

5) *Any degradation in the natural characteristic(s) of any rare wetland type*;

There are no rare wetland types present within the vicinity of the project area.

6) *Significant reduction in the suitability of any wetland for use by any resident, migratory, seasonal, transient, facultative, or obligate wildlife species, in either the short-term or long-term as a travel corridor; feeding site; resting site; nesting site; escape cover; seasonal breeding and/or spawning area*;

It is not expected that there will be a significant reduction in the suitability of any wetland for use by any wildlife species in the short-term or long-term. The intermittent stream channel will be altered which may reduce the suitability of the wetland for use as a travel corridor. Presently, the stream appears to be in a compromised water quality condition based on the red color and odors observed during the wetland delineation. Also, the

based on the red color and odors observed during the wetland delineation. Also, the airport is currently undertaking an odor control project within the stream near the control tower because of the odors produced by the de-icing chemicals that drain into the stream. It is unlikely that wetland-dependent wildlife species such as amphibians, turtles, otter, beaver, and mink would use this stream based on its present condition. The other wetland areas do not provide wildlife species with quality habitat. The shrub wetland and the Emergent Plant Community do provide species of wildlife with areas for feeding, resting, nesting, escape cover, and seasonal breeding.

7) *Any more than a minimal intrusion of, or increase in, less valuable, invasive and/or exotic plant or animal species in a wetland*;

It is not expected that there will be any more than a minimal intrusion of, or increase in, less valuable, invasive and/or exotic plant or animal species in a wetland.
The existing condition of the large swamp located within the property is dominated with common reed. Other invasive species noted within the wetland areas include purple loosestrife and Japanese knotweed. No invasive and/or exotic plant or animal species will be purposefully introduced into the project vicinity.

8) *Significant reduction in the wildlife habitat functions and values of any wetland which could disrupt the management program for any game or non-game wildlife species carried out by state or federal fish, game, or wildlife agencies*;

There will be no disruption to any management program carried out by state or federal fish, game, or any other wildlife agencies that will significantly reduce the wildlife habitat functions and values of any game or non-game wildlife species. Any game or non-game species that are managed by any wildlife agencies such as: white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), coyote, and red fox will need to relocate to other suitable areas. The more important habitat feature of the landfill area appears to be the large open upland habitat.

9) *Significant reduction in overall existing or potential ability of a wetland to provide active or passive recreational activities to the public*;

There are presently no opportunities for any passive or active recreational activities available to the public. The entire airport property is completely restricted to the public for security purposes.

10) *Significant disruption of any on-going scientific studies or observations*;

There are no known on-going scientific studies or observations that will be significantly disrupted from the proposed project.

11) *Elimination of, or severe limitation to traditional human access to, along the bank of, up and/or down, or through any rivers, streams, ponds, or other freshwater wetlands*;

There will be no elimination or severe limitation of any traditional human access to, along the bank of, up and/or down, or through any rivers, streams, ponds, or other freshwater wetlands. There are no traditional human access ways to any wetland area within the vicinity of the project. Again, the entire airport property is completely restricted to the public for security purposes.

12) *Any reduction in water quality functions and values or negative impacts to natural water quality characteristics, either in the short- or long-term, by modifying or changing: water elevations, temperature regimes, volumes, velocity of flow regimes or water; increasing turbidity; decreasing oxygen; causing any form of pollution; or modifying the amount of flow or nutrients so as to negatively impact wetland functions and values*;

The project does not expect to reduce the water quality functions and values or negative impacts to the natural water quality characteristics, either in the short- or long-term. The project does not expect to modify or change the volumes, velocity of flow regimes or water, decrease oxygen, cause any form of pollution, or modify the amount of flow or nutrients so as to negatively impact wetland function and values. Presently, the stream appears to be in a compromised water quality condition based on the red color and odors observed during the wetland delineation. Also, the airport is currently undergoing odor control project within the stream near the control tower because of the odors produced by the de-icing chemicals that drain into the stream.

13) *Any placement of any matter or material beneath surface water elevations or erection of any barriers within any ponds or flowing bodies of water which could cause any hazards to safety*;

There will be no placement of any matter or material beneath the surface water elevations or any erection of barriers within any ponds or flowing bodies of water that could cause any hazards to safety.

14) *Significant loss of important open space or significant modification of any uncommon geologic or archaeological features*;

There will be no significant loss of important open space or a significant modification of any uncommon geologic or archaeological features. The landfill area is a highly disturbed area and therefore there are no uncommon geologic or archaeological features.

15) *Significant modification to the natural characteristics of any wetland area of unusually high visual quality*;

There are no wetlands present within the airport property that provide an unusually high visual quality. These wetland systems are within the fenced private property of the airport and are situated within a highly disturbed setting.

16) *Any decrease in the flood storage capacity of any freshwater wetland which could impair the wetland's ability to protect life and/or property from flooding and/or flood flows*;

This project does not expect to decrease the flood storage capacity of the intermittent stream and Wooded Swamp. Any decrease in the capacity of the 100 year floodplain will be compensated by the development of flood basins.

17) *Significant reduction of the rate at which flood water is stored by any freshwater wetland during any flood event*;

There will be no significant reduction of the rate at which flood water is stored by any freshwater wetland during any flood event.

18) *Restriction or significant modification of the path and/or velocities of flood flows for the 2-year, 10-year, 25-year, or 100-year frequency, 24-hour, Type III storm events so as to cause harm to life, property, or other functions and values provided by freshwater wetlands*;

There will be no restriction or significant modification of the path and/or velocities of flood flows for the 2-year, 10-year, 25-year, or 100-year frequency, 24-hour, Type III storm events so as to cause harm to life, property, or other functions and values provided by the freshwater wetland.

19) *Placement of any structure or obstruction within a floodway so as to cause harm to life, property, or other functions and values provided by freshwater wetlands*;

There will be no placement of any structure or obstruction within a floodway so as to cause harm to life, property, or other functions and values provided by freshwater wetland.

20) *Any increase in run-off rates over pre-project levels or any increase in receiving water/wetlands peak flood elevations for the 2-year, 10-year, 25-year, or 100-year frequency, 24-hour, Type III storm events which could impair the wetland's ability to protect life and/or property from flooding and/or flood flows*;

There will be no increase in run-off rates over pre-project levels or any increase in receiving water/wetlands peak flood elevations for the 2-year, 10-year, 25-year, or 100-year frequency, 24-hour, Type III storm events which could impair the wetland's ability to protect life and/or property from flooding and/or flood flows.

21) *Any increase in run-off volumes and discharge rates which could, in any way, exacerbate flooding conditions in flood-prone areas*;

The project area does not appear to be a flood-prone area. There will be an increase in run-off volumes and discharge rates which could exacerbate flooding conditions in flood-

prone areas due to the proposed significant increase of impervious surface. This will be further clarified after design.

22) *Significant changes in the quantities and discharge rates of surface and/or groundwater to or from isolated wetlands (e.g., those wetlands without inlets or outlets);*

There are three isolated wetlands within the project vicinity. All three of these wetlands will be permanently impacted by the project. Wetland 1 and 5 will be permanently filled and Wetland 3 will be partially filled from the proposed project. The three smaller wetlands that will be impacted are of low wetland quality. These wetlands are contained in depressions and appear to have been created from past land use disturbances. The wetlands are dominated by exotic and invasive plant species that have limited wildlife value. Although a large amount of permanent wetland alterations will result from this project; the wetland resources that will be disturbed are not functioning as healthy ecosystems.

23) *Placement of any structural best management practices within wetlands, or proposal to utilize wetlands as a detention or retention facility;*

There will be placement of any structural best management practices within the wetland. However, the wetland will not be used as a detention or retention facility.

24) *Any more than a short-term decrease in surface water and/or groundwater elevations within any wetland;*

There will be no short-term decrease or any decrease in surface water and/or groundwater elevations within the wetland.

25) Non-compliance with the Rhode Island Department of Environmental Management Water Quality Regulations for Water Pollution Control; and/or

This project will require an approval from RIDEM – Water Quality Section.

26) Any detrimental modification of the wetland's ability to retain and/or remove nutrients or act as natural pollution filter.

This is not known at this stage in the design process.

Appendix D
Cost Estimating Back-up

Warwick, Rhode Island
T.F. Green Airport Landfill Closure - Alternate No:1
10% Design Estimate - December 2001

Estimator	Lyons
Labor rate table	RI, Providence PW
Equipment rate table	Rhode Island
Notes	Assumptions: - All cap material taken to the toe of slope. - Assumed open landfill with no stripping required. - No Dewatering Cost - No Rock removal - Normal 40hr work week

cc: Matt D
Al R.

Item	Description	Takeoff Qty		Labor Amount	Material Amount	Subcontract Amount	Name	Equipment Amount	Other Amount	Total Unit Cost	Total Amount
Landfill Cap											
	02 Site Construction										
02200.000	*Site Preparation*										
6	Remove & Reinstall Chain Link Fence 6'	3,500.000	lf	-	-	28,000		-	-	8.000 /lf	28,000
	Site Preparation					*28,000*					*28,000*
02300.000	*Earthwork*										
z010	Balance Cut to Fill Refuse	40,820.000	cy	143,360	-	-		205,364	-	8.543 /cy	348,723
z005	Sand For Drainage for Cap	49,674.815	cy	431,801	498,884	-		23,184	-	19.202 /cy	953,868
80	Bank Run Gravel for Cap	24,837.410	cy	35,290	152,998	-		25,150	-	8.593 /cy	213,438
z005	Common Earth Fill	20,250.000	cy	34,247	75,917			17,758	-	6.317 /cy	127,922
z005	Silt Fence and Hay Bales	3,000.000	lf	3,607	5,775	-		1,055	-	3.479 /lf	10,437
	Earthwork			*648,304*	*733,574*			*272,511*			*1,654,389*
	14,900.245 Labor hours										
	3,938.555 Equipment hours										
02600.000	*Drainage & Containment*										
z001	Claymax Liner	149,024.440	sy	157,012	426,866	-		87,714	-	4.507 /sy	671,591
z001	HDPE Liner	149,024.440	sy	130,843	405,719	-		73,095	-	4.091 /sy	609,657
	Drainage & Containment			*287,855*	*832,585*			*160,809*			*1,281,249*
	6,557.076 Labor hours										
	3,278.538 Equipment hours										
02900.000	*Planting*										
10	Spread Topsoil for Cap	49,674.815	cy	182,388	511,850	-		101,890	-	16.027 /cy	796,127
15	Hydroseeding	1,341,220.000	sf	-	-	26,824		-	-	0.02 /sf	26,824
50	Fertilizer	1,341,220.000	sf	-	-	402,366		-	-	0.300 /sf	402,366
	Planting			*182,388*	*511,850*	*429,190*		*101,890*			*1,225,318*
	3,973.985 Labor hours										
	1,986.993 Equipment hours										
	02 Site Construction			**1,118,546**	**2,078,008**	**457,190**		**535,210**	**0**		**4,188,955**
	25,431.306 Labor hours										
	9,204.085 Equipment hours										
	Landfill Cap			***1,118,546***	***2,078,008***	***457,190***		***535,210***	***0***		***4,188,955***
	25,431.306 Labor hours										
	9,204.085 Equipment hours										
Leachate System											
	02 Site Construction										
02000.000	*SITE CONSTRUCTION*										
005	Collection Pipe/Trench	2,000.000	lf	23,097	53,903	-		-	-	38.500 /lf	77,000
005	Distrubution Lines	5,000.000	lf	13,153	30,847	-		-	-	8.80 /lf	44,000
005	Treatment Building	1.000	ls	82,500	231,000	-		16,500	-	329,999.980 /ls	330,000

Item	Description	Takeoff Qty	Labor Amount	Material Amount	Subcontract Amount	Name	Equipment Amount	Other Amount	Total Unit Cost	Total Amount
	SITE CONSTRUCTION		*118,750*	*315,750*			*16,500*			*451,000*
	2,951.697 Labor hours									
	600.000 Equipment hours									
	02 Site Construction		**118,750**	**315,750**	**0**		**16,500**	**0**		**451,000**
	2,951.697 Labor hours									
	600.000 Equipment hours									
	11 Equipment									
11000.000	*EQUIPMENT*									
z005	Extraction Wells & Pumps	1.000 ls	75,000	210,000	-		15,000	-	300,000.000 /ls	300,000
z005	Recharge/Discharge System & Ancillary Equipment	1.000 ls	25,000	70,000	-		5,000	-	100,000.000 /ls	100,000
	EQUIPMENT		*100,000*	*280,000*			*20,000*			*400,000*
	2,380.952 Labor hours									
	400.000 Equipment hours									
	11 Equipment		**100,000**	**280,000**	**0**		**20,000**	**0**		**400,000**
	2,380.952 Labor hours									
	400.000 Equipment hours									
	13 Special Construction									
13400.000	*Measurement & Ctrl Instr*									
z001	Instrumentation/Controls & Electrical	1.000 ls	30,000	70,000	-		-	-	100,000.000 /ls	100,000
	Measurement & Ctrl Instr		*30,000*	*70,000*						*100,000*
	600.000 Labor hours									
	13 Special Construction		**30,000**	**70,000**	**0**		**0**	**0**		**100,000**
	600.000 Labor hours									
	Leachate System		***248,750***	***665,750***	***0***		***36,500***	***0***		***951,000***
	5,932.649 Labor hours									
	1,000.000 Equipment hours									
	Thermal Tmnt									
	02 Site Construction									
02000.000	*SITE CONSTRUCTION*									
005	Gas Flare System	1.000 ls	3,300	40,700	-		-	-	43,999.990 /ls	44,000
005	Gas Flare Piping	3,000.000 lf	24,748	57,752	-		-	-	27.500 /lf	82,500
	SITE CONSTRUCTION		*28,048*	*98,452*						*126,500*
	667.977 Labor hours									
	02 Site Construction		**28,048**	**98,452**	**0**		**0**	**0**		**126,500**
	667.977 Labor hours									
	Thermal Tmnt		***28,048***	***98,452***	***0***		***0***	***0***		***126,500***
	667.977 Labor hours									

Estimate Totals

Labor	1,395,345		32,031.932	hrs	
Material	2,842,210				
Subcontract	457,190				
Equipment	571,710		10,204.085	hrs	
	5,266,455	5,266,455			
Contractor's General Condition	789,968		15.000 %		T
Construction Design Contingenc	1,316,614		25.000 %		T
Mobilization/Demobilization	263,323		5.000 %		T
	Total	*7,636,360*			

Warwick, Rhode Island
T.F. Green Airport Landfill Closure - Alternate No:3
10% Design Estimate - December 2001

Estimator	Lyons
Labor rate table	RI, Providence PW
Equipment rate table	Rhode Island
Notes	Assumptions: - All cap material taken to the toe of slope. - Assumed open landfill with no stripping required. - No Dewatering Cost - No Rock removal - Normal 40hr work week - Asphalt Pavement includes: 16"thk Asphalt Pavement, 14"thk Crushed stone Bedding - Piles by others - Pre-loading by others

CC: MATT D
AL R.

Item	Description	Takeoff Qty		[redacted] Amount	[redacted] Amount	[redacted] Amount	Name	[redacted] Amount	[redacted] Amount	Unit Cost	Total Amount
Hangers											
	03 Concrete										
03100.000	*Concr Forms & Accessories*										
6C1	Continuous Footing Forms < 12"	6,400.000	sf	29,324	2,944	-		-	-	5.042 /sf	32,268
9C1	Mat Foundation Edge Form	4,800.000	sf	43,986	2,898	-		-	-	9.767 /sf	46,884
8	Panel Form System 4-8'	8,000.000	sf	54,979	10,626	-		-	-	8.201 /sf	65,605
4	Keyway 4"	3,200.000	lf	2,199	1,352	-		-	-	1.11 /lf	3,552
14	Strip & Oil Footing Forms	6,400.000	sf	1,408	-	-		-	-	0.22 /sf	1,408
18	Strip & Oil Mat Found. Form	4,800.000	sf	1,056	-	-		-	-	0.22 /sf	1,056
22	Strip & Oil Wall Forms	8,000.000	sf	1,760	-	-		-	-	0.22 /sf	1,760
2	Wall Bulkhead Forms	97.500	sf	1,340	118	-		-	-	14.955 /sf	1,458
	Concr Forms & Accessories			*136,052*	*17,938*						*153,990*
	2,973.193 Labor hours										
03200.000	*Concrete Reinforcement*										
202	Footing Rebar	35.556	tn	23,719	24,043	-		-	-	1,343.284 /tn	47,762
208	SOG Rebar	500.000	tn	333,540	338,100	-		-	-	1,343.281 /tn	671,640
210	Wall Rebar	16.667	tn	11,118	11,270	-		-	-	1,343.268 /tn	22,388
900	Mesh Support - bricks	13,872.000	ea	1,851	3,015	-		-	-	0.351 /ea	4,866
	Concrete Reinforcement			*370,228*	*376,428*						*746,656*
	5,549.974 Labor hours										
03300.000	*Cast-In-Place Concrete*										
40	4000 psi Concrete	7,362.966	cy	-	666,809	-		-	-	90.563 /cy	666,809
1	Truck Place Wall Footings	474.074	cy	8,475	-	-		-	-	17.878 /cy	8,475
1	Truck Place Mat Foundation	6,666.670	cy	119,186	-	-		-	-	17.878 /cy	119,186
1	Truck Place Walls	222.222	cy	5,463	-	-		-	-	24.585 /cy	5,463
2	Finish- Rough	120,000.000	sf	52,789	828	-		-	-	0.447 /sf	53,617
20	Finish- Top of Wall & Curb	1,200.000	sf	469	-	-		-	-	0.391 /sf	469
2	Grind/Patch Walls	8,000.000	sf	5,279	92	-		-	-	0.671 /sf	5,371
2	Liquid Curing Compounds	134,400.000	sf	11,826	1,623	-		-	-	0.10 /sf	13,449
	Cast-In-Place Concrete			*203,488*	*669,352*						*872,840*
	4,456.932 Labor hours										
	03 Concrete			**709,768**	**1,083,718**	**0**		**0**	**0**		**1,773,486**
	12,980.099 Labor hours										
	13 Special Construction										
13120.000	*Pre-Engineered Structures*										
z001	Pre-Engineered Metal Bldg, 100'x300'	4.000	ea	900,824	1,501,374	-		277,801	-	669,999.997 /ea	2,680,000
	Pre-Engineered Structures			*900,824*	*1,501,374*			*277,801*			*2,680,000*
	16,921.408 Labor hours										
	2,417.344 Equipment hours										
	13 Special Construction			**900,824**	**1,501,374**	**0**		**277,801**	**0**		**2,680,000**
	16,921.408 Labor hours										
	2,417.344 Equipment hours										

Item	Description	Takeoff Qty		Labor Amount	Material Amount	Subcontract Amount	Name	Equipment Amount	Other Amount	Total Unit Cost	Total Amount
	Hangers			***1,610,592***	***2,565,092***	***0***		***277,801***	***0***		***4,453,486***
	29,901.507 Labor hours										
	2,417.344 Equipment hours										

Landfill Cap

02 Site Construction

02200.000	*Site Preparation*										
6	Remove & Reinstall Chain Link Fence, 6'	3,500.000	lf	-	-	28,000		-	-	8.000 /lf	28,000
	Site Preparation					*28,000*					*28,000*
02300.000	*Earthwork*										
z010	Balance Cut to Fill Refuse	189,182.000	cy	664,406	-	-		951,767	-	8.543 /cy	1,616,173
z005	Sand For Drainage for Cap	47,438.890	cy	412,365	476,429	-		22,140	-	19.202 /cy	910,934
80	Bank Run Gravel for Cap	23,719.440	cy	33,701	146,112	-		24,018	-	8.593 /cy	203,831
z005	Common Earth Fill	41,693.000	cy	70,512	156,306	0		36,563	-	6.317 /cy	263,381
z005	Silt Fence and Hay Bales	3,000.000	lf	3,607	5,775	-		1,055	-	3.479 /lf	10,437
	Earthwork			*1,184,591*	*784,622*			*1,035,543*			*3,004,755*
	27,098.843 Labor hours										
	10,067.574 Equipment hours										
02600.000	*Drainage & Containment*										
z001	Claymax Liner	142,316.670	sy	149,944	407,652	-		83,766	-	4.507 /sy	641,362
z001	HDPE Liner	142,316.670	sy	124,954	387,457	-		69,805	-	4.091 /sy	582,216
	Drainage & Containment			*274,898*	*795,109*			*153,571*			*1,223,578*
	6,261.933 Labor hours										
	3,130.967 Equipment hours										
02900.000	*Planting*										
10	Spread Topsoil for Cap	12,253.700	cy	44,991	126,262	-		25,134	-	16.027 /cy	196,387
15	Hydroseeding	330,850.000	sf	-	-	6,617		-	-	0.02 /sf	6,617
50	Fertilizer	330,850.000	sf	-	-	99,255		-	-	0.300 /sf	99,255
	Planting			*44,991*	*126,262*	*105,872*		*25,134*			*302,259*
	980.296 Labor hours										
	490.148 Equipment hours										
	02 Site Construction			1,504,480	1,705,993	133,872		1,214,248	0		4,558,593
	34,341.072 Labor hours										
	13,688.689 Equipment hours										
	Landfill Cap			***1,504,480***	***1,705,993***	***133,872***		***1,214,248***	***0***		***4,558,593***
	34,341.072 Labor hours										
	13,688.689 Equipment hours										

Leachate System

02 Site Construction

02000.000	*SITE CONSTRUCTION*										
005	Collection Pipe/Trench	1,900.000	lf	21,942	51,207	-		-	-	38.500 /lf	73,150
005	Distrubution Lines	4,760.000	lf	12,522	29,366	-		-	-	8.80 /lf	41,888

Item	Description	Takeoff Qty		Labor Amount	Material Amount	Subcontract Amount	Name	Equipment Amount	Other Amount	Total Unit Cost	Total Amount
02000.000	*SITE CONSTRUCTION*										
005	Treatment Building	1.000	ls	82,500	231,000	-		16,500	-	329,999.990 /ls	330,000
	SITE CONSTRUCTION			*116,964*	*311,574*			*16,500*			*445,038*
	2,908.852 Labor hours										
	600.000 Equipment hours										
	02 Site Construction			**116,964**	**311,574**	**0**		**16,500**	**0**		**445,038**
	2,908.852 Labor hours										
	600.000 Equipment hours										
	11 Equipment										
11000.000	*EQUIPMENT*										
z005	Extraction Wells & Pumps	1.000	ls	75,000	210,000	-		15,000	-	300,000.000 /ls	300,000
z005	Recharge/Discharge System & Ancillary Equipment	1.000	ls	25,000	70,000	-		5,000	-	100,000.000 /ls	100,000
	EQUIPMENT			*100,000*	*280,000*			*20,000*			*400,000*
	2,380.952 Labor hours										
	400.000 Equipment hours										
	11 Equipment			**100,000**	**280,000**	**0**		**20,000**	**0**		**400,000**
	2,380.952 Labor hours										
	400.000 Equipment hours										
	13 Special Construction										
13400.000	*Measurement & Ctrl Instr*										
z001	Instrumentation/Controls & Electrical	1.000	ls	30,000	70,000	-		-	-	100,000.000 /ls	100,000
	Measurement & Ctrl Instr			*30,000*	*70,000*						*100,000*
	600.000 Labor hours										
	13 Special Construction			**30,000**	**70,000**	**0**		**0**	**0**		**100,000**
	600.000 Labor hours										
	Leachate System			***246,964***	***661,574***	***0***		***36,500***	***0***		***945,038***
	5,889.804 Labor hours										
	1,000.000 Equipment hours										
Pavement											
	02 Site Construction										
02300.000	*Earthwork*										
z005	Grading for Asphalt Pavement	92,488.890	sy	81,205	-	-		49,923	-	1.418 /sy	131,128
z005	Screened Gravel Bedding, 14"thk	35,978.180	cy	312,742	517,141	-		16,791	-	23.533 /cy	846,674
	Earthwork			*393,947*	*517,141*			*66,714*			*977,802*
	9,081.392 Labor hours										
	1,433.855 Equipment hours										
02700.000	*Base/ Bist/ Pvmnt/ Appurt*										
z005	Asphalt Pavement, 16"thk	81,388.740	tn	1,252,458	3,039,648	-		321,096	-	56.681 /tn	4,613,202

Item	Description	Takeoff Qty		Labor Amount	Material Amount	Equipment Amount	Subcontract Name	Subcontract Amount	Other Amount	Total Unit Cost	Total Amount
	Base/ Bist/ Pvmnt/ Appurt			*1,252,458*	*3,039,648*			*321,096*			*4,613,202*
	27,672.172 Labor hours										
	4,883.324 Equipment hours										
	02 Site Construction			**1,646,405**	**3,556,790**	**0**		**387,810**	**0**		**5,591,004**
	36,753.564 Labor hours										
	6,317.180 Equipment hours										
	Pavement			***1,646,405***	***3,556,790***	***0***		***387,810***	***0***		***5,591,004***
	36,753.564 Labor hours										
	6,317.180 Equipment hours										

Thermal Tmnt

02 Site Construction

02000.000	*SITE CONSTRUCTION*										
005	Gas Flare System	1.000	ls	3,300	40,700	-		-	-	44,000.000 /ls	44,000
005	Gas Flare Piping	2,800.000	lf	23,098	53,902	-		-	-	27.500 /lf	77,000
	SITE CONSTRUCTION			*26,398*	*94,602*						*121,000*
	628.475 Labor hours										
	02 Site Construction			**26,398**	**94,602**	**0**		**0**	**0**		**121,000**
	628.475 Labor hours										
	Thermal Tmnt			***26,398***	***94,602***	***0***		***0***	***0***		***121,000***
	628.475 Labor hours										

Estimate Totals

Labor	5,034,839		107,514.422	hrs	
Material	8,584,050				
Subcontract	133,872				
Equipment	1,916,359		23,423.212	hrs	
	15,669,120	15,669,120			
Contractor's General Condition	2,350,368		15.000 %		T
Construction Design Contingenc	3,917,280		25.000 %		T
Mobilization/Demobilization	783,456		5.000 %		T
	Total	*22,720,224*			

Lincoln Environmental, Inc.

333 Washington Highway, Smithfield, RI 02917-1915 (401) 232-3353 (401) 232-1130 FAX RI@lincolnenv.com EMAIL
OTHER OFFICE: GLASTONBURY, CT

February 17, 2005

Christopher Walusiak
Office of Waste Management
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908

RE: Truk-Away Landfill
Industrial Drive
Warwick, Rhode Island

Dear Mr. Walusiak:

Lincoln Environmental, Inc. gauged and sampled groundwater monitoring well MW-3 on December 8, 2004, wells MW-1, MW-5, MW-6, and MW-8 on December 30, 2004 and well MW-7 on January 5, 2005 at the referenced location. Groundwater monitoring well locations are shown on **Figure 1**. The gauging and sampling activities were performed on behalf of the Rhode Island Department of Administration. Following is a report of findings.

Depth to groundwater was gauged in well MW-3 on December 8, 2004, with an interface probe. Separate phase petroleum was detected at a measured thickness of 1.08 feet. The separate phase petroleum was sampled, submitted to a Rhode Island certified laboratory, and analyzed for Fingerprint analysis by EPA Method D3328 and for PCBs by EPA Method 8015B. The MW-3 petroleum sample chromatogram "most closely resembles a combination of gasoline range distillate and a lube stock distillate (motor oil, etc.)" according to the certificate of analysis (**Appendix 1**). PCBs were reported to be present in the MW-3 petroleum sample; Aroclor-1016 and Aroclor 1260 at concentrations of 68 and 48 milligrams per kilogram, respectively. A Water Level Measurements sheet is included in **Appendix 2**.

Groundwater was gauged and sampled at monitoring wells MW-1, MW-5, MW-6 and MW-8 on December 30, 2004. Well MW-7 was gauged and sampled six days later on January 5, 2004. A Water Level Measurements sheet is included in **Appendix 2**. A groundwater table elevation contour map is included as **Figure 2**.

No separate phase petroleum was observed in wells MW-1, MW-5, MW-6, MW-7 and MW-8. The groundwater samples from these wells were submitted to a Rhode Island certified laboratory and analyzed for volatile organic compounds (VOCs) by EPA Method 8260, semivolatile organic compounds (SVOCs) by EPA Method 8270 and for PCBs by EPA Method 8082. VOCs and SVOCs were detected in all of the groundwater samples but at concentrations less than the Rhode Island GB Groundwater Objectives. No PCBs were detected in the groundwater samples. Groundwater analytical results are summarized in **Tables 1 and 2.** The groundwater sample certificate of analysis is included in **Appendix 3**.

Lincoln recommends that additional subsurface investigation be performed to define the extent of the separate phase petroleum observed at MW-3.

If you have any questions, please contact the undersigned at 232-3353, extension 133.

Sincerely,

LINCOLN ENVIRONMENTAL, INC.

Stephen C. Gautie
Hydrogeologist

attachments

cc: David Sheldon, Rhode Island Department of Administration

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Table 2

Summary of Groundwater Analytical Results
Semivolatiles and Polychlorinated Biphenyls (PCBs)
Truk-Away Landfill
Warwick, Rhode Island

MW No. Date	Naphthalene	Bis(2-ethylhexyl)phthalate	2,4-Dimethylphenol	PCBs
MW-1				
12/30/2004	31	<30	<30	<2
MW-3				
12/8/2004	**Separate Phase Petroleum*:**			Aroclor -1016: 68** Aroclor -1260: 48**
MW-5				
12/30/2004	48	<20	<20	<2
MW-6				
12/30/2004	<30	38	<30	<2
MW-7				
1/5/2005	<10	<10	<10	<2
MW-8				
12/30/2004	42	<20	27	<2
GB Groundwater Objective	**No Standard**	**No Standard**	**No Standard**	**No Standard**

Semivolatile Organic Compounds results in micrograms per liter.
PCBs results in milligrams per kilogram.

***A petroleum sample was obtained from MW-3 on December 8, 2004 and was laboratory identified as most closely resembling a combination of a gasoline range distillate and lube sock distillate (motor oil, etc.). PCBs were also detected in the petroleum sample: Aroclor-1016 at 68 milligrams per kilogram and Aroclor 1260 at 48 milligrams per kilogram.**

****PCBs concentrations in Separate Phase Petroleum Sample**

Semivolatile Organic Compounds by EPA Method 8270
PCBs by EPA Method 8082
MTBE = methyl tert butyl ether
PCBs = Polychlorinated biphenyls
PCB Samples were obtained 1/5/05

Table 1

Summary of Groundwater Analytical Results
Volatile Organic Compounds
Truk-Away Landfill
Warwick, Rhode Island

MW No. Date	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	n-Butylbenzene	Chlorobenzene	Chloroethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	cis-1,2-Dichloroethene	Isopropylbenzene	p-Isopropyltoluene	n - Propylbenzene	1,2,4 - Trimethylbenzene	1,3,5 - Trimethylbenzene
MW-1																		
12/30/2004	17	1	54	1,004	<2	40	2	180	1700	31	3	25	2	7	3	5	49	15
MW-3																		
12/8/2004	**Separate Phase Petroleum, 1.08 feet***																	
12/30/2004	**Separate Phase Petroleum, 0.54 feet**																	
MW-5																		
12/30/2004	12	<1	<1	240	<2	70	2	51	40	2	<1	20	<1	10	<1	7	51	16
MW-6																		
12/30/2004	11	1	3	30	<2	42	2	30	43	2	<1	17	<1	6	1	6	40	4
MW-7																		
1/5/2005	2	<1	<1	<2	<2	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW-8																		
12/30/2004	19	2	130	2,236	<2	46	2	17	280	1	<1	8	<1	11	7	8	57	20
GB Groundwater Objective	**140**	**1,700**	**1,600**	**No Standard**	**5,000**	**No Standard**	**No Standard**	**3,200**	**No Standard**	**No Standard**	**No Standard**	**No Standard**	**2,400**	**No Standard**	**No Standard**	**No Standard**	**No Standard**	**No Standard**

Results in micrograms per liter
***A petroleum sample was obtained from MW-3 on December 8, 2004 and was laboratory identified as most closely resembling a combination of a gasoline range distillate and lube sock distillate (motor oil, etc.). PCBs were also detected in the petroleum sample: Aroclor-1016 at 68 milligrams per kilogram and Aroclor 1260 at 48 milligrams per kilogram.**
Volatile Organic Compounds by EPA Method 8260
MTBE = methyl tert butyl ether

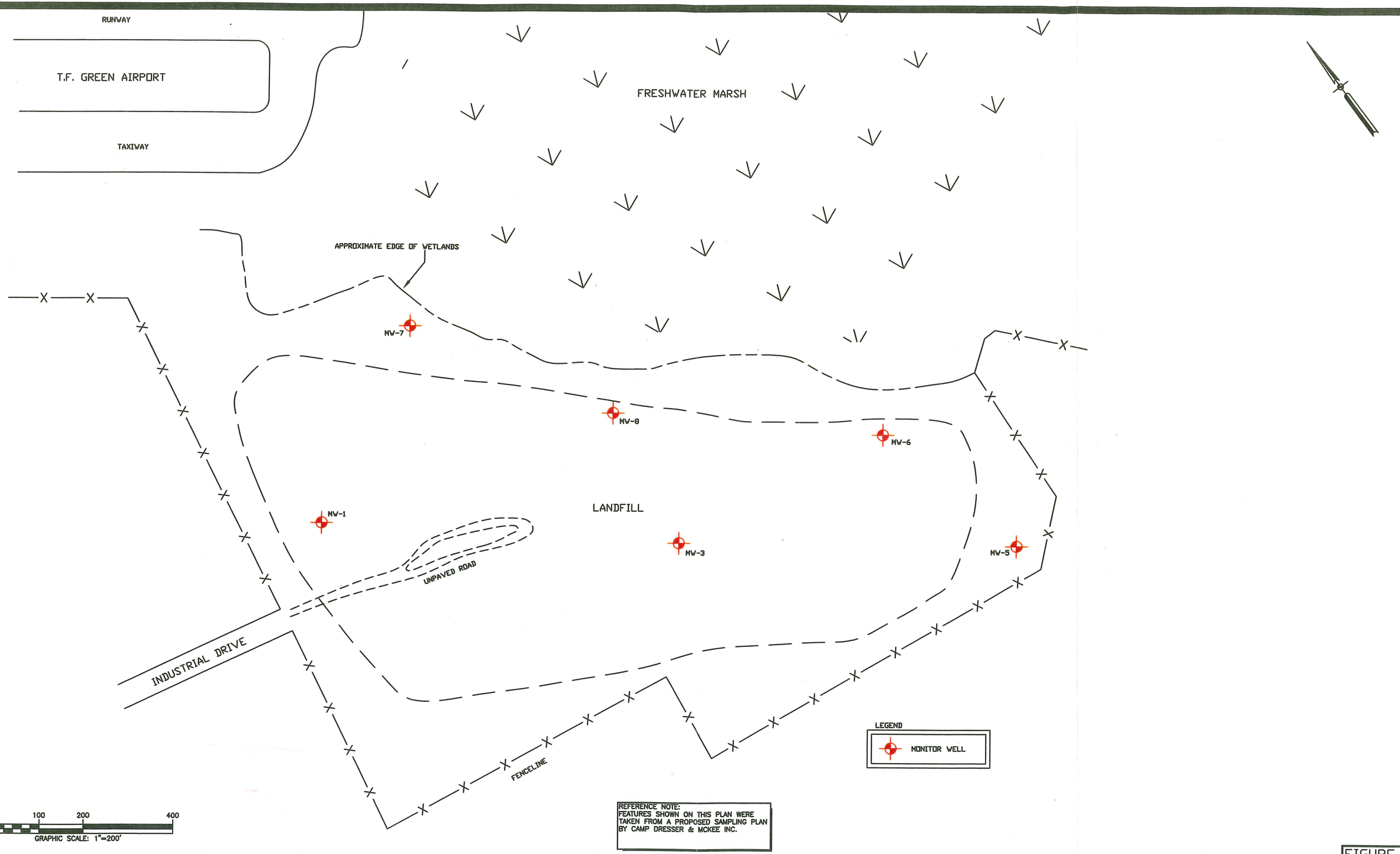

FIGURE 1

SITE PLAN

LE JOB NO. R2284
DRAWN: 2/14/05
REV: 2/17/05

DWG: SITEPLAN
BY: JAM
BY: JAM

Lincoln Environmental, Inc.
Smithfield,Rhode Island (401)232-3353

FORMER TRUCK AWAY LANDFILL SITE
WARWICK, RHODE ISLAND

RUNWAY

T.F. GREEN AIRPORT

TAXIWAY

FRESHWATER MARSH

APPROXIMATE EDGE OF WETLANDS

MW-7
16.2

MW-8
17.3

MW-6
19.2

16

18

20

LANDFILL

MW-1
16.8

24.8
MW-3

19
MW-5

UNPAVED ROAD

INDUSTRIAL DRIVE

FENCELINE

LEGEND

MONITOR WELL

24.8 GROUNDWATER ELEVATION (FT)

-20- GW ELEVATION CONTOUR (FT)

REFERENCE NOTE:
FEATURES SHOWN ON THIS PLAN WERE TAKEN FROM A PROPOSED SAMPLING PLAN BY CAMP DRESSER & MCKEE INC.

0 100 200 400

GRAPHIC SCALE: 1"=200'

FIGURE 2

GROUNDWATER ELEVATION CONTOUR MAP FOR 12/30/04

LE JOB NO. R2284
DRAWN: 2/14/05
REV: 2/17/05

DWG: SITEPLAN
BY: JAM
BY: JAM

Lincoln Environmental, Inc.
Smithfield,Rhode Island (401)232-3353

FORMER TRUCK AWAY LANDFILL SITE
WARWICK, RHODE ISLAND

R.I. Analytical

Specialists in Environmental Services

DEC 2 2 2004

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Attn: Mr. Stephen Gautie
333 Washington Highway
Smithfield, RI 02917

Date Received: 12/10/2004
Date Reported: 12/17/2004
P.O. #: R22840
Work Order # 0412-18787

DESCRIPTION: PROJECT# R22840 TRUK-AWAY LANDFILL

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by 40 CFR,136/U.S. EPA approved methodologies and all NELAC requirements were met. The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

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

We certify that the following results are true and accurate to the best of our knowledge:

Data Reporting

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 12/10/2004
Work Order #: 0412-18787

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: MW-3
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 12/09/2004

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH GC						
C6-C10	320000	300000	ug/l	SW846 8015B	12/15/2004	RJP
C10-C28	340000	100000	ug/l	SW846 8015B	12/15/2004	RJP
C28-C36	180000	50000	ug/l	SW846 8015B	12/15/2004	RJP
Extraction date	Extracted			SW846 3510	12/14/2004	GM
POLYCHLORINATED BIPHENYLS (PCB'S) IN OIL						
Aroclor-1016	68	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT
Aroclor-1221	<5	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT
Aroclor-1232	<5	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT
Aroclor-1242	<5	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT
Aroclor-1248	<5	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT
Aroclor-1254	<5	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT
Aroclor-1260	48	5	mg/kg	EPA-600/4-81-045	12/16/2004	MFT

Fingerprint identification - sample chromatogram most closely resembles a combination of a gasoline range distillate and a lube stock distillate (motor oil, etc).

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type [T]	Preservation Code [P]	Matrix Code [M]	Fingerprint D3328	PCBs
12/9/04	AM ✓	MW-3	G	2,G	S NT	GW	✓	✓

Client Information

Company Name: Lincoln Environmental
Address: 333 Washington Highway
City / State / Zip: Smithfield, RI 02917
Telephone: 232-3353 x133 Fax: 232-1130
Contact Person: Stephen Gaurie

Project Information

Project Name: ~~Frost~~ Truk-Away Landfill
P.O. Number: R22840 Project Number: R22840
Report To: Stephen Gaurie Phone: Fax:
Sampled by: Stephen Gaurie
Quote No: Email address:

Relinquished By	Date	Time	Received By	Date	Time
Stephen Gaurie	12/9/04	2:00 PM	Amy Carr	12-10-04	09:50
Amy Carr	12/10/04	11:50	Kristen Mayo	12/10/04	1150

Turn Around Time

- ✓ Normal
- EMAIL Report
- 5 Business days. Possible surcharge
- Rush ______ (business days)

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3

MCP Data Enhancement QC Package? Yes No

Lab Use Only

- X Sample Pick Up Only
- RIAL sampled; attach field hours
- X Shipped on ice
- Workorder No: 0412-18787

Container Types: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile

Preservation Codes: NP=None, N=HNO_3, H=HCl, S=H_2SO_4, SH=NaOH, SB=$NaHSO_4$, M=MeOH, T=$Na_2S_2O_3$, Z=ZnOAc, I=Ice

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, Sl=Sludge, A=Air, B=Bulk/Solid, O=______

WATER LEVEL MEASUREMENTS

Location	Truk-Away Landfill, Warwick, RI	*Lincoln No.*	R22840
Client	RI Dept. of Administration	*DATE:*	12/30/04
Instrument	ORS Interface Probe	*Gauged By*	WR
Checked By	SG		

WELL #	M.P. ELEVATIONS*	DEPTH TO PRODUCT	DEPTH TO WATER	PRODUCT THICKNESS	EQUIVALENT HD ELEVATION
MW-1	33.1		16.29	0.00	16.8
MW-3**	46.1	21.39	22.47	1.08	24.5
MW-3***	46.1	21.21	21.75	0.54	24.8
MW-5	33		13.98	0.00	19
MW-6	40.1		20.90	0.00	19.2
MW-7	20.6		4.39	0.00	16.2
MW-8	37.5		20.18	0.00	17.3

*M.P. Elevations per *Limited Environmental Site Investigation Report*, Camp Dresser & MkKee, March 2001 (NGVD 29).

NOTES : ** Gauged on 12/8/04. Product was sampled after gauging.

*** Gauged on 12/30/04

MW-6: Sheen on well bailings.

MW-7 Was found and gauged on 1/5/05

R.I. Analytical

JAN 20 2005

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Attn: Mr. Stephen Gautie
333 Washington Highway
Smithfield, RI 02917

Date Received: 01/05/2005
Date Reported: 01/17/2005
P.O. #: R22840
Work Order # 0501-00221

DESCRIPTION: PROJECT# R22840 TRUCK-AWAY LANDFILL

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by 40 CFR,136/U.S. EPA approved methodologies and all NELAC requirements were met. The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

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

We certify that the following results are true and accurate to the best of our knowledge:

Data Reporting

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: MW-1
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1221	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1232	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1242	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1248	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1254	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1260	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
SURROGATE			RANGE	SW-846 8082	01/10/2005	MFT
Tetrachloro-m-xylene (TCMX)	76		30-150%	SW-846 8082	01/10/2005	MFT
Decachlorobiphenyl	48		30-150%	SW-846 8082	01/10/2005	MFT
Extraction date	Extracted			SW846 3510	01/07/2005	MAO
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Acenaphthylene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Anthracene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzidine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)anthracene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(b)fluoranthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(k)fluoranthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(g,h,i)perylene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)pyrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-chloroethyl)ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-Chloroethoxy)methane	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
bis(2-chloroisopropyl)ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-ethylhexyl)phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Bromophenyl phenyl ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Butylbenzyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chloronaphthalene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chlorophenyl phenyl ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Chrysene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Dibenzo(a,h)anthracene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Di-n-butyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Dichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,3-Dichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,4-Dichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
3,3'-Dichlorobenzidine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Diethyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Dimethyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrotoluene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,6-Dinitrotoluene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: MW-1
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Di-n-octyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Diphenylhydrazine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Fluoranthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Fluorene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobutadiene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorocyclopentadiene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachloroethane	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Indeno(1,2,3-cd)pyrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Isophorone	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Naphthalene	31	30	ug/l	SW-846 8270C	01/07/2005	DMM
Nitrobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodimethylamine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodiphenylamine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodi-n-propylamine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Phenanthrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Pyrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,2,4-Trichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chloro-3-methylphenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dichlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dimethylphenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Methyl-4,6-dinitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Nitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Nitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Pentachlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Phenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4,6-Trichlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
SURROGATES			RANGE	SW-846 8270C	01/07/2005	DMM
Phenol-d5	35		10-94%	SW-846 8270C	01/07/2005	DMM
2-Fluorophenol	33		21-100%	SW-846 8270C	01/07/2005	DMM
2,4,6-Tribromophenol	66		10-123%	SW-846 8270C	01/07/2005	DMM
Nitrobenzene-d5	69		35-114%	SW-846 8270C	01/07/2005	DMM
2-Fluorobiphenyl	77		43-116%	SW-846 8270C	01/07/2005	DMM
P-Terphenyl-d14	71		33-141%	SW-846 8270C	01/07/2005	DMM
Volatile Organic Compounds						
Benzene	17	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromoform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: MW-1
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromomethane	<10	10	ug/l	SW-846 8260B	01/07/2005	ST
n-Butylbenzene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
sec-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chlorobenzene	180	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloroethane	1700	5	ug/l	SW-846 8260B	01/07/2005	ST
Chloroform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromomethane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichlorobenzene	31	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichlorobenzene	3	1	ug/l	SW-846 8260B	01/07/2005	ST
1,4-Dichlorobenzene	25	1	ug/l	SW-846 8260B	01/07/2005	ST
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
cis-1,2-Dichloroethene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
trans-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Ethylbenzene	54	1	ug/l	SW-846 8260B	01/07/2005	ST
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Isopropylbenzene	7	1	ug/l	SW-846 8260B	01/07/2005	ST
p-Isopropyltoluene	3	1	ug/l	SW-846 8260B	01/07/2005	ST
Methylene Chloride	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
Naphthalene	40	1	ug/l	SW-846 8260B	01/07/2005	ST
n-Propylbenzene	5	1	ug/l	SW-846 8260B	01/07/2005	ST
Styrene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Toluene	1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 001
SAMPLE DESCRIPTION: MW-1
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trimethylbenzene	49	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3,5-Trimethylbenzene	15	1	ug/l	SW-846 8260B	01/07/2005	ST
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
o-Xylene	4	1	ug/l	SW-846 8260B	01/07/2005	ST
m&p-Xylene	1000	1	ug/l	SW-846 8260B	01/07/2005	ST
MTBE	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
SURROGATES			RANGE	SW-846 8260B	01/07/2005	ST
Dibromofluoromethane	111		86-118%	SW-846 8260B	01/07/2005	ST
Toluene-d8	106		88-110%	SW-846 8260B	01/07/2005	ST
4-Bromofluorobenzene	104		86-115%	SW-846 8260B	01/07/2005	ST
1,2 Dichloroethane-d4	104		80-120%	SW-846 8260B	01/07/2005	ST

Method 8270C: Increased detection limit due to limited sample volume.

Method 608: Increased detection limit due to limited sample volume.

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: MW-5
SAMPLE TYPE: GRAB
SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1221	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1232	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1242	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1248	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1254	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1260	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
SURROGATE			RANGE	SW-846 8082	01/10/2005	MFT
Tetrachloro-m-xylene (TCMX)	74		30-150%	SW-846 8082	01/10/2005	MFT
Decachlorobiphenyl	78		30-150%	SW-846 8082	01/10/2005	MFT
Extraction date	Extracted			SW846 3510	01/07/2005	MAO
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Acenaphthylene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Anthracene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzidine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)anthracene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(b)fluoranthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(k)fluoranthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(g,h,i)perylene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)pyrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-chloroethyl)ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-Chloroethoxy)methane	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
bis(2-chloroisopropyl)ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-ethylhexyl)phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Bromophenyl phenyl ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Butylbenzyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chloronaphthalene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chlorophenyl phenyl ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Chrysene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Dibenzo(a,h)anthracene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Di-n-butyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Dichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,3-Dichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,4-Dichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
3,3'-Dichlorobenzidine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Diethyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Dimethyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrotoluene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,6-Dinitrotoluene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: MW-5
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Di-n-octyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Diphenylhydrazine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Fluoranthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Fluorene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobutadiene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorocyclopentadiene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachloroethane	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Indeno(1,2,3-cd)pyrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Isophorone	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Naphthalene	48	20	ug/l	SW-846 8270C	01/07/2005	DMM
Nitrobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodimethylamine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodiphenylamine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodi-n-propylamine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Phenanthrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Pyrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,2,4-Trichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chloro-3-methylphenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dichlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dimethylphenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Methyl-4,6-dinitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Nitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Nitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Pentachlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Phenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4,6-Trichlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
SURROGATES			RANGE	SW-846 8270C	01/07/2005	DMM
Phenol-d5	37		10-94%	SW-846 8270C	01/07/2005	DMM
2-Fluorophenol	39		21-100%	SW-846 8270C	01/07/2005	DMM
2,4,6-Tribromophenol	66		10-123%	SW-846 8270C	01/07/2005	DMM
Nitrobenzene-d5	70		35-114%	SW-846 8270C	01/07/2005	DMM
2-Fluorobiphenyl	77		43-116%	SW-846 8270C	01/07/2005	DMM
P-Terphenyl-d14	72		33-141%	SW-846 8270C	01/07/2005	DMM
Volatile Organic Compounds						
Benzene	12	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromoform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: MW-5
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromomethane	<10	10	ug/l	SW-846 8260B	01/07/2005	ST
n-Butylbenzene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
sec-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chlorobenzene	51	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloroethane	40	5	ug/l	SW-846 8260B	01/07/2005	ST
Chloroform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromomethane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichlorobenzene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,4-Dichlorobenzene	20	1	ug/l	SW-846 8260B	01/07/2005	ST
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
cis-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
trans-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Ethylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Isopropylbenzene	10	1	ug/l	SW-846 8260B	01/07/2005	ST
p-Isopropyltoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Methylene Chloride	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
Naphthalene	70	1	ug/l	SW-846 8260B	01/07/2005	ST
n-Propylbenzene	7	1	ug/l	SW-846 8260B	01/07/2005	ST
Styrene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Toluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 002
SAMPLE DESCRIPTION: MW-5
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trimethylbenzene	51	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3,5-Trimethylbenzene	16	1	ug/l	SW-846 8260B	01/07/2005	ST
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
o-Xylene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
m&p-Xylene	240	1	ug/l	SW-846 8260B	01/07/2005	ST
MTBE	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
SURROGATES			RANGE	SW-846 8260B	01/07/2005	ST
Dibromofluoromethane	113		86-118%	SW-846 8260B	01/07/2005	ST
Toluene-d8	109		88-110%	SW-846 8260B	01/07/2005	ST
4-Bromofluorobenzene	99		86-115%	SW-846 8260B	01/07/2005	ST
1,2 Dichloroethane-d4	104		80-120%	SW-846 8260B	01/07/2005	ST

Method 8270C: Increased detection limit due to limited sample volume.

Method 608: Increased detection limit due to limited sample volume.

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

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Data Reporting

Sample # 003
SAMPLE DESCRIPTION: MW-6
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1221	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1232	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1242	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1248	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1254	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1260	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
SURROGATE			RANGE	SW-846 8082	01/10/2005	MFT
Tetrachloro-m-xylene (TCMX)	78		30-150%	SW-846 8082	01/10/2005	MFT
Decachlorobiphenyl	68		30-150%	SW-846 8082	01/10/2005	MFT
Extraction date	Extracted			SW846 3510	01/07/2005	MAO
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Acenaphthylene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Anthracene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzidine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)anthracene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(b)fluoranthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(k)fluoranthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(g,h,i)perylene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)pyrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-chloroethyl)ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-Chloroethoxy)methane	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
bis(2-chloroisopropyl)ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-ethylhexyl)phthalate	38	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Bromophenyl phenyl ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Butylbenzyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chloronaphthalene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chlorophenyl phenyl ether	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Chrysene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Dibenzo(a,h)anthracene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Di-n-butyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Dichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,3-Dichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,4-Dichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
3,3'-Dichlorobenzidine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Diethyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Dimethyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrotoluene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,6-Dinitrotoluene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 003
SAMPLE DESCRIPTION: MW-6
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Di-n-octyl phthalate	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Diphenylhydrazine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Fluoranthene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Fluorene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobutadiene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorocyclopentadiene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachloroethane	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Indeno(1,2,3-cd)pyrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Isophorone	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Naphthalene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Nitrobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodimethylamine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodiphenylamine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodi-n-propylamine	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Phenanthrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Pyrene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
1,2,4-Trichlorobenzene	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chloro-3-methylphenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dichlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dimethylphenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Methyl-4,6-dinitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2-Nitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
4-Nitrophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Pentachlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
Phenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
2,4,6-Trichlorophenol	<30	30	ug/l	SW-846 8270C	01/07/2005	DMM
SURROGATES			RANGE	SW-846 8270C	01/07/2005	DMM
Phenol-d5	40		10-94%	SW-846 8270C	01/07/2005	DMM
2-Fluorophenol	41		21-100%	SW-846 8270C	01/07/2005	DMM
2,4,6-Tribromophenol	68		10-123%	SW-846 8270C	01/07/2005	DMM
Nitrobenzene-d5	70		35-114%	SW-846 8270C	01/07/2005	DMM
2-Fluorobiphenyl	79		43-116%	SW-846 8270C	01/07/2005	DMM
P-Terphenyl-d14	71		33-141%	SW-846 8270C	01/07/2005	DMM
Volatile Organic Compounds						
Benzene	11	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromoform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

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Lincoln Environmental, Inc.
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Work Order #: 0501-00221

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Data Reporting

Sample # 003
SAMPLE DESCRIPTION: MW-6
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromomethane	<10	10	ug/l	SW-846 8260B	01/07/2005	ST
n-Butylbenzene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
sec-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chlorobenzene	30	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloroethane	43	5	ug/l	SW-846 8260B	01/07/2005	ST
Chloroform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromomethane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichlorobenzene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,4-Dichlorobenzene	17	1	ug/l	SW-846 8260B	01/07/2005	ST
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
cis-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
trans-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Ethylbenzene	3	1	ug/l	SW-846 8260B	01/07/2005	ST
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Isopropylbenzene	6	1	ug/l	SW-846 8260B	01/07/2005	ST
p-Isopropyltoluene	1	1	ug/l	SW-846 8260B	01/07/2005	ST
Methylene Chloride	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
Naphthalene	42	1	ug/l	SW-846 8260B	01/07/2005	ST
n-Propylbenzene	6	1	ug/l	SW-846 8260B	01/07/2005	ST
Styrene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Toluene	1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

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CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 003
SAMPLE DESCRIPTION: MW-6
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trimethylbenzene	40	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3,5-Trimethylbenzene	4	1	ug/l	SW-846 8260B	01/07/2005	ST
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
o-Xylene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
m&p-Xylene	27	1	ug/l	SW-846 8260B	01/07/2005	ST
MTBE	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
SURROGATES			RANGE	SW-846 8260B	01/07/2005	ST
Dibromofluoromethane	111		86-118%	SW-846 8260B	01/07/2005	ST
Toluene-d8	106		88-110%	SW-846 8260B	01/07/2005	ST
4-Bromofluorobenzene	99		86-115%	SW-846 8260B	01/07/2005	ST
1,2 Dichloroethane-d4	109		80-120%	SW-846 8260B	01/07/2005	ST

Method 8270C: Increased detection limit due to limited sample volume.

Method 608: Increased detection limit due to limited sample volume.

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
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Sample # 004
SAMPLE DESCRIPTION: MW-7
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1221	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1232	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1242	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1248	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1254	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1260	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
SURROGATE			RANGE	SW-846 8082	01/10/2005	MFT
Tetrachloro-m-xylene (TCMX)	72		30-150%	SW-846 8082	01/10/2005	MFT
Decachlorobiphenyl	88		30-150%	SW-846 8082	01/10/2005	MFT
Extraction date	Extracted			SW846 3510	01/07/2005	MAO
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Acenaphthylene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Anthracene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Benzidine	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)anthracene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(b)fluoranthene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(k)fluoranthene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(g,h,i)perylene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)pyrene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-chloroethyl)ether	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-Chloroethoxy)methane	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
bis(2-chloroisopropyl)ether	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-ethylhexyl)phthalate	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
4-Bromophenyl phenyl ether	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Butylbenzyl phthalate	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chloronaphthalene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chlorophenyl phenyl ether	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Chrysene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Dibenzo(a,h)anthracene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Di-n-butyl phthalate	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Dichlorobenzene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
1,3-Dichlorobenzene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
1,4-Dichlorobenzene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
3,3'-Dichlorobenzidine	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Diethyl phthalate	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Dimethyl phthalate	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrotoluene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2,6-Dinitrotoluene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM

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CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
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Data Reporting

Sample # 004
SAMPLE DESCRIPTION: MW-7
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Di-n-octyl phthalate	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Diphenylhydrazine	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Fluoranthene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Fluorene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobenzene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobutadiene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorocyclopentadiene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachloroethane	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Indeno(1,2,3-cd)pyrene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Isophorone	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Naphthalene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Nitrobenzene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodimethylamine	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodiphenylamine	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodi-n-propylamine	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Phenanthrene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Pyrene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
1,2,4-Trichlorobenzene	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chloro-3-methylphenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chlorophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dichlorophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dimethylphenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2-Methyl-4,6-dinitrophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2-Nitrophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
4-Nitrophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Pentachlorophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
Phenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
2,4,6-Trichlorophenol	<10	10	ug/l	SW-846 8270C	01/07/2005	DMM
SURROGATES			RANGE	SW-846 8270C	01/07/2005	DMM
Phenol-d5	41		10-94%	SW-846 8270C	01/07/2005	DMM
2-Fluorophenol	44		21-100%	SW-846 8270C	01/07/2005	DMM
2,4,6-Tribromophenol	69		10-123%	SW-846 8270C	01/07/2005	DMM
Nitrobenzene-d5	78		35-114%	SW-846 8270C	01/07/2005	DMM
2-Fluorobiphenyl	84		43-116%	SW-846 8270C	01/07/2005	DMM
P-Terphenyl-d14	73		33-141%	SW-846 8270C	01/07/2005	DMM
Volatile Organic Compounds						
Benzene	2	1	ug/l	SW-846 8260B	01/11/2005	ST
Bromobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Bromochloromethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Bromoform	<1	1	ug/l	SW-846 8260B	01/11/2005	ST

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CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 004
SAMPLE DESCRIPTION: MW-7
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromomethane	<10	10	ug/l	SW-846 8260B	01/11/2005	ST
n-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
sec-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Chlorobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Chloroethane	<5	5	ug/l	SW-846 8260B	01/11/2005	ST
Chloroform	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Chloromethane	<5	5	ug/l	SW-846 8260B	01/11/2005	ST
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	01/11/2005	ST
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Dibromomethane	<2	2	ug/l	SW-846 8260B	01/11/2005	ST
1,2-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,3-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,4-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	01/11/2005	ST
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
cis-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
trans-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Ethylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Isopropylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
p-Isopropyltoluene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Methylene Chloride	<5	5	ug/l	SW-846 8260B	01/11/2005	ST
Naphthalene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
n-Propylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Styrene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Toluene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST

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CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 004
SAMPLE DESCRIPTION: MW-7
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Trichloroethene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,2,4-Trimethylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
1,3,5-Trimethylbenzene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
o-Xylene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
m&p-Xylene	<1	1	ug/l	SW-846 8260B	01/11/2005	ST
MTBE	<2	2	ug/l	SW-846 8260B	01/11/2005	ST
SURROGATES			RANGE	SW-846 8260B	01/11/2005	ST
Dibromofluoromethane	108		86-118%	SW-846 8260B	01/11/2005	ST
Toluene-d8	106		88-110%	SW-846 8260B	01/11/2005	ST
4-Bromofluorobenzene	95		86-115%	SW-846 8260B	01/11/2005	ST
1,2 Dichloroethane-d4	112		80-120%	SW-846 8260B	01/11/2005	ST

Method 608: Increased detection limit due to limited sample volume.

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
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Work Order #: 0501-00221

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Sample # 005
SAMPLE DESCRIPTION: MW-8
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
PCB						
Aroclor-1016	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1221	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1232	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1242	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1248	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1254	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
Aroclor-1260	<2	2	ug/l	SW-846 8082	01/10/2005	MFT
SURROGATE			RANGE	SW-846 8082	01/10/2005	MFT
Tetrachloro-m-xylene (TCMX)	66		30-150%	SW-846 8082	01/10/2005	MFT
Decachlorobiphenyl	64		30-150%	SW-846 8082	01/10/2005	MFT
Extraction date	Extracted			SW846 3510	01/07/2005	MAO
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Acenaphthylene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Anthracene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzidine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)anthracene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(b)fluoranthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(k)fluoranthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(g,h,i)perylene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Benzo(a)pyrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-chloroethyl)ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-Chloroethoxy)methane	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
bis(2-chloroisopropyl)ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Bis(2-ethylhexyl)phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Bromophenyl phenyl ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Butylbenzyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chloronaphthalene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chlorophenyl phenyl ether	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Chrysene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Dibenzo(a,h)anthracene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Di-n-butyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Dichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,3-Dichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,4-Dichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
3,3'-Dichlorobenzidine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Diethyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Dimethyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrotoluene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,6-Dinitrotoluene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: MW-8
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Di-n-octyl phthalate	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,2-Diphenylhydrazine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Fluoranthene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Fluorene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorobutadiene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachlorocyclopentadiene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Hexachloroethane	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Indeno(1,2,3-cd)pyrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Isophorone	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Naphthalene	42	20	ug/l	SW-846 8270C	01/07/2005	DMM
Nitrobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodimethylamine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodiphenylamine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
N-nitrosodi-n-propylamine	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Phenanthrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Pyrene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
1,2,4-Trichlorobenzene	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Chloro-3-methylphenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Chlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dichlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dimethylphenol	27	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Methyl-4,6-dinitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4-Dinitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2-Nitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
4-Nitrophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Pentachlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
Phenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
2,4,6-Trichlorophenol	<20	20	ug/l	SW-846 8270C	01/07/2005	DMM
SURROGATES			RANGE	SW-846 8270C	01/07/2005	DMM
Phenol-d5	39		10-94%	SW-846 8270C	01/07/2005	DMM
2-Fluorophenol	35		21-100%	SW-846 8270C	01/07/2005	DMM
2,4,6-Tribromophenol	67		10-123%	SW-846 8270C	01/07/2005	DMM
Nitrobenzene-d5	74		35-114%	SW-846 8270C	01/07/2005	DMM
2-Fluorobiphenyl	82		43-116%	SW-846 8270C	01/07/2005	DMM
P-Terphenyl-d14	73		33-141%	SW-846 8270C	01/07/2005	DMM
Volatile Organic Compounds						
Benzene	19	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromodichloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Bromoform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: MW-8
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Bromomethane	<10	10	ug/l	SW-846 8260B	01/07/2005	ST
n-Butylbenzene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
sec-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
tert-Butylbenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Carbon Tetrachloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chlorobenzene	17	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloroethane	280	5	ug/l	SW-846 8260B	01/07/2005	ST
Chloroform	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Chloromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
2-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
4-Chlorotoluene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromochloromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromo-3-Chloropropane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dibromoethane(EDB)	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Dibromomethane	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichlorobenzene	1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,4-Dichlorobenzene	8	1	ug/l	SW-846 8260B	01/07/2005	ST
Dichlorodifluoromethane	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
cis-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
trans-1,2-Dichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
2,2-Dichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1-Dichloropropene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Ethylbenzene	130	1	ug/l	SW-846 8260B	01/07/2005	ST
Hexachlorobutadiene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Isopropylbenzene	11	1	ug/l	SW-846 8260B	01/07/2005	ST
p-Isopropyltoluene	7	1	ug/l	SW-846 8260B	01/07/2005	ST
Methylene Chloride	<5	5	ug/l	SW-846 8260B	01/07/2005	ST
Naphthalene	46	1	ug/l	SW-846 8260B	01/07/2005	ST
n-Propylbenzene	8	1	ug/l	SW-846 8260B	01/07/2005	ST
Styrene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,1,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2,2-Tetrachloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Tetrachloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Toluene	2	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trichlorobenzene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Lincoln Environmental, Inc.
Date Received: 01/05/2005
Work Order #: 0501-00221

Approved by: _____
Data Reporting

Sample # 005
SAMPLE DESCRIPTION: MW-8
SAMPLE TYPE: GRAB **SAMPLE DATE/TIME:** 01/05/2005

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
1,1,1-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,1,2-Trichloroethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichloroethene	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
Trichlorofluoromethane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,3-Trichloropropane	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
1,2,4-Trimethylbenzene	57	1	ug/l	SW-846 8260B	01/07/2005	ST
1,3,5-Trimethylbenzene	20	1	ug/l	SW-846 8260B	01/07/2005	ST
Vinyl Chloride	<1	1	ug/l	SW-846 8260B	01/07/2005	ST
o-Xylene	36	1	ug/l	SW-846 8260B	01/07/2005	ST
m&p-Xylene	2200	1	ug/l	SW-846 8260B	01/07/2005	ST
MTBE	<2	2	ug/l	SW-846 8260B	01/07/2005	ST
SURROGATES			RANGE	SW-846 8260B	01/07/2005	ST
Dibromofluoromethane	110		86-118%	SW-846 8260B	01/07/2005	ST
Toluene-d8	107		88-110%	SW-846 8260B	01/07/2005	ST
4-Bromofluorobenzene	102		86-115%	SW-846 8260B	01/07/2005	ST
1,2 Dichloroethane-d4	98		80-120%	SW-846 8260B	01/07/2005	ST

Method 8270C: Increased detection limit due to limited sample volume.

Method 608: Increased detection limit due to limited sample volume.

PCB ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL CLIENT: Lincoln Environmental

Date: 1/12/2005 W.O #: 0501-00221

COMPOUND		CONCENTRATION UNITS: ug/l
Aroclor-1016		<1
Aroclor-1221		<1
Aroclor-1232		<1
Aroclor-1242		<1
Aroclor-1248		<1
Aroclor-1254		<1
Aroclor-1260		<1
Tetrachloro-meta-xylene	(30-150%)	82
Decachlorobiphenyl	(30-150%)	104

PCB ORGANICS LCS/LCS DUPLICATE DATA SHEET

RI ANALYTICAL

Client: Lincoln Environmental

W.O. # 0501-00221

COMPOUND		SPIKE CONC. ug/l	LCS CONC. ug/l	LCS % REC.	LCS DUP. CONC. ug/l	LCS DUP. % REC.	RPD
oclor-1016		2.5	2.8	112	2.7	108	3.6
Aroclor-1260		2.5	3.2	128	3.1	124	3.2
Tetracholor-m-xylene	(30-150%)			94		86	
ecachlorobiphenyl	(30-150%)			124		124	

METHOD 8270

SEMI-VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL CLIENT: Lincoln Environmental Inc.

W.O #: 0501-00221

COMPOUND	CONCENTRATION UNITS: ug/l
Acenaphthene	<10
Acenaphthylene	<10
Anthracene	<10
Benzidine	<10
Benzo(a)anthracene	<10
Benzo(b)fluoranthene	<10
Benzo(k)fluoranthene	<10
Benzo(g,h,i)perylene	<10
Benzo(a)pyrene	<10
Bis(2-chloroethyl)ether	<10
Bis(2-chlorethoxy)methane	<10
bis(2-Chloroisopropyl)ether	<10
Bis(2-ethylhexyl)phthalate	<10
4-Bromophenyl phenyl ether	<10
Butylbenzyl phthalate	<10
2-Chloronaphthalene	<10
4-Chlorophenyl phenyl ether	<10
Chrysene	<10
Dibenzo(a,h)anthracene	<10
Di-n-butyl phthalate	<10
1,2-Dichlorobenzene	<10
1,3-Dichlorobenzene	<10
1,4-Dichlorobenzene	<10
3,3-Dichlorobenzidine	<10
Diethyl phthalate	<10
Dimethyl phthalate	<10
2,4-Dinitrotoluene	<10
2,6-Dinitrotoluene	<10
Di-n-octyl phthalate	<10
1,2-Diphenylhydrazine	<10
Fluoranthene	<10
Fluorene	<10
Hexachlorobenzene	<10
Hexachlorobutadiene	<10
Hexachlorocyclopentadiene	<10
Hexachloroethane	<10
Indeno(1,2,3-cd)pyrene	<10
Isophorone	<10
Naphthalene	<10

METHOD 8270
SEMI-VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL CLIENT: Lincoln Environmental Inc.

W.O #: 0501-00221

COMPOUND	CONCENTRATION UNITS: ug/l
Nitrobenzene	<10
N-nitrosodimethylamine	<10
N-nitrosodiphenylamine	<10
N-nitrosodi-n-propylamine	<10
Phenanthrene	<10
Pyrene	<10
1,2,4-Trichlorobenzene	<10
4-Chloro-3-methylphenol	<10
2-Chlorophenol	<10
2,4-Dichlorophenol	<10
2,4-Dimethylphenol	<10
2-Methyl-4,6-dinitrophenol	<10
2,4-Dinitrophenol	<10
2-Nitrophenol	<10
4-Nitrophenol	<10
Pentachlorophenol	<10
Phenol	<10
2,4,6-Trichlorophenol	<10
Phenol-d5	32
2-Fluorophenol	35
2,4,6-Tribromophenol	57
Nitrobenzene-d5	60
2-Fluorobiphenyl	65
P-Terphenyl-d14	68

METHOD 8270

SEMI-VOLATILE ORGANICS LCS/LCS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: Lincoln Environmental Inc.

W.O. # 0501-00221

COMPOUND	SPIKE CONC. ug/L	LCS CONC. ug/L	LCS % REC.	LCS DUP CONC. ug/L	LCS DUP % REC.	RPD
Acenaphthene	50	40	80	39	78	3
Acenaphthylene	50	41	82	39	78	5
Anthracene	50	39	78	38	76	3
Benzo(a)anthracene	50	42	84	40	80	5
Benzo(b)fluoranthene	50	36	72	34	68	6
Benzo(k)fluoranthene	50	48	96	46	92	4
Benzo(g,h,i)perylene	50	42	84	41	82	2
Benzo(a)pyrene	50	41	82	39	78	5
Bis(2-chloroethyl)ether	50	38	76	37	74	3
Bis(2-chlorethoxy)methane	50	39	78	37	74	5
bis(2-Chloroisopropyl)ether	50	36	72	37	74	3
Bis(2-ethylhexyl)phthalate	50	42	84	40	80	5
4-Bromophenyl phenyl ether	50	42	84	40	80	5
Butylbenzyl phthalate	50	41	82	39	78	5
2-Chloronaphthalene	50	40	80	38	76	5
4-Chlorophenyl phenyl ether	50	40	80	39	78	3
Chrysene	50	41	82	39	78	5
Dibenzo(a,h)anthracene	50	41	82	39	78	5
Di-n-butyl phthalate	50	41	82	40	80	2
1,2-Dichlorobenzene	50	36	72	36	72	0
1,3-Dichlorobenzene	50	35	70	36	72	3
1,4-Dichlorobenzene	50	36	72	36	72	0
Diethyl phthalate	50	42	84	40	80	5
Dimethyl phthalate	50	41	82	39	78	5
2,4-Dinitrotoluene	50	40	80	37	74	8
2,6-Dinitrotoluene	50	41	82	38	76	8
Di-n-octyl phthalate	50	39	78	38	76	3
1,2-Diphenylhydrazine	50	21	42	20	40	5
Fluoranthene	50	41	82	39	78	5
Fluorene	50	41	82	39	78	5
Hexachlorobenzene	50	43	86	41	82	5
Hexachlorobutadiene	50	39	78	38	76	3
Hexachlorocyclopentadiene	50	40	80	39	78	3
Hexachloroethane	50	36	72	36	72	0
Indeno(1,2,3-cd)pyrene	50	41	82	40	80	2
Isophorone	50	40	80	38	76	5
Naphthalene	50	36	72	36	72	0

METHOD 8270

SEMI-VOLATILE ORGANICS LCS/LCS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: Lincoln Environmental Inc.

W.O. # 0501-00221

COMPOUND	SPIKE CONC. ug/L	LCS CONC. ug/L	LCS % REC.	LCS DUP CONC. ug/L	LCS DUP % REC.	RPD
Nitrobenzene	50	37	74	36	72	3
N-nitrosodimethylamine	50	25	50	25	50	0
N-nitrosodi-n-propylamine	50	39	78	38	76	3
Phenanthrene	50	40	80	38	76	5
Pyrene	50	40	80	38	76	5
1,2,4-Trichlorobenzene	50	37	74	36	72	3
4-Chloro-3-methylphenol	50	40	80	39	78	3
2-Chlorophenol	50	36	72	36	72	0
2,4-Dichlorophenol	50	39	78	38	76	3
2,4-Dimethylphenol	50	38	76	37	74	3
2-Methyl-4,6-dinitrophenol	50	63	126	61	122	3
2,4-Dinitrophenol	50	36	72	37	74	3
2-Nitrophenol	50	37	74	36	72	3
4-Nitrophenol	50	16	32	16	32	0
Pentachlorophenol	50	44	88	42	84	5
Phenol	50	17	34	17	34	0
2,4,6-Trichlorophenol	50	40	80	39	78	3
Phenol-d5			36		37	
2-Fluorophenol			41		42	
2,4,6-Tribromophenol			59		57	
Nitrobenzene-d5			69		67	
2-Fluorobiphenyl			70		68	
P-Terphenyl-d14			68		64	

METHOD 524.2

VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O. # 0501-00221

COMPOUND	CONCENTRATION UNITS: ug/L
Dichlorodifluoromethane	<5
Chloromethane	<5
Vinyl Chloride	<1
Bromomethane	<10
Chloroethane	<5
Trichlorofluoromethane	<1
1,1-Dichloroethene	<1
Methylene Chloride	<5
Methyl tert-Butyl Ether (MTBE)	<2
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
2,2-Dichloropropane	<1
Bromochloromethane	<1
Chloroform	<1
1,1,1-Trichloroethane	<1
1,1-Dichloropropene	<1
Carbon Tetrachloride	<1
Benzene	<1
1,2-Dichloroethane	<1
Trichloroethene	<1
1,2-Dichloropropane	<1
Dibromomethane	<2
Bromodichloromethane	<1
Toluene	<1
1,1,2-Trichloroethane	<1
Tetrachloroethene	<1
1,3-Dichloropropane	<1
Dibromochloromethane	<1
1,2-Dibromethane (EDB)	<1
Chlorobenzene	<1
Ethylbenzene	<1
1,1,1,2-Tetrachloroethane	<1
m&p-Xylene	<1
o-Xylene	<1
Styrene	<1
Bromoform	<1

METHOD 524.2

VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O.#: 0501-00221

COMPOUND	CONCENTRATION UNITS: ug/L
Isopropylbenzene	<1
1,1,2,2-Tetrachloroethane	<1
Bromobenzene	<1
n-Propylbenzene	<1
1,2,3-Trichloropropane	<1
2-Chlorotoluene	<1
1,3,5-Trimethylbenzene	<1
4-Chlorotoluene	<1
tert-Butylbenzene	<1
1,2,4-Trimethylbenzene	<1
sec-Butylbenzene	<1
p-Isopropyltoluene	<1
1,3-Dichlorobenzene	<1
1,4-Dichlorobenzene	<1
n-Butylbenzene	<1
1,2-Dichlorobenzene	<1
1,2-Dibromo-3-chloropropane	<2
1,2,4-Trichlorobenzene	<1
Hexachlorobutadiene	<1
Naphthalene	<1
1,2,3-Trichlorobenzene	<1
cis-1,3-Dichloropropene	<1
trans-1,3-Dichloropropene	<1
n-Hexane	<1
Surrogates (Acceptable Limits 80-120%)	
Dibromofluoromethane	114
1,2-Dichloroethane-d4	110
Toluene-d8	107
4-Bromofluorobenzene	94

METHOD 524.2

VOLATILE ORGANICS LCS DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O. # 0501-00221

COMPOUND	SPIKE ADDED ug/L	AMOUNT DETECTED ug/L	% RECOVERY
Dichlorodifluoromethane	50	39	78
Chloromethane	50	36	72
Vinyl Chloride	50	38	76
Bromomethane	50	52	104
Chloroethane	50	40	80
Trichlorofluoromethane	50	47	94
1,1-Dichloroethene	50	41	82
Methylene Chloride	50	43	86
Methyl tert-Butyl Ether (MTBE)	50	40	80
trans-1,2-Dichloroethene	50	44	88
1,1-Dichloroethane	50	42	84
cis-1,2-Dichloroethene	50	46	92
2,2-Dichloropropane	50	45	90
Bromochloromethane	50	50	100
Chloroform	50	48	96
1,1,1-Trichloroethane	50	47	94
1,1-Dichloropropene	50	42	84
Carbon Tetrachloride	50	49	98
Benzene	50	44	88
1,2-Dichloroethane	50	48	96
Trichloroethene	50	45	90
1,2-Dichloropropane	50	41	82
Dibromomethane	50	48	96
Bromodichloromethane	50	49	98
Toluene	50	44	88
1,1,2-Trichloroethane	50	46	92
Tetrachloroethene	50	48	96
1,3-Dichloropropane	50	46	92
Dibromochloromethane	50	53	106
1,2-Dibromethane (EDB)	50	50	100
Chlorobenzene	50	44	88
Ethylbenzene	50	43	86
1,1,1,2-Tetrachloroethane	50	49	98
m&p-Xylene	100	89	89
o-Xylene	50	44	88
Styrene	50	44	88
Bromoform	50	52	104

METHOD 524.2

VOLATILE ORGANICS LCS DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O. # 0501-00221

COMPOUND	SPIKE ADDED ug/L	AMOUNT DETECTED ug/L	% RECOVERY
Isopropylbenzene	50	44	88
1,1,2,2-Tetrachloroethane	50	42	84
Bromobenzene	50	50	100
n-Propylbenzene	50	43	86
1,2,3-Trichloropropane	50	44	88
2-Chlorotoluene	50	44	88
1,3,5-Trimethylbenzene	50	45	90
4-Chlorotoluene	50	44	88
tert-Butylbenzene	50	44	88
1,2,4-Trimethylbenzene	50	46	92
sec-Butylbenzene	50	43	86
p-Isopropyltoluene	50	44	88
1,3-Dichlorobenzene	50	48	96
1,4-Dichlorobenzene	50	46	92
n-Butylbenzene	50	40	80
1,2-Dichlorobenzene	50	46	92
1,2-Dibromo-3-chloropropane	50	46	92
1,2,4-Trichlorobenzene	50	46	92
Hexachlorobutadiene	50	46	92
Naphthalene	50	45	90
1,2,3-Trichlorobenzene	50	48	96
Surrogates (Acceptable Limits 80-120%)			
Dibromofluoromethane			114
1,2-Dichloroethane-d4			101
Toluene-d8			109
4-Bromofluorobenzene			99

METHOD 524.2

VOLATILE ORGANICS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

Duplicate Sample # 0501-00221-004 W.O. # 0501-00221

COMPOUND	SAMPLE RESULT ug/L	DUPLICATE SAMPLE RESULT ug/L	MEAN ug/L	REPORTED VALUE ug/L	RPD
Dichlorodifluoromethane	<5.0	<5.0	<5.0	<5	0
Chloromethane	<5.0	<5.0	<5.0	<5	0
Vinyl Chloride	<1.0	<1.0	<1.0	<1	0
Bromomethane	<10.0	<10.0	<10.0	<10	0
Chloroethane	<5.0	<5.0	<5.0	<5	0
Trichlorofluoromethane	<1.0	<1.0	<1.0	<1	0
1,1-Dichloroethene	<1.0	<1.0	<1.0	<1	0
Methylene Chloride	<5.0	<5.0	<5.0	<5	0
Methyl tert-Butyl Ether (MTBE)	<2.0	<2.0	<2.0	<2	0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1	0
1,1-Dichloroethane	<1.0	<1.0	<1.0	<1	0
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0	<1	0
2,2-Dichloropropane	<1.0	<1.0	<1.0	<1	0
Bromochloromethane	<1.0	<1.0	<1.0	<1	0
Chloroform	<1.0	<1.0	<1.0	<1	0
1,1,1-Trichloroethane	<1.0	<1.0	<1.0	<1	0
1,1-Dichloropropene	<1.0	<1.0	<1.0	<1	0
Carbon Tetrachloride	<1.0	<1.0	<1.0	<1	0
Benzene	1.8	1.9	1.8	2	0
1,2-Dichloroethane	<1.0	<1.0	<1.0	<1	0
Trichloroethene	<1.0	<1.0	<1.0	<1	0
1,2-Dichloropropane	<1.0	<1.0	<1.0	<1	0
Dibromomethane	<2.0	<2.0	<2.0	<2	5
Bromodichloromethane	<1.0	<1.0	<1.0	<1	0
Toluene	<1.0	<1.0	<1.0	<1	0
1,1,2-Trichloroethane	<1.0	<1.0	<1.0	<1	0
Tetrachloroethene	<1.0	<1.0	<1.0	<1	0
1,3-Dichloropropane	<1.0	<1.0	<1.0	<1	0
Dibromochloromethane	<1.0	<1.0	<1.0	<1	0
1,2-Dibromethane (EDB)	<1.0	<1.0	<1.0	<1	0
Chlorobenzene	<1.0	<1.0	<1.0	<1	0
Ethylbenzene	<1.0	<1.0	<1.0	<1	0
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1	0
m&p-Xylene	<1.0	<1.0	<1.0	<1	0
o-Xylene	<1.0	<1.0	<1.0	<1	0
Styrene	<1.0	<1.0	<1.0	<1	0
Bromoform	<1.0	<1.0	<1.0	<1	0

METHOD 524.2

VOLATILE ORGANICS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

Duplicate Sample # 0501-00221-004 W.O. # 0501-00221

COMPOUND	SAMPLE RESULT ug/L	DUPLICATE SAMPLE RESULT ug/L	MEAN ug/L	REPORTED VALUE ug/L	RPD
Isopropylbenzene	<1.0	<1.0	<1.0	<1	0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0	<1	0
Bromobenzene	<1.0	<1.0	<1.0	<1	0
n-Propylbenzene	<1.0	<1.0	<1.0	<1	0
1,2,3-Trichloropropane	<1.0	<1.0	<1.0	<1	0
2-Chlorotoluene	<1.0	<1.0	<1.0	<1	0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1.0	<1	0
4-Chlorotoluene	<1.0	<1.0	<1.0	<1	0
tert-Butylbenzene	<1.0	<1.0	<1.0	<1	0
1,2,4-Trimethylbenzene	<1.0	<1.0	<1.0	<1	0
sec-Butylbenzene	<1.0	<1.0	<1.0	<1	0
p-Isopropyltoluene	<1.0	<1.0	<1.0	<1	0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0	<1	0
1,4-Dichlorobenzene	<1.0	<1.0	<1.0	<1	0
n-Butylbenzene	<1.0	<1.0	<1.0	<1	0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0	<1	0
1,2-Dibromo-3-chloropropane	<2.0	<2.0	<2.0	<2	0
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0	<1	0
Hexachlorobutadiene	<1.0	<1.0	<1.0	<1	0
Naphthalene	<1.0	<1.0	<1.0	<1	0
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0	<1	0
Surrogates (Acceptable Limits 80-120%)					
Dibromofluoromethane	108	110			
1,2-Dichloroethane-d4	112	105			
Toluene-d8	106	109			
4-Bromofluorobenzene	95	92			

METHOD 8260

VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O. # 0501-00221

COMPOUND	CONCENTRATION UNITS: ug/l
Dichlorodifluoromethane	<5
Chloromethane	<5
Vinyl Chloride	<1
Bromomethane	<10
Chloroethane	<5
Trichlorofluoromethane	<1
1,1-Dichloroethene	<1
Methylene Chloride	<5
Methyl tert-Butyl Ether (MTBE)	<2
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
2,2-Dichloropropane	<1
Bromochloromethane	<1
Chloroform	<1
1,1,1-Trichloroethane	<1
1,1-Dichloropropene	<1
Carbon Tetrachloride	<1
Benzene	<1
1,2-Dichloroethane	<1
Trichloroethene	<1
1,2-Dichloropropane	<1
Dibromomethane	<2
Bromodichloromethane	<1
Toluene	<1
1,1,2-Trichloroethane	<1
Tetrachloroethene	<1
1,3-Dichloropropane	<1
Dibromochloromethane	<1
1,2-Dibromethane (EDB)	<1
Chlorobenzene	<1
Ethylbenzene	<1
1,1,1,2-Tetrachloroethane	<1
m&p-Xylene	<1
o-Xylene	<1
Styrene	<1
Bromoform	<1

METHOD 8260

VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O.#: 0501-00221

COMPOUND	CONCENTRATION UNITS: ug/l
Isopropylbenzene	<1
1,1,2,2-Tetrachloroethane	<1
Bromobenzene	<1
n-Propylbenzene	<1
1,2,3-Trichloropropane	<1
2-Chlorotoluene	<1
1,3,5-Trimethylbenzene	<1
4-Chlorotoluene	<1
tert-Butylbenzene	<1
1,2,4-Trimethylbenzene	<1
sec-Butylbenzene	<1
p-Isopropyltoluene	<1
1,3-Dichlorobenzene	<1
1,4-Dichlorobenzene	<1
n-Butylbenzene	<1
1,2-Dichlorobenzene	<1
1,2-Dibromo-3-chloropropane	<2
1,2,4-Trichlorobenzene	<1
Hexachlorobutadiene	<1
Naphthalene	<1
1,2,3-Trichlorobenzene	<1
Dibromofluoromethane	112
1,2-Dichloroethane-d4	112
Toluene-d8	108
4-Bromofluorobenzene	98

METHOD 8260

VOLATILE ORGANICS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

Duplicate Sample # 0501-00007-006 W.O. # 0501-00221

COMPOUND	SAMPLE RESULT ug/L	DUPLICATE SAMPLE RESULT ug/L	REPORTED MEAN ug/L	REPORTED VALUE ug/L	RPD
Dichlorodifluoromethane	<5	<5	<5	<5	0
Chloromethane	<5	<5	<5	<5	0
Vinyl Chloride	<1	<1	<1	<1	0
Bromomethane	<10	<10	<10	<10	0
Chloroethane	<5	<5	<5	<5	0
Trichlorofluoromethane	<1	<1	<1	<1	0
1,1-Dichloroethene	<1	<1	<1	<1	0
Methylene Chloride	<5	<5	<5	<5	0
Methyl tert-Butyl Ether (MTBE)	<2	<2	<2	<2	0
trans-1,2-Dichloroethene	<1	<1	<1	<1	0
1,1-Dichloroethane	<1	<1	<1	<1	0
cis-1,2-Dichloroethene	<1	<1	<1	<1	0
2,2-Dichloropropane	<1	<1	<1	<1	0
Bromochloromethane	<1	<1	<1	<1	0
Chloroform	<1	<1	<1	<1	0
1,1,1-Trichloroethane	<1	<1	<1	<1	0
1,1-Dichloropropene	<1	<1	<1	<1	0
Carbon Tetrachloride	<1	<1	<1	<1	0
Benzene	<1	<1	<1	<1	0
1,2-Dichloroethane	<1	<1	<1	<1	0
Trichloroethene	<1	<1	<1	<1	0
1,2-Dichloropropane	<1	<1	<1	<1	0
Dibromomethane	<2	<2	<2	<2	0
Bromodichloromethane	<1	<1	<1	<1	0
Toluene	<1	<1	<1	<1	0
1,1,2-Trichloroethane	<1	<1	<1	<1	0
Tetrachloroethene	<1	<1	<1	<1	0
1,3-Dichloropropane	<1	<1	<1	<1	0
Dibromochloromethane	<1	<1	<1	<1	0
1,2-Dibromethane (EDB)	<1	<1	<1	<1	0
Chlorobenzene	<1	<1	<1	<1	0
Ethylbenzene	<1	<1	<1	<1	0
1,1,1,2-Tetrachloroethane	<1	<1	<1	<1	0
m&p-Xylene	<1	<1	<1	<1	0
o-Xylene	<1	<1	<1	<1	0
Styrene	<1	<1	<1	<1	0
Bromoform	<1	<1	<1	<1	0

METHOD 8260

VOLATILE ORGANICS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

Duplicate Sample # 0501-00007-006 W.O. # 0501-00221

COMPOUND	SAMPLE RESULT ug/L	DUPLICATE SAMPLE RESULT ug/L	MEAN ug/L	REPORTED VALUE ug/L	RPD
Isopropylbenzene	<1	<1	<1	<1	0
1,1,2,2-Tetrachloroethane	<1	<1	<1	<1	0
Bromobenzene	<1	<1	<1	<1	0
n-Propylbenzene	<1	<1	<1	<1	0
1,2,3-Trichloropropane	<1	<1	<1	<1	0
2-Chlorotoluene	<1	<1	<1	<1	0
1,3,5-Trimethylbenzene	<1	<1	<1	<1	0
4-Chlorotoluene	<1	<1	<1	<1	0
tert-Butylbenzene	<1	<1	<1	<1	0
1,2,4-Trimethylbenzene	<1	<1	<1	<1	0
sec-Butylbenzene	<1	<1	<1	<1	0
p-Isopropyltoluene	<1	<1	<1	<1	0
1,3-Dichlorobenzene	<1	<1	<1	<1	0
1,4-Dichlorobenzene	<1	<1	<1	<1	0
n-Butylbenzene	<1	<1	<1	<1	0
1,2-Dichlorobenzene	<1	<1	<1	<1	0
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	0
1,2,4-Trichlorobenzene	<1	<1	<1	<1	0
Hexachlorobutadiene	<1	<1	<1	<1	0
Naphthalene	<1	<1	<1	<1	0
1,2,3-Trichlorobenzene	<1	<1	<1	<1	0
Dibromofluoromethane	115	109			
1,2-Dichloroethane-d4	105	107			
Toluene-d8	110	106			
4-Bromofluorobenzene	96	94			

METHOD 8260

VOLATILE ORGANICS LCS/LCS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O. # 0501-00221

COMPOUND	SPIKE CONC. ug/L	LCS CONC. ug/L	LCS % REC.	LCS DUP. CONC. ug/L	LCS DUP. % REC.	RPD
Dichlorodifluoromethane	50	36	72	37	74	3
Chloromethane	50	37	74	41	82	10
Vinyl Chloride	50	46	92	48	96	4
Bromomethane	50	56	112	57	114	2
Chloroethane	50	48	96	48	96	0
Trichlorofluoromethane	50	57	114	54	108	5
,1-Dichloroethene	50	55	110	54	108	2
Methylene Chloride	50	51	102	50	100	2
Methyl tert-Butyl Ether (MTBE)	50	34	68	40	80	16
rans-1,2-Dichloroethene	50	53	106	51	102	4
1,1-Dichloroethane	50	50	100	50	100	0
is-1,2-Dichloroethene	50	53	106	53	106	0
,2-Dichloropropane	50	58	116	58	116	0
Bromochloromethane	50	57	114	59	118	3
Chloroform	50	55	110	58	116	5
,1,1-Trichloroethane	50	60	120	62	124	3
,1-Dichloropropene	50	52	104	53	106	2
Carbon Tetrachloride	50	65	130	64	128	2
Benzene	50	50	100	50	100	0
,2-Dichloroethane	50	55	110	57	114	4
Trichloroethene	50	60	120	54	108	11
,2-Dichloropropane	50	46	92	47	94	2
Dibromomethane	50	55	110	58	116	5
Bromodichloromethane	50	56	112	56	112	0
Toluene	50	50	100	51	102	2
,1,2-Trichloroethane	50	50	100	52	104	4
Tetrachloroethene	50	60	120	60	120	0
1,3-Dichloropropane	50	51	102	53	106	4
Dibromochloromethane	50	59	118	61	122	3
,2-Dibromethane (EDB)	50	56	112	58	116	4
Chlorobenzene	50	52	104	52	104	0
thylbenzene	50	52	104	51	102	2
,1,1,2-Tetrachloroethane	50	59	118	58	116	2
m&p-Xylene	100	108	108	104	104	4
-Xylene	50	53	106	52	104	2
tyrene	50	53	106	53	106	0
Bromoform	50	60	120	61	122	2

METHOD 8260

VOLATILE ORGANICS LCS/LCS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICAL Client: LINCOLN ENVIRONMENTAL, INC.

W.O. # 0501-00221

COMPOUND	SPIKE CONC. ug/L	LCS CONC. ug/L	LCS % REC.	LCS DUP. CONC. ug/L	LCS DUP. % REC.	RPD
sopropylbenzene	50	56	112	54	108	4
1,1,2,2-Tetrachloroethane	50	49	98	49	98	0
Bromobenzene	50	59	118	58	116	2
-Propylbenzene	50	54	108	53	106	2
1,2,3-Trichloropropane	50	51	102	52	104	2
2-Chlorotoluene	50	54	108	54	108	0
,3,5-Trimethylbenzene	50	56	112	55	110	2
-Chlorotoluene	50	54	108	53	106	2
tert-Butylbenzene	50	56	112	55	110	2
,2,4-Trimethylbenzene	50	56	112	55	110	2
ec-Butylbenzene	50	54	108	53	106	2
p-Isopropyltoluene	50	56	112	54	108	4
,3-Dichlorobenzene	50	57	114	57	114	0
,4-Dichlorobenzene	50	52	104	51	102	2
n-Butylbenzene	50	51	102	48	96	6
,2-Dichlorobenzene	50	52	104	50	100	4
,2-Dibromo-3-chloropropane	50	50	100	49	98	2
1,2,4-Trichlorobenzene	50	54	108	53	106	2
Hexachlorobutadiene	50	59	118	56	112	5
Japhthalene	50	51	102	52	104	2
1,2,3-Trichlorobenzene	50	55	110	53	106	4
Dibromofluoromethane			109		112	
,2-Dichloroethane-d4			101		102	
oluene-d8			105		110	
4-Bromofluorobenzene			100		99	

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type	Preservation Code [P]	Matrix Code [M]	VOC's by 8260	SVOC's by 8270	PCB's
12-30-04	PM	MW 1	G	2V 1L	HCL NP	GW	✓	✓	✓
↓	↓	MW 5	↓	↓	↓	↓	↓	↓	↓
↓	↓	MW 6	↓	↓	↓	↓	↓	↓	↓
↓	↓	MW 8	↓	↓	↓	↓	↓	↓	↓

sample not rec'd on 12/30/04 rec'd on 01/05/05 WO# 0501-00331

Rec'd 01/05/05 sample WO# 0501-00331 per Jim Mich

Client Information

Company Name:	Lincoln Environmental
Address:	333 Washington Highway
City / State / Zip:	Smithfield, RI 02917
Telephone:	232-3353 x 133
Fax:	232-1130
Contact Person:	Stephen Gautie

Project Information

Project Name:	Truk-Away Landfill, Warwick, RI
P.O. Number:	R22840
Project Number:	R22840
Report To:	Stephen Gautie
Phone:	
Fax:	
Sampled by:	WALTER Rey Ley
Quote No:	
Email address:	

Relinquished By	Date	Time	Received By	Date	Time
Walter Rey Ley	12-30-04	1640	L R Ray	12/30/04	1640

Turn Around Time

- ✓ Normal
- EMAIL Report
- 5 Business days. Possible surcharge
- Rush ______ (business days)

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3

MCP Data Enhancement QC Package? Yes No

Lab Use Only

- Sample Pick Up Only
- RIAL sampled; attach field hours
- Shipped on ice
- Workorder No: 0412-19858

Container Types: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile

Preservation Codes: NP=None, N=HNO_3, H=HCl, S=H_2SO_4, SH=NaOH, SB=$NaHSO_4$, M=MeOH, T=$Na_2S_2O_3$, Z=ZnOAc, I=Ice

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SI=Sludge, A=Air, B=Bulk/Solid, O=______

CHAIN OF CUSTODY RECORD

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Bldg. 2
Hudson, MA 01749
Tel: 888-228-3334
Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification	Grab or Composite	# of Containers & Type	Preservation Code P	Matrix Code M	PCB's	VOCs by 8260	SVOCs by 8270
1/5/05	AM	MW-1	G	1,G	NP	GW	✓		✓ per Jim Mich
		MW-5	G	1,G	NP	GW	✓		✓
		MW-6	G	1,G	NP	GW	✓		✓
		MW-7	G	2,G 1V	NP H	GW	✓	✓	✓
		MW-8	G	1,G	NP	GW	✓		✓ per Jim Mich

Client Information

Company Name: Lincoln Environmental
Address: 333 Washington Highway
City / State / Zip: Smithfield, RI 02917
Telephone: 232-3353 x 133 Fax: 232-1130
Contact Person: Stephen Gautie

Project Information

Project Name: Truck-Away Landfill
P.O. Number: R22840 Project Number: R22840
Report To: Stephen Gautie Phone: Fax:
Sampled by: Stephen Gautie
Quote No: Email address:

Relinquished By	Date	Time	Received By	Date	Time
Stephen Gautie	1/5/05	1:15PM		1.5.05	1600
	1.5.05	1640	LR Ray	1/5/05	1640

Turn Around Time

- ✓ Normal | EMAIL Report
- 5 Business days. Possible surcharge
- Rush _____ (business days)

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3 MCP Data Enhancement QC Package? Yes No

Lab Use Only

- ✓ Sample Pick Up Only
- RIAL sampled; attach field hours
- ✓ Shipped on ice

Workorder No: 0501-0022

Container Types: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile

Preservation Codes: NP=None, N=HNO_3, H=HCl, S=H_2SO_4, SH=NaOH, SB=$NaHSO_4$, M=MeOH, T=$Na_2S_2O_3$, Z=ZnOAc, I=Ice

Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, Sl=Sludge, A=Air, B=Bulk/Solid, O=_____

Site Investigation Report
Former Truk-Away Landfill
Warwick Industrial Drive
Warwick, Rhode Island

Prepared for:
Rhode Island Department of Administration
One Capitol Hill
Providence, Rhode Island 02908

Prepared by:

EA Engineering, Science, and Technology, Inc.
2350 Post Road
Warwick, Rhode Island 02886

September 2008
EA Project No. 62220.01

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LIST OF ACRONYMS

CDM	Camp, Dresser, and McKee, Inc.
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
EA	EA Engineering, Science, and Technology, Inc.
ELUR	Environmental Land Usage Restriction
EPA	(U.S.) Environmental Protection Agency
LEL	Lower Explosive Limit
LNAPL	Light non-aqueous phase liquid
PCB	Polychlorinated biphenyls
RIDEM	Rhode Island Department of Environmental Management
RIDOT	Rhode Island Department of Transportation
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

1. INTRODUCTION AND BACKGROUND

On behalf of the Rhode Island Department of Administration, EA Engineering, Science, and Technology, Inc. (EA) is submitting this Site Investigation Report in accordance with the Rhode Island Department of Environmental Management (RIDEM) *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (*Remediation Regulations*), March 1993, as amended August 1996 and February 2004. This report describes the investigation and sampling activities conducted to support the remediation and closure of the Former Truk-Away Landfill (the Site), Warwick Industrial Drive, Warwick, Rhode Island, under the RIDEM Voluntary Landfill Closure Program. The Site location is depicted on Figure 1.

2. SITE DESCRIPTION AND PREVIOUS ENVIRONMENTAL INVESTIGATIONS

The Former Truk-Away Landfill, located at the eastern end of Warwick Industrial Drive, is currently undeveloped, vegetated, and secured with a chain-link fence, although evidence of trespassing was visible during this investigation. Figure 1 is a Site Locus Map depicting the location of the former landfill. The Site is abutted to the west by industrial use, to the north by a runway for T.F. Green Airport, to the north and east by wetlands, including Buckeye Brook, and to the south by a single-family residential development.

The entire property has an area of 52 acres, 34 of which were used for waste disposal. The remaining 16 acres are freshwater wetlands associated with Buckeye Brook. According to the U.S. Environmental Protection Agency, oily wastes were disposed of in the western portion of the landfill, medical wastes in the west and southeast portions, fly ash in the eastern portion, and mercury film packs to the southern portion. Refuse visible at ground level generally includes paper and glass, with larger debris such as metal pieces in the northwestern portion of the Site.

The depth to groundwater at the Site ranges from 3 to 17 ft below ground surface (bgs), and the flow direction is to the east. There are no public wells within 4 radial miles of the Site. According to the City of Warwick Water Department, the nearest private drinking water wells are located greater than 2 miles from the Site. Based on the locations of the nearest drinking water supply wells, no impacts to drinking water sources are known or suspected. In previous investigations, groundwater was found to flow radially from the center of the landfill towards wetlands to the north, east, and south.

The Site began operation as a privately-owned and operated landfill in 1970, under the name Warwick Sanitary Landfill. The company changed its name to Truk-Away of Rhode Island, Inc. in 1976. Truk-Away was closed in 1977 by the Rhode Island Department of Transportation (RIDOT). RIDOT assumed ownership of the property in 1977.

In 1982, Ecology and Environment, Inc. conducted a Preliminary Assessment (PA) of the Landfill property. During the PA, vapor sampling, which detected tetrachloroethylene and toluene, was conducted along leachate seeps. In response to public complaints, RIDEM collected samples from a pond bordering the Landfill. Analytical results indicated the presence of polychlorinated biphenyls (PCBs) in surface water and three volatile organic compounds (VOCs) in sediment. In 1990, there were reports that the Site continued to be used for illegal dumping of solid waste; there was anecdotal evidence that this dumping may have continued through 1992. The former Truk-Away Landfill is listed on the Comprehensive Environmental Response, Compensation, and Liability, Information System (CERCLIS) under the ID number RID987493822 and has not been officially closed.

In 1993, Camp, Dresser, and McKee, Inc. (CDM) conducted sediment and soil sampling, which indicated the presence of VOCs, semivolatile organic compounds (SVOCs), PCBs, and metals. In 2000, CDM further investigated the Site to assess its suitability for redevelopment. In October 2000, 22 test pits were advanced around the perimeter of the Site to determine the lateral extent of landfill material. Material including plastic, glass, wood, rubber, cloth, and brick were

noted in these test pits. It was found that landfill material extends beyond the southern and western Site boundaries. Waste material was noted at a maximum thickness of 40 ft during the follow-up interior Site soil boring installation at MW-3, located in the central portion of the Site. No waste was observed within MW-7 located adjacent to the wetland area in the northwest portion of the Site. Soils below the waste layer (70-72 ft bgs) at MW-3 exhibited no SVOCs, PCBs, or pesticides above the laboratory detection limits, and exhibited trace levels VOCs, primarily those related to petroleum constituents. All compounds were present below the applicable RIDEM GB Leachability Criteria. Arsenic was detected at MW-7 (10-12 ft bgs), located in the northwestern corner of the Site, and MW-1 (20-22 ft bgs), located in the western portion of the Site near Warwick Industrial Drive, above the RIDEM Industrial/Commercial Direct Exposure Criteria.

Six groundwater monitoring wells were installed during the November 2001 soil boring advancement. During the subsequent sampling activities, approximately 2 ft of light non-aqueous phase liquid (LNAPL) was observed on MW-3, and less than 0.25 in. of LNAPL was observed on MW-5, located on the eastern extent of the Site. A strong landfill gas odor was reported at MW-1. Toluene and ethylbenzene, all petroleum-related VOCs, were detected above the RIDEM GB Groundwater Objectives at MW-3, and ethylbenzene was also detected above the RIDEM GB Groundwater Objectives at MW-8, located on the northern edge of the Site to the north of MW-3. No PCBs, SVOCs, pesticides, or other VOCs were detected above the RIDEM standards.

Also, as part of the CDM investigation in 2000, soil vapor probes were installed around the landfill perimeter and on the top of the landfill. Landfill gas, particularly elevated levels of methane, were noted in 8 out of the 16 probe locations.

In a letter to RIDEM dated 17 February 2005, Lincoln Environmental, Inc. described a groundwater sampling event conducted in December 2004. During this event, 1.08 ft of LNAPL was observed on MW-3, and no evidence of the previously observed LNAPL was measured on MW-5. Groundwater samples were collected from each of the six existing monitoring wells for analysis of PCBs, VOCs, and SVOCs. No PCBs were detected within groundwater, and concentrations of VOCs and SVOCs were below the applicable RIDEM criteria. In addition to groundwater samples, a sample of the LNAPL from MW-3 was also collected. It was shown through petroleum fingerprinting to be a mix of gasoline and motor oil. Results also indicated the presence of two PCB Archlors (1016 and 1260) at 68 and 48 parts per million (ppm), respectively.

3. FIELD ACTIVITIES

In order to determine the current status of the landfill, as well as estimate the required steps to bring the Site into compliance with RIDEM standards, EA conducted a site investigation at the former landfill in accordance with Section 7.0 of the RIDEM *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (*Remediation Regulations*), March 1993, as amended August 1996 and February 2004 and two approved Site Investigation Work Plan dated 5 February and 8 March 2008. EA also conducted a soil gas survey to determine whether the landfill is causing any air issues. Investigation locations were chosen to determine the extent of free-product petroleum-based material in the vicinity of MW-3.

3.1 SOIL BORING INSTALLATION

On 4 March 2008, five soil borings were installed in the vicinity of MW-3 using a Geoprobe. During drilling activities, groundwater was generally encountered within 3 ft of ground surface, presumably due to slower infiltration rates through debris following snow melting. Therefore, the recovery of soils and waste from increasing depths was difficult because wet soil/debris does not allow for a hole to be kept open following soil removal. Boring logs are included as Appendix A.

Several attempts were made to advance a soil boring adjacent to MW-3 to determine a potential source of the contamination previously noted, and to note the extent of petroleum within the unsaturated zone. Refusal was encountered at approximately 14 to 15 ft bgs during each of four attempts. Evidence of minor petroleum impacts, such as a slight sheen on groundwater within the examined soils and a slight odor, were noted at varying depths within the observed waste material (i.e., mixed wood, plastic, glass, metal, and paper). No elevated headspace readings were noted. During the fifth attempt to install a boring to the depth of the screen at MW-3 (i.e., 24 ft bgs), the Geoprobe was able to advance beyond the previous refusal. At a level of approximately 23 to 24 ft bgs, during the removal of the drilling casing, explosive conditions in the form of landfill gas release was encountered. Drilling was suspended due to safety concerns by EA and the Geoprobe contractor. However, a monitoring well, MW-EA-01, was installed in this location following stabilization. This monitoring well was screened only 5 ft (i.e., from 17-23 ft bgs), due to the inability to remove the rest of the steel casing. MW-EA-01 was constructed with 15 ft of solid polyvinyl chloride (PVC) riser and ten feet of 0.010 screened PVC at the bottom of the well. The annulus of bore hole was filled with No. 1 filter sand to 2 ft above the screened interval and a bentonite seal was placed above the sand pack. Native soils and fill were used to fill the remainder of the annulus.

On 4 March 2008, four additional soil borings were installed in the general eastern direction relative to MW-3 in an attempt to delineate any free-product petroleum. Waste material was observed in all borings within 2 to 5 ft of the ground surface. This material consisted of a variety of metal, paper, wood, and plastic and also included discrete layers of apparent ash material. No evidence of significant petroleum contamination was noted during drilling and no headspace readings above 0.0 ppm were noted.

On 29 May 2008, EA installed a second groundwater monitoring well (MW-EA-02) downgradient of the previously encountered pressurized landfill gas at MW-EA-01. MW-EA-02 was installed to a total depth of 25 ft bgs, and was constructed with 15 ft of solid PVC riser and ten feet of 0.010 screened PVC at the bottom of the well. The annulus of bore hole was filled with No. 1 filter sand to two feet above the screened interval and a bentonite seal was placed above the sand pack. Native soils and fill were used to fill the remainder of the annulus.

3.2 SOIL GAS SURVEY

EA retained a Geoprobe contractor to install 1-in. soil vapor sampling points throughout the Site. On 29 May 2008, a total of nine soil vapor points were installed in the vicinity of the previously encountered pocket of landfill gas. Approximate locations are depicted on Figure 2. At each location, the 1-in. PVC point was installed to a depth of 6 ft. bgs. The bottom 1 ft of this PVC was screened with 0.010-in. slotted screen, and the remainder of the point was solid PVC riser. Polyethylene tubing was installed through a drilled hole in the top of the well to allow for subsequent monitoring with field equipment. Following the installation of each PVC point, the annular space was filled with No. 1 sand, a bentonite seal was installed above the screened portion, and the point was capped. Prior to recording soil gas concentrations, each point was purged for at least 2 minutes to remove residual vapor from previous points or ambient air in the PVC. Concentrations of VOCs were measured using a photo-ionization detector (PID), and concentrations of oxygen, methane, carbon dioxide, and hydrogen sulfide were measured using a portable landfill gas meter. Results are summarized in Table 1 below.

TABLE 1 SOIL GAS SCREENING RESULTS – 29 MAY 2008

SVE Point ID	% Methane (CH_4)	% Carbon Dioxide (CO_2)	% Oxygen (O_2)	VOCs (ppm)
SV-01	71.1	36.0	0.2	1.7
SV-02	71.3	35.2	0.5	2.0
SV-03	41.7	16.6	8.2	0.45
SV-04	34.8	14.7	10.5	1.3
SV-05	62.3	30.6	3.1	2.5
SV-06	41.2	8.2	18.6	1.5
SV-07	0.4	0.1	21.7	3.7
SV-08	59.2	28.7	04.6	1.7
SV-09	37.9	16.4	9.9	1.5
Note: The Lower Explosive Limit (LEL) for methane is 5% methane.				

Results of this soil gas survey indicate that the levels of soil gas present at the former landfill exceed the Lower Explosive Limit (LEL) for methane at all but one location in the vicinity of MW-3.

3.3 GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING

On 4 June 2008, EA performed one round of groundwater sampling at all Site wells. The wells were sampled using a peristaltic pump and dedicated polyethylene tubing in accordance with the Environmental Protection Agency's (EPA) Low-Flow Procedure. Data collected from each well

immediately prior to sampling are summarized in Table 2 below, and the complete groundwater monitoring data is included as Appendix B.

TABLE 2 GROUNDWATER MONITORING DATA – 5 JUNE 2008

	MW-EA1	MW-EA2	MW-1	MW-5	MW-6	MW-7	MW-8
Time	9:45	9:32	12:15	14:55	14:37	15:50	12:13
Water Level (ft bgs)	17.33	22.05	16.34	14.13	21.15	4.57	20.13
Temperature (°C)	12.73	12.61	10.93	12.34	14.82	12.09	12.97
pH	6.15	6.12	6.04	6.35	6.96	6.62	6.21
Conductivity (mS/cm)	1151	1098	695	1191	4660	748	1151
Oxidation/Reduction Potential (mV)	-101.9	-114.6	-92.1	-111.9	-162.2	-138.9	-99.7
Dissolved Oxygen (mg/L)	0.94	0.32	16.42	4.99	0.19	0.18	0.25
Turbidity (NTU)	3.76	7.6	8.67	0.49	3.8	4.47	9.0
Volume Purged (gallons)	2.5	1.4	1.25	1.25	1.5	1.0	1.2

Note: mS/cm = Milisiemens per centimeter.
mV = Milivolts.
NTU = Normal Turbidity Units.

As specified in the Site Investigation Work Plan, prepared by EA and approved by the RIDEM, all samples were placed in a cooler with ice and transported to a Rhode Island Certified Laboratory for analysis of VOCs via EPA method 8260. Analytical results indicate compliance with all RIDEM GB Groundwater Objectives. Concentrations of detected analytes are summarized in Table 3 below. Certificates of Analysis are included as Appendix C.

TABLE 3 GROUNDWATER ANALYTICAL RESULTS – 5 JUNE 2008

Analyte Detected	MW-EA1	MW-EA2	MW-1	MW-5	MW-6	MW-7	MW-8	RIDEM GB-LC
1,1,1-Trichloroethane	0.0243	ND	ND	ND	ND	ND	ND	3.1
1,1-Dichloroethane	0.128	0.0019	0.0112	ND	ND	ND	ND	--
1,1-Dichloroethene	ND	ND	0.0012	ND	ND	ND	ND	0.007
1,2,4-Trichlorobenzene	ND	ND	0.0010	ND	ND	ND	ND	--
1,2,4-Trimethylbenzene	0.684	0.0297	0.0164	0.0466	0.0428	ND	0.0395	--
1,2-Dichlorobenzene	0.0014	ND	0.0331	0.0017	ND	ND	0.0015	--
1,2-Dichloroethane	0.0019	0.0013	ND	ND	ND	ND	ND	0.11
1,3,5-Trimethylbenzene	0.175	0.0081	0.0042	0.0101	0.0011	ND	0.0088	--
1,3-Dichlorobenzene	ND	ND	0.0043	ND	ND	ND	ND	--
1,4-Dichlorobenzene	0.0139	0.0061	0.0212	0.0136	0.0098	ND	0.0076	--
1,4-Dioxane Screen	ND	ND	ND	1.39	6.72	ND	ND	--
4-Isopropyltoluene	0.0100	ND	0.0011	ND	ND	ND	0.0016	--
Benzene	0.0276	0.0376	0.0154	0.0130	0.0086	0.0027	0.0198	0.14
Chlorobenzene	0.0276	0.0384	0.196	0.0610	0.0239	ND	0.0308	3.2
Chloroethane	4.89	1.76	1.38	0.0241	0.0295	0.0091	0.252	--
cis-1,2-Dichloroethene	0.0029	0.0011	0.0402	0.0012	ND	ND	ND	2.4
Diethyl Ether	0.0131	0.0117	0.0333	0.0070	0.0387	0.0060	0.0048	--
Ethylbenzene	0.0665	0.0236	0.0133	0.0023	ND	ND	0.117	1.6
Isopropylbenzene	0.0455	0.0036	0.0048	0.0068	0.0042	ND	0.0089	--
Methylene Chloride	0.0069	0.0046	ND	ND	ND	ND	ND	--
Naphthalene	0.143	0.0216	0.0231	0.0715	0.0331	ND	0.0940	--
n-Propylbenzene	0.0641	0.0034	0.0033	0.0061	0.0047	ND	0.0065	--
Styrene	0.0020	ND	ND	ND	ND	ND	ND	2.2
Tetrahydrofuran	0.0149	0.0052	0.0065	0.0660	0.802	0.0102	0.0107	--
Toluene	1.25	0.0126	0.0022	0.0018	ND	ND	0.0040	1.7
trans-1,2-Dichloroethene	0.0014	ND	ND	ND	ND	ND	ND	2.8
Trichloroethene	0.0011	ND	0.0139	ND	ND	ND	ND	0.54
Vinyl Chloride	0.0016	ND	0.0130	ND	ND	ND	ND	--
Xylenes (Total)	0.196	0.243	0.438	0.151	0.0275	ND	1.46	--

Note: All results reported in mg/L.
ND = Not detected above the laboratory Method Detection Limit.
-- = No RIDEM GB Groundwater Objective established for this analyte.
RIDEM GB-LC: GB Leachability Criteria as defined in Section 8.02 of RIDEM Remediation Regulations.
Bold indicates an exceedances of the applicable RIDEM standards.

In addition to the groundwater sampling, one sample of free product was collected from MW-3 through the use of a polyethylene bailer. This sample was submitted for analysis of VOC, pesticides via EPA method 8081, PCB via EPA method 8082, and SVOCs via EPA method 8270. Concentrations of detected analytes are summarized in Table 4 below. Certificates of Analysis are included as Appendix D.

TABLE 4 FREE PRODUCT ANALYTICAL RESULTS – 5 JUNE 2008

Analyte Detected	MW-3 (Free Product)
Volatile Organic Compounds	
1,1,1-Trichloroethane	38.5
1,1-Dichloroethane	20.0
1,2,4-Trimethylbenzene	4520
1,3,5-Trimethylbenzene	1420
4-Isopropyltoluene	354
Chloroethane	110
Ethylbenzene	12,700
Isopropylbenzene	334
Naphthalene	942
n-Propylbenzene	660
sec-Butylbenzene	470
Toluene	1130
Xylenes (Total)	54,300
Pesticides	
4,4'-DDD	1.24
alpha-Chlordane	1.28
beta-BHC	0.900
delta-BHC	0.716
gamma-BHC (Lindane)	0.531
gamma-Chlordane	3.11
Heptachlor Epoxide	0.888
Hexachlorobenzene	2.50
Polychlorinated Biphenyls	
Aroclor 1260	25.8
Semi-Volatile Organic Compounds	
bis(2-Ethylhexyl)phthalate	2530
Naphthalene	778

Note: All results reported in mg/L.
ND = Not detected above the laboratory Method Detection Limit.

4. REMEDIAL ALTERNATIVES

Based upon the data collected during this investigation and those previously conducted, it has been determined that remediation is required to bring the former landfill into compliance with the applicable regulations. There are two primary areas of concern at the Site: LNAPL within MW-3, and issues from waste and soil contamination. Three remedial alternatives are presented below for each area of concern, with a recommendation made for the one that is considered to be most practical.

4.1 LIGHT NON-AQUEOUS PHASE LIQUID

4.1.1 LNAPL Remedial Alternative No. 1 – No Action

This remedial alternative involves allowing the LNAPL noted on MW-3 to naturally attenuate using no active remediation. However, as LNAPL exceeds the Upper Concentration Limit for petroleum, this alternative would not address this contamination in a proactive manner. Data indicates that the LNAPL may be bound by buried debris and therefore may not be affected by natural attenuation processes. Therefore, this remedial alternative is not recommended.

4.1.2 LNAPL Remedial Alternative No. 2 – Active Product Recovery System

This remedial alternative involves the construction of a product recovery system to remove the LNAPL from MW-3 and isolate it for off-site disposal. The system would include a floating skimmer to collect the LNAPL from the well. The LNAPL would then be pumped to an above ground storage vessel. However, in a remote area like that of the Site, it would be difficult to monitor the system for potential overflows of malfunctions. In addition, based on the nearby residents and evidence of trespassing on the Site despite fencing, any constructed system may be subject to vandalizing or may serve as a potential source for injury.

4.1.3 LNAPL Remedial Alternative No. 3 – Combination Active/Passive Recovery System

In this preferred remedial alternative, LNAPL would be addressed using a combination of regular hand-bailing and containment of the product with passive recovery features remaining in MW-3 between bailing events. All LNAPL collected will be stored temporarily in drums pending off-site disposal. Given the suspension of landfilling activities and, therefore, no new source of contamination, it is expected that the volume of LNAPL will decrease over time. As MW-3 is located in the central and topographically highest portion of the Site, and no evidence of LNAPL was noted in downgradient wells during the recent sampling event, this remedial alternative is preferred as an effective but low-impact method of addressing the LNAPL at MW-3.

4.2 WASTE AND SOIL CONTAMINATION

4.2.1 Waste and Soil Contamination Remedial Alternative No. 1 – No Action

In this remedial alternative, Site conditions would not be changed. However, this alternative is not recommended due to protruding debris along the perimeter of the former landfill, particularly in relation to the wetland areas, and insufficient cap material present at this time.

4.2.2 Waste and Soil Contamination Remedial Alternative No. 2 – Removal and Off-Site Disposal

One alternative which prevents future direct exposure issues or migration risks from remaining waste and impacted soil at the Site is to remove the solid waste associated with former landfill operations and transport the waste to a licensed disposal facility. The source of this contamination would be removed from the property, thereby eliminating the risk of impacts residents, wetlands, or future developments. However, this remedial alternative is not recommended. First, due to the size of the Site, this is an impractical solution. In addition, opening the landfill during excavation could create exposure and migration issues for nearby residents and the adjacent runways. Restoring the property to pre-waste disposal condition will be costly and time-consuming and will ultimately not positively impact environmental quality or address the needs of the neighborhood.

4.2.3 Waste and Soil Contamination Remedial Alternative No. 3 – Engineered Cap and Environmental Land Usage Restriction

The third and preferred remedial alternative involves the construction of an engineered cap at the Site. Prior to cap construction, surficial debris removal will be conducted, particularly along areas adjacent to the wetland areas around the perimeter of the Site, and at the top of the former landfill, to address the exposed miscellaneous waste. Clearing, grubbing, and rough grading will also be required to establish a suitable base for construction. An engineered cap will then be constructed throughout the Site. This cap will act as a further barrier against human exposure to contaminated soils and fill material. This engineered cap will likely consist of 2 ft of certified clean fill material or equivalent. The top of the cap will consist of topsoil to support vegetation. Vegetation with an acceptable root penetration will improve the value of the former landfill as a habitat and prevent soil erosion in the future. Regular inspections of this engineered cap will be required to ensure its effectiveness.

An Environmental Land Usage Restriction (ELUR) documenting maintenance, and annual inspections of the engineered cap will be recorded in the land evidence records for the property following completion of the remedial activities. The ELUR will include requirements for annual cap inspections and reports to RIDEM, as well as a soil management plan to prescribe measures to be taken in the event of future excavation activities at the Site.

EA recommends the implementation of this remedial alternative to bring the former Truk-Away Landfill into compliance with the RIDEM Remediation Regulations. This remedial alternative will isolate the exposed waste material from direct exposure, and prevent potential migration onto residential properties or into Site wetlands in the future. Upon RIDEM concurrence with this remedial alternative, a Remedial Action Work Plan containing a detailed design to complete the final closure of the former Truk-Away Landfill will be submitted.

5. CERTIFICATIONS

The undersigned certify that this Site Investigation Report is a complete and accurate representation of the activities that occurred at the Site and contains all known facts surrounding the Site to the best of their knowledge.

Mark Speer, P.E. — Date 9/10/08
EA Engineering, Science, and Technology, Inc.
Senior Engineer

Thomas Wright — Date 9/17/08
RI Department of Administration
Site Owner

Appendix A

Soil Boring Logs

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Job. No.	Client:	Location:
62220.01	RI Dept of Administration	**Truk-Awak Landfill Warwick, RI**

Drilling Method: Geoprobe 6600

Boring No. **SB-1**

Sampling Method: 5-ft, 2-in diameter acetate sleeves

Sheet 1 of 1

Drilling Water Level		
Date	03/04/08	
Water Level (ft bgs)	1.5	

Surface Conditions: sparse grass

Start Drilling Date/Times	Finish
03/04/08 1140	03/04/08 1300

Sample Type	Feet Driven/Ft Recvrd	Dpth Csg.	Samp # / depth (ft)	HS FID (ppm) Above bk.	USCS Class	Ft bgs	SOIL DESCRIPTION
SS	5/2.4	NA	NS	0.00		0	0-0.6' Dark brown F-C SAND, little f gravel, trace silt, trace organics
							0.6-2.4' Brown to dark brown F-M SAND, little silt, little c sand, trace gravel, trace ash
						▼ 1	
						2	
						3	
						4	
SS	5/2.0	NA	NS	0.00		5	5-6.6' Dark brown M-C SAND, little f gravel, trace f sand, trace debris
						6	
							6.6-7.0' Dark brown F SAND and SILT with commingled debris (wood, metal, plastic)
						7	
						8	
						9	
SS	4/3.3	NA	NS	0.00		10	10-11.1' Dark brown C SAND (suspected collapse from above)
						11	11.1-11.4' Dark brown F SAND and SILT
							11.4-12.4' Dark brown C SAND, slight sheen
						12	12.4-13.3' Dark brown F SAND and SILT with commingled waste 13-13.3'
						13	
						14	Refusal at 14' (3 attempts)
						15	
						16	
						17	
						18	
						19	

Logged by: Jill Ann Parrett Date: 03/04/08

Drilling Contractor: New England Geotech Driller: Hayes Rembrijas

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Job. No.	Client:	Location:
62220.01	RI Dept of Administration	Truk-Awak Landfill Warwick, RI

Drilling Method: Geoprobe 6600

Boring No. **SB-2**

Sampling Method: 5-ft, 2-in diameter acetate sleeves

Sheet 1 of 1

Drilling Water Level		
Date	03/04/08	
Water Level (ft bgs)	2.5	
Surface Conditions:	sparse grass	

Start	Drilling Date/Times	Finish
03/04/08		03/04/08
1310		1335

Sample Type	Feet Driven/Ft Recvrd	Dpth Csg.	Samp # / depth (ft)	HS FID (ppm) Above bk.	USCS Class	Ft bgs	SOIL DESCRIPTION
SS	5/2.5	NA	NS	0.00		0	0-1.8' Dark brown to brown F-C SAND, little gravel, trace silt
						1	1.8-2.3' Brown F-M SAND, little c sand
						2	2.3-2.5' Dark brown/black F SAND, some m sand, little silt
						3	
						4	
SS	5/1.7	NA	NS	0.00		5	5-5.9' Black F-C SAND (may be collapse from previous interval)
							5.9-6.7' Commingled black F SAND and SILT and waste
						6	
						7	
						8	
						9	
SS	5/1.0	NA	NS	0.00		10	Same as above
						11	
						12	
						13	
						14	
SS	5/0.8	NA	NS	0.0		15	Same as above (white material, organic odor)
						16	
						17	
						18	
						19	

Logged by: Jill Ann Parrett Date: 03/04/08

Drilling Contractor: New England Geotech Driller: Hayes Rembrijas

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Job. No.	Client:	Location:
62220.01	RI Dept of Administration	Truk-Awak Landfill Warwick, RI

Drilling Method: Geoprobe 6600

Boring No. **SB-3**

Sampling Method: 5-ft, 2-in diameter acetate sleeves

Sheet 1 of 1

Drilling Water Level		
Date	03/04/08	
Water Level (ft bgs)	1.5	

Surface Conditions: sparse grass

Start	Drilling Date/Times	Finish
03/04/08		03/04/08
1340		1435

Sample Type	Feet Driven/Ft Recvrd	Dpth Csg.	Samp # / depth (ft)	HS FID (ppm) Above bk.	USCS Class	Ft bgs	SOIL DESCRIPTION
SS	5/2.1	NA	NS	0.00		0	0-1.6' Brown F-C SAND, little gravel, trace silt
						1	1.6-2.0' Black F SAND and SILT, commingled waste
						2	
						3	
						4	
SS	5/0.5	NA	NS	0.00		5	Same as above
						6	
						7	
						8	
						9	
SS	5/0.8	NA	NS	0.00		10	Same as above, very wet
						11	
						12	
						13	
						14	
SS	5/0.9	NA	NS	0.0		15	Same as above
						16	
						17	
						18	
						19	

Logged by: Jill Ann Parrett Date: 03/04/08

Drilling Contractor: New England Geotech Driller: Hayes Rembrijas

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MW-8 Personnel: Ron Mack Start Time: 1130 Finish Time: 1218

Parameter (units)		Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters		0	0.2	0.4	0.5	0.6	0.8	1.0
Time		1138	1143	1148	1153	1158	1203	1208
Temperature	(°C)	14.16	13.06	12.92	12.81	13.24	13.00	13.02
pH		6.25	6.20	6.20	6.21	6.21	6.21	6.21
Conductivity	(ms/cm)	1147	1133	1136	1138	1155	1151	1151
DO	(mg/L)	2.55	0.47	0.32	0.28	0.30	0.27	0.26
Turbidity	(NTUs)	110	16	8.0	6.2	5.5	4.0	3.7
ORP	(mv)	-73.9	-84.1	-89.8	-92.5	-96.2	-96.8	-98.1
Water Level	(ft from TOR)	20.09	20.13	20.13	20.13	20.13	20.13	20.13
Flow Rate	(mL/min.)	--	--	--	--	--	--	--

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters		1.2	3 VOA					
Time		1213	1218					
Temperature	(°C)	12.97	S					
pH		6.21	A					
Conductivity	(ms/cm)	1151	M					
DO	(mg/L)	0.25	P					
Turbidity	(NTUs)	9.0	L					
ORP	(mv)	-99.7	E					
Water Level	(ft from TOR)	20.13	D					
Flow Rate	(mL/min.)	--	--					

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Notes: Very slight sheen observed. Sampled at 1218.

EA Engineering, Science, and Technology, Inc.

LOG OF SOIL BORING

Job. No.	Client:	Location:
62220.01	RI Dept of Administration	**Truk-Awak Landfill Warwick, RI**

Drilling Method: Geoprobe 6600

Boring No. **SB-4**

Sampling Method: 5-ft, 2-in diameter acetate sleeves

Sheet 1 of 1

Drilling Water Level		
Date	03/04/08	
Water Level (ft bgs)	1.5	

Surface Conditions: sparse grass

Start	Drilling Date/Times	Finish
03/04/08		03/04/08
1440		1330

Sample Type	Feet Driven/Ft Recvrd	Dpth Csg.	Samp # / depth (ft)	HS FID (ppm) Above bk.	USCS Class	Ft bgs	SOIL DESCRIPTION
SS	5/2.1	NA	NS	0.00		0	0-1.3' Brown F-C SAND, little gravel, trace silt
						1	1.3-2.1' Brown F-M SAND, little silt
						2	
						3	
						4	
SS	5/1.2	NA	NS	0.00		5	5-5.5' Brown C SAND
							5.5-5.9' Gray/blue VF SAND and SILT
						6	5.9-6.2' Black F SAND and SILT, commingled with waste
						7	
						8	
						9	
SS	5/2.0	NA	NS	0.00		10	10-11.2' Brown/dark brown C SAND
						11	11.2-12.0' Black F SAND and SILT, commingled with waste
						12	
						13	Monitoring well installed (MW-EA-01):
							Screen 13-23' bgs
						14	Sandpack 11-23' bgs
							Bentonite 1.5-11' bgs
						15	
						16	
						17	
						18	
						19	

Logged by: Jill Ann Parrett Date: 03/04/08

Drilling Contractor: New England Geotech Driller: Hayes Rembrijas

Appendix B

Groundwater Monitoring Data

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MWEA-1 Personnel: Paul Theroux Start Time: 0830 Finish Time: 0950

Parameter (units)		Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters		0	0.5	1.25	1.75	2.2	2.5	3 VOA
Time		0920	0925	0930	0935	0940	0945	0950
Temperature	(°C)	13.22	12.75	12.70	12.77	12.75	12.73	S
pH		6.23	6.18	6.17	6.16	6.15	6.15	A
Conductivity	(ms/cm)	1221	1166	1174	1161	1163	1151	M
DO	(mg/L)	1.76	1.28	0.59	0.72	0.94	0.94	P
Turbidity	(NTUs)	--	--	3.87	3.19	4.12	3.76	L
ORP	(mv)	-95	-102.1	-102.7	-102.3	-99.9	-101.9	E
Water Level	(ft from TOR)	17.37	17.33	17.33	17.33	17.31	17.33	D
Flow Rate	(mL/min.)	--	--	--	--	--	--	--

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Notes: Sheen noted on purge water. Sample collected at 0950.

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MW-EA-2 Personnel: Ron Mack Start Time: 0845 Finish Time: 0937

Parameter (units)		Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters		0	0.2	0.4	0.7	1.0	1.2	1.4
Time		0902	0907	0912	0917	0922	0927	0932
Temperature	(°C)	13.27	12.39	12.29	12.18	12.54	12.61	12.61
pH		6.31	6.13	6.11	6.12	6.11	6.11	6.12
Conductivity	(ms/cm)	1136	1108	1098	1094	1098	1100	1098
DO	(mg/L)	1.55	0.42	0.21	0.36	0.34	0.33	0.32
Turbidity	(NTUs)	--	--	280	37	12	8.0	--
ORP	(mv)	-121.8	-116.9	-116.0	-116.6	-116.6	-115.4	-114.6
Water Level	(ft from TOR)	--	22.05	--	--	--	--	--
Flow Rate	(mL/min.)	--	--	--	--	--	--	--

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters		3 VOA						
Time		0937						
Temperature	(°C)	S						
pH		A						
Conductivity	(ms/cm)	M						
DO	(mg/L)	P						
Turbidity	(NTUs)	L						
ORP	(mv)	E						
Water Level	(ft from TOR)	D						
Flow Rate	(mL/min.)	--						

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Notes: Sheen noted on water. Very dark upon initial purge, raised intake and cleared up. MWEA-2 a 1-in PVC well and water level indicator was not working properly. Sampled at 0937.

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MW-1 Personnel: Paul Theroux Start Time: 1140 Finish Time: 1220

Parameter (units)	Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters	0	0.25	0.5	0.75	1.0	1.25	3 VOA
Time	1150	1155	1200	1205	1210	1215	1220
Temperature (°C)	11.40	11.13	10.98	10.94	10.94	10.93	S
pH	6.09	6.06	6.05	6.05	6.05	6.04	A
Conductivity (ms/cm)	725	709	708	705	699	695	M
DO (mg/L)	16.65	13.72	12.35	14.28	16.22	16.42	P
Turbidity (NTUs)	--	--	21.8	17.9	10.78	8.67	L
ORP (mv)	-77.0	-79.7	-81.3	-85.6	-89.7	-92.1	E
Water Level (ft from TOR)	16.31	16.34	16.34	16.34	16.34	16.34	D
Flow Rate (mL/min.)	--	--	--	--	--	--	--

Parameter (units)	Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters							
Time							
Temperature (°C)							
pH							
Conductivity (ms/cm)							
DO (mg/L)							
Turbidity (NTUs)							
ORP (mv)							
Water Level (ft from TOR)							
Flow Rate (mL/min.)							

Parameter (units)	Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters							
Time							
Temperature (°C)							
pH							
Conductivity (ms/cm)							
DO (mg/L)							
Turbidity (NTUs)							
ORP (mv)							
Water Level (ft from TOR)							
Flow Rate (mL/min.)							

Notes: Sampled at 1220.

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MW-5 Personnel: Paul Theroux Start Time: 1415 Finish Time: 1500

Parameter (units)		Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters		0	0.25	0.5	0.75	1.0	1.25	3 VOA
Time		1430	1435	1440	1445	1450	1455	1500
Temperature	(°C)	13.03	12.34	12.29	12.22	12.28	12.34	S
pH		6.33	6.32	6.33	6.34	6.35	6.35	A
Conductivity	(ms/cm)	1054	1063	1092	1149	1182	1191	M
DO	(mg/L)	5.29	2.60	4.64	5.02	5.22	4.99	P
Turbidity	(NTUs)	4.20	2.35	1.93	1.53	1.01	0.49	L
ORP	(mv)	-95.4	-102.7	-106.1	-109.7	-111.4	-111.9	E
Water Level	(ft from TOR)	14.12	14.13	14.13	14.13	14.13	14.13	D
Flow Rate	(mL/min.)	--	--	--	--	--	--	--

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Notes: Sampled at 1500.

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MW-6 Personnel: Ron Mack Start Time: 1400 Finish Time: 1442

Parameter (units)		Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters		0	0.3	0.5	0.8	1.0	1.2	1.5
Time		1407	1412	14.17	1422	1427	1432	1437
Temperature	(°C)	15.52	15.00	14.89	14.80	14.79	14.79	14.82
pH		6.96	6.96	6.96	6.96	6.96	6.96	6.96
Conductivity	(ms/cm)	5004	4782	4720	4700	4675	4666	4660
DO	(mg/L)	2.22	0.43	0.30	0.25	0.21	0.19	0.19
Turbidity	(NTUs)	34	7.4	5.7	5.2	4.3	4.1	3.8
ORP	(mv)	-125.2	-144.7	-150.7	-154.5	-158.3	-160.3	-162.2
Water Level	(ft from TOR)	21.13	21.15	21.15	21.15	21.15	21.15	21.15
Flow Rate	(mL/min.)	--	--	--	--	--	--	--

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters		3 VOA						
Time		1442						
Temperature	(°C)	S						
pH		A						
Conductivity	(ms/cm)	M						
DO	(mg/L)	P						
Turbidity	(NTUs)	L						
ORP	(mv)	E						
Water Level	(ft from TOR)	D						
Flow Rate	(mL/min.)	--						

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Notes: Very slight sheen. Sampled at 1442.

Ground Water Field Sampling Form

Project Name: Truk-Away Project No.: 62220.01 Task: 0002 Date: 6-5-08

Well ID: MW-7 Personnel: Paul Theroux Start Time: 1515 Finish Time: 1600

Parameter (units)		Initial	Volume	Volume	Volume	Volume	Volume	Volume
Liters		0	0.25	0.50	0.75	1.0	3 VOA	
Time		1530	1535	1540	1545	1550	1600	
Temperature	(°C)	15.95	12.36	12.19	12.13	12.09	S	
pH		6.72	6.60	6.60	6.61	6.62	A	
Conductivity	(ms/cm)	878	781	754	751	748	M	
DO	(mg/L)	1.60	0.36	0.25	0.20	0.18	P	
Turbidity	(NTUs)	67	11.9	8.78	5.98	4.47	L	
ORP	(mv)	-125.4	-124.1	-129.9	-136.2	-138.9	E	
Water Level	(ft from TOR)	7.60	4.57	4.57	4.58	4.57	D	
Flow Rate	(mL/min.)	--	--	--	--	--	--	

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Parameter (units)		Volume	Volume	Volume	Volume	Volume	Volume	Volume
Liters								
Time								
Temperature	(°C)							
pH								
Conductivity	(ms/cm)							
DO	(mg/L)							
Turbidity	(NTUs)							
ORP	(mv)							
Water Level	(ft from TOR)							
Flow Rate	(mL/min.)							

Notes: Sampled at 1600.

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-6
Date Sampled: 06/05/08 14:42
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-06
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	06/06/08
Chlorobenzene	**0.0239**	mg/L	0.0010	0.1	1	06/06/08
Chloroethane	**0.0295**	mg/L	0.0020		1	06/06/08
Chloroform	ND	mg/L	0.0010		1	06/06/08
Chloromethane	ND	mg/L	0.0020		1	06/06/08
cis-1,2-Dichloroethene	ND	mg/L	0.0010	0.07	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/06/08
Dibromomethane	ND	mg/L	0.0010		1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/06/08
Diethyl Ether	**0.0387**	mg/L	0.0010		1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/06/08
Ethylbenzene	ND	mg/L	0.0010	0.7	1	06/06/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/06/08
Hexachloroethane	ND	mg/L	0.0010		1	06/06/08
Isopropylbenzene	**0.0042**	mg/L	0.0010		1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/06/08
Methylene Chloride	ND	mg/L	0.0040	0.005	1	06/06/08
Naphthalene	**0.0331**	mg/L	0.0010	0.02	1	06/06/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
n-Propylbenzene	**0.0047**	mg/L	0.0010		1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Styrene	ND	mg/L	0.0010	0.1	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Tetrahydrofuran	**0.802**	mg/L	0.100		20	06/10/08
Toluene	ND	mg/L	0.0010	1	1	06/06/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Trichloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-6
Date Sampled: 06/05/08 14:42
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-06
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	ND	mg/L	0.0010	0.002	1	06/06/08
Xylene O	**0.0016**	mg/L	0.0010	10	1	06/06/08
Xylene P,M	**0.0258**	mg/L	0.0020	10	1	06/06/08
Xylenes (Total)	**0.0275**	mg/L	0.0030	10	1	06/06/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*102 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-5
Date Sampled: 06/05/08 15:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-07
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane	ND	mg/L	0.0010	0.2	1	06/06/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,1-Dichloroethane	ND	mg/L	0.0010		1	06/06/08
1,1-Dichloroethene	ND	mg/L	0.0010	0.007	1	06/06/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	06/06/08
1,2,4-Trimethylbenzene	**0.0466**	mg/L	0.0010		1	06/06/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	06/06/08
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	06/06/08
1,2-Dichlorobenzene	**0.0017**	mg/L	0.0010	0.6	1	06/06/08
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	06/06/08
1,3,5-Trimethylbenzene	**0.0101**	mg/L	0.0010		1	06/06/08
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/06/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene	**0.0136**	mg/L	0.0010	0.075	1	06/06/08
1,4-Dioxane - Screen	**1.39**	mg/L	0.500		1	06/06/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
2-Butanone	ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
2-Hexanone	ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene	ND	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/06/08
Acetone	ND	mg/L	0.0250		1	06/06/08
Benzene	**0.0130**	mg/L	0.0010	0.005	1	06/06/08
Bromobenzene	ND	mg/L	0.0020		1	06/06/08
Bromochloromethane	ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/06/08
Bromoform	ND	mg/L	0.0010		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-5
Date Sampled: 06/05/08 15:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-07
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	06/06/08
Chlorobenzene	**0.0610**	mg/L	0.0010	0.1	1	06/06/08
Chloroethane	**0.0241**	mg/L	0.0020		1	06/06/08
Chloroform	ND	mg/L	0.0010		1	06/06/08
Chloromethane	ND	mg/L	0.0020		1	06/06/08
cis-1,2-Dichloroethene	**0.0012**	mg/L	0.0010	0.07	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/06/08
Dibromomethane	ND	mg/L	0.0010		1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/06/08
Diethyl Ether	**0.0070**	mg/L	0.0010		1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/06/08
Ethylbenzene	**0.0023**	mg/L	0.0010	0.7	1	06/06/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/06/08
Hexachloroethane	ND	mg/L	0.0010		1	06/06/08
Isopropylbenzene	**0.0068**	mg/L	0.0010		1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/06/08
Methylene Chloride	ND	mg/L	0.0040	0.005	1	06/06/08
Naphthalene	**0.0715**	mg/L	0.0010	0.02	1	06/06/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
n-Propylbenzene	**0.0061**	mg/L	0.0010		1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Styrene	ND	mg/L	0.0010	0.1	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Tetrahydrofuran	**0.0660**	mg/L	0.0050		1	06/06/08
Toluene	**0.0018**	mg/L	0.0010	1	1	06/06/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Trichloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-5
Date Sampled: 06/05/08 15:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-07
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	ND	mg/L	0.0010	0.002	1	06/06/08
Xylene O	**0.0020**	mg/L	0.0010	10	1	06/06/08
Xylene P,M	**0.149**	mg/L	0.0020	10	1	06/06/08
Xylenes (Total)	**0.151**	mg/L	0.0030	10	1	06/06/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*103 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-7
Date Sampled: 06/05/08 16:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-08
Sample Matrix: Ground Water
Analyst: RES

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/10/08
1,1,1-Trichloroethane	ND	mg/L	0.0010	0.2	1	06/10/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/10/08
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	06/10/08
1,1-Dichloroethane	ND	mg/L	0.0010		1	06/10/08
1,1-Dichloroethene	ND	mg/L	0.0010	0.007	1	06/10/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/10/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/10/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/10/08
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	06/10/08
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	06/10/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	06/10/08
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	06/10/08
1,2-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/10/08
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	06/10/08
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	06/10/08
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	06/10/08
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/10/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/10/08
1,4-Dichlorobenzene	ND	mg/L	0.0010	0.075	1	06/10/08
1,4-Dioxane - Screen	ND	mg/L	0.500		1	06/10/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/10/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/10/08
2-Butanone	ND	mg/L	0.0250		1	06/10/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/10/08
2-Hexanone	ND	mg/L	0.0100		1	06/10/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/10/08
4-Isopropyltoluene	ND	mg/L	0.0010		1	06/10/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/10/08
Acetone	ND	mg/L	0.0250		1	06/10/08
Benzene	**0.0027**	mg/L	0.0010	0.005	1	06/10/08
Bromobenzene	ND	mg/L	0.0020		1	06/10/08
Bromochloromethane	ND	mg/L	0.0010		1	06/10/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/10/08
Bromoform	ND	mg/L	0.0010		1	06/10/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-7
Date Sampled: 06/05/08 16:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-08
Sample Matrix: Ground Water
Analyst: RES

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/10/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/10/08
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	06/10/08
Chlorobenzene	ND	mg/L	0.0010	0.1	1	06/10/08
Chloroethane	**0.0091**	mg/L	0.0020		1	06/10/08
Chloroform	ND	mg/L	0.0010		1	06/10/08
Chloromethane	ND	mg/L	0.0020		1	06/10/08
cis-1,2-Dichloroethene	ND	mg/L	0.0010	0.07	1	06/10/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/10/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/10/08
Dibromomethane	ND	mg/L	0.0010		1	06/10/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/10/08
Diethyl Ether	**0.0060**	mg/L	0.0010		1	06/10/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/10/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/10/08
Ethylbenzene	ND	mg/L	0.0010	0.7	1	06/10/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/10/08
Hexachloroethane	ND	mg/L	0.0010		1	06/10/08
Isopropylbenzene	ND	mg/L	0.0010		1	06/10/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/10/08
Methylene Chloride	ND	mg/L	0.0040	0.005	1	06/10/08
Naphthalene	ND	mg/L	0.0010	0.02	1	06/10/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/10/08
n-Propylbenzene	ND	mg/L	0.0010		1	06/10/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/10/08
Styrene	ND	mg/L	0.0010	0.1	1	06/10/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/10/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/10/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/10/08
Tetrahydrofuran	**0.0102**	mg/L	0.0050		1	06/10/08
Toluene	ND	mg/L	0.0010	1	1	06/10/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	06/10/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/10/08
Trichloroethene	ND	mg/L	0.0010	0.005	1	06/10/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/10/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/10/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-7
Date Sampled: 06/05/08 16:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-08
Sample Matrix: Ground Water
Analyst: RES

8260B Volatile Organic Compounds

Vinyl Chloride	ND	mg/L	0.0010	0.002	1	06/10/08
Xylene O	ND	mg/L	0.0010	10	1	06/10/08
Xylene P,M	ND	mg/L	0.0020	10	1	06/10/08
Xylenes (Total)	ND	mg/L	0.0030	10	1	06/10/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/10/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*99 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*104 %*		*70-130*
Surrogate: Dibromofluoromethane	*102 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: Trip Blank
Date Sampled: 06/05/08 00:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-09
Sample Matrix: Aqueous
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane	ND	mg/L	0.0010		1	06/06/08
1,1-Dichloroethane	ND	mg/L	0.0010		1	06/06/08
1,1-Dichloroethene	ND	mg/L	0.0010		1	06/06/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trimethylbenzene	ND	mg/L	0.0010		1	06/06/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050		1	06/06/08
1,2-Dibromoethane	ND	mg/L	0.0010		1	06/06/08
1,2-Dichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2-Dichloroethane	ND	mg/L	0.0010		1	06/06/08
1,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,3,5-Trimethylbenzene	ND	mg/L	0.0010		1	06/06/08
1,3-Dichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,4-Dioxane - Screen	ND	mg/L	0.500		1	06/06/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
2-Butanone	ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
2-Hexanone	ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene	ND	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/06/08
Acetone	ND	mg/L	0.0250		1	06/06/08
Benzene	ND	mg/L	0.0010		1	06/06/08
Bromobenzene	ND	mg/L	0.0020		1	06/06/08
Bromochloromethane	ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/06/08
Bromoform	ND	mg/L	0.0010		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: Trip Blank
Date Sampled: 06/05/08 00:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-09
Sample Matrix: Aqueous
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020	1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010	1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	1	06/06/08
Chlorobenzene	ND	mg/L	0.0010	1	06/06/08
Chloroethane	ND	mg/L	0.0020	1	06/06/08
Chloroform	ND	mg/L	0.0010	1	06/06/08
Chloromethane	ND	mg/L	0.0020	1	06/06/08
cis-1,2-Dichloroethene	ND	mg/L	0.0010	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004	1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010	1	06/06/08
Dibromomethane	ND	mg/L	0.0010	1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020	1	06/06/08
Diethyl Ether	ND	mg/L	0.0010	1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010	1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010	1	06/06/08
Ethylbenzene	ND	mg/L	0.0010	1	06/06/08
Hexachlorobutadiene	ND	mg/L	0.0006	1	06/06/08
Hexachloroethane	ND	mg/L	0.0010	1	06/06/08
Isopropylbenzene	ND	mg/L	0.0010	1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	1	06/06/08
Methylene Chloride	ND	mg/L	0.0040	1	06/06/08
Naphthalene	ND	mg/L	0.0010	1	06/06/08
n-Butylbenzene	ND	mg/L	0.0010	1	06/06/08
n-Propylbenzene	ND	mg/L	0.0010	1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010	1	06/06/08
Styrene	ND	mg/L	0.0010	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010	1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010	1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	1	06/06/08
Tetrahydrofuran	ND	mg/L	0.0050	1	06/06/08
Toluene	ND	mg/L	0.0010	1	06/06/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0005	1	06/06/08
Trichloroethene	ND	mg/L	0.0010	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010	1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050	1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: Trip Blank
Date Sampled: 06/05/08 00:00
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-09
Sample Matrix: Aqueous
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	ND	mg/L	0.0010	1	06/06/08
Xylene O	ND	mg/L	0.0010	1	06/06/08
Xylene P,M	ND	mg/L	0.0020	1	06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*103 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							
2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							
Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	ND	0.0500	mg/kg wet							
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Dibromochloromethane	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-Isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							
Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							
Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*2.25*		mg/kg wet	*2.500*		*90*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*2.45*		mg/kg wet	*2.500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*2.45*		mg/kg wet	*2.500*		*98*	*70-130*			
Surrogate: Toluene-d8	*2.41*		mg/kg wet	*2.500*		*96*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	2.16	0.100	mg/kg wet	2.500		87	70-130			
1,1,1-Trichloroethane	2.31	0.0500	mg/kg wet	2.500		92	70-130			
1,1,2,2-Tetrachloroethane	2.45	0.0500	mg/kg wet	2.500		98	70-130			
1,1,2-Trichloroethane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
1,1-Dichloroethane	2.48	0.0500	mg/kg wet	2.500		99	70-130			
1,1-Dichloroethene	2.58	0.0500	mg/kg wet	2.500		103	70-130			
1,1-Dichloropropene	2.45	0.0500	mg/kg wet	2.500		98	70-130			
1,2,3-Trichlorobenzene	3.05	0.0500	mg/kg wet	2.500		122	70-130			
1,2,3-Trichloropropane	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,2,4-Trichlorobenzene	2.70	0.0500	mg/kg wet	2.500		108	70-130			
1,2,4-Trimethylbenzene	2.30	0.0500	mg/kg wet	2.500		92	70-130			
1,2-Dibromo-3-Chloropropane	2.45	0.300	mg/kg wet	2.500		98	70-130			
1,2-Dibromoethane	2.34	0.0500	mg/kg wet	2.500		94	70-130			
1,2-Dichlorobenzene	2.19	0.0500	mg/kg wet	2.500		87	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
1,2-Dichloroethane	2.37	0.0500	mg/kg wet	2.500		95	70-130			
1,2-Dichloropropane	2.48	0.0500	mg/kg wet	2.500		99	70-130			
1,3,5-Trimethylbenzene	2.21	0.0500	mg/kg wet	2.500		88	70-130			
1,3-Dichlorobenzene	2.19	0.0500	mg/kg wet	2.500		87	70-130			
1,3-Dichloropropane	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,4-Dichlorobenzene	2.14	0.0500	mg/kg wet	2.500		86	70-130			
1,4-Dioxane - Screen	72.6	5.00	mg/kg wet	50.00		145	44-241			
1-Chlorohexane	2.45	0.0500	mg/kg wet	2.500		98	70-130			
2,2-Dichloropropane	2.88	0.100	mg/kg wet	2.500		115	70-130			
2-Butanone	15.7	1.25	mg/kg wet	12.50		126	70-130			
2-Chlorotoluene	2.22	0.0500	mg/kg wet	2.500		89	70-130			
2-Hexanone	14.3	0.500	mg/kg wet	12.50		115	70-130			
4-Chlorotoluene	2.21	0.0500	mg/kg wet	2.500		88	70-130			
4-Isopropyltoluene	2.13	0.0500	mg/kg wet	2.500		85	70-130			
4-Methyl-2-Pentanone	12.6	0.500	mg/kg wet	12.50		101	70-130			
Acetone	16.1	1.25	mg/kg wet	12.50		128	70-130			
Benzene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
Bromobenzene	2.24	0.0500	mg/kg wet	2.500		89	70-130			
Bromochloromethane	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Bromodichloromethane	2.63	0.0500	mg/kg wet	2.500		105	70-130			
Bromoform	2.32	0.0500	mg/kg wet	2.500		93	70-130			
Bromomethane	2.88	0.100	mg/kg wet	2.500		115	70-130			
Carbon Disulfide	2.93	0.0500	mg/kg wet	2.500		117	70-130			
Carbon Tetrachloride	2.34	0.0500	mg/kg wet	2.500		93	70-130			
Chlorobenzene	2.28	0.0500	mg/kg wet	2.500		91	70-130			
Chloroethane	3.15	0.100	mg/kg wet	2.500		126	70-130			
Chloroform	2.40	0.0500	mg/kg wet	2.500		96	70-130			
Chloromethane	2.53	0.100	mg/kg wet	2.500		101	70-130			
cis-1,2-Dichloroethene	2.66	0.0500	mg/kg wet	2.500		106	70-130			
cis-1,3-Dichloropropene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
Dibromochloromethane	2.30	0.0500	mg/kg wet	2.500		92	70-130			
Dibromomethane	2.41	0.0500	mg/kg wet	2.500		96	70-130			
Dichlorodifluoromethane	2.18	0.0500	mg/kg wet	2.500		87	70-130			
Diethyl Ether	2.92	0.0500	mg/kg wet	2.500		117	70-130			
Di-isopropyl ether	2.53	0.0500	mg/kg wet	2.500		101	70-130			
Ethyl tertiary-butyl ether	2.46	0.0500	mg/kg wet	2.500		99	70-130			
Ethylbenzene	2.31	0.0500	mg/kg wet	2.500		92	70-130			
Hexachlorobutadiene	2.60	0.0500	mg/kg wet	2.500		104	70-130			
Isopropylbenzene	2.01	0.0500	mg/kg wet	2.500		81	70-130			
Methyl tert-Butyl Ether	2.61	0.0500	mg/kg wet	2.500		104	70-130			
Methylene Chloride	2.69	0.250	mg/kg wet	2.500		108	70-130			
Naphthalene	2.87	0.0500	mg/kg wet	2.500		115	70-130			
n-Butylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
n-Propylbenzene	2.27	0.0500	mg/kg wet	2.500		91	70-130			
sec-Butylbenzene	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Styrene	2.34	0.0500	mg/kg wet	2.500		93	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
tert-Butylbenzene	2.21	0.0500	mg/kg wet	2.500		89	70-130			
Tertiary-amyl methyl ether	2.56	0.0500	mg/kg wet	2.500		102	70-130			
Tetrachloroethene	2.30	0.0500	mg/kg wet	2.500		92	70-130			
Tetrahydrofuran	2.69	0.500	mg/kg wet	2.500		108	70-130			
Toluene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
trans-1,2-Dichloroethene	2.63	0.0500	mg/kg wet	2.500		105	70-130			
trans-1,3-Dichloropropene	2.24	0.0500	mg/kg wet	2.500		90	70-130			
Trichloroethene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
Vinyl Acetate	2.38	0.250	mg/kg wet	2.500		95	70-130			
Vinyl Chloride	3.16	0.0500	mg/kg wet	2.500		126	70-130			
Xylene O	2.37	0.0500	mg/kg wet	2.500		95	70-130			
Xylene P,M	4.73	0.100	mg/kg wet	5.000		95	70-130			
Surrogate: 1,2-Dichloroethane-d4	*2.36*		mg/kg wet	*2.500*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*2.43*		mg/kg wet	*2.500*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*2.39*		mg/kg wet	*2.500*		*95*	*70-130*			
Surrogate: Toluene-d8	*2.40*		mg/kg wet	*2.500*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	2.26	0.100	mg/kg wet	2.500		90	70-130	4	20	
1,1,1-Trichloroethane	2.43	0.0500	mg/kg wet	2.500		97	70-130	5	20	
1,1,2,2-Tetrachloroethane	2.54	0.0500	mg/kg wet	2.500		102	70-130	4	20	
1,1,2-Trichloroethane	2.53	0.0500	mg/kg wet	2.500		101	70-130	5	20	
1,1-Dichloroethane	2.60	0.0500	mg/kg wet	2.500		104	70-130	5	20	
1,1-Dichloroethene	2.74	0.0500	mg/kg wet	2.500		110	70-130	6	20	
1,1-Dichloropropene	2.57	0.0500	mg/kg wet	2.500		103	70-130	5	20	
1,2,3-Trichlorobenzene	3.19	0.0500	mg/kg wet	2.500		128	70-130	4	20	
1,2,3-Trichloropropane	2.47	0.0500	mg/kg wet	2.500		99	70-130	4	20	
1,2,4-Trichlorobenzene	2.80	0.0500	mg/kg wet	2.500		112	70-130	4	20	
1,2,4-Trimethylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	3	20	
1,2-Dibromo-3-Chloropropane	2.58	0.300	mg/kg wet	2.500		103	70-130	5	20	
1,2-Dibromoethane	2.48	0.0500	mg/kg wet	2.500		99	70-130	6	20	
1,2-Dichlorobenzene	2.26	0.0500	mg/kg wet	2.500		91	70-130	3	20	
1,2-Dichloroethane	2.49	0.0500	mg/kg wet	2.500		100	70-130	5	20	
1,2-Dichloropropane	2.60	0.0500	mg/kg wet	2.500		104	70-130	5	20	
1,3,5-Trimethylbenzene	2.28	0.0500	mg/kg wet	2.500		91	70-130	3	20	
1,3-Dichlorobenzene	2.23	0.0500	mg/kg wet	2.500		89	70-130	2	20	
1,3-Dichloropropane	2.51	0.0500	mg/kg wet	2.500		101	70-130	4	20	
1,4-Dichlorobenzene	2.23	0.0500	mg/kg wet	2.500		89	70-130	4	20	
1,4-Dioxane - Screen	74.3	5.00	mg/kg wet	50.00		149	44-241	2	200	
1-Chlorohexane	2.52	0.0500	mg/kg wet	2.500		101	70-130	3	20	
2,2-Dichloropropane	3.01	0.100	mg/kg wet	2.500		120	70-130	5	20	
2-Butanone	16.4	1.25	mg/kg wet	12.50		131	70-130	4	20	B+
2-Chlorotoluene	2.46	0.0500	mg/kg wet	2.500		98	70-130	11	20	
2-Hexanone	15.1	0.500	mg/kg wet	12.50		121	70-130	5	20	
4-Chlorotoluene	2.28	0.0500	mg/kg wet	2.500		91	70-130	3	20	
4-Isopropyltoluene	2.18	0.0500	mg/kg wet	2.500		87	70-130	2	20	
4-Methyl-2-Pentanone	13.4	0.500	mg/kg wet	12.50		107	70-130	6	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Acetone	16.5	1.25	mg/kg wet	12.50		132	70-130	3	20	B+
Benzene	2.58	0.0500	mg/kg wet	2.500		103	70-130	4	20	
Bromobenzene	2.30	0.0500	mg/kg wet	2.500		92	70-130	3	20	
Bromochloromethane	2.33	0.0500	mg/kg wet	2.500		93	70-130	3	20	
Bromodichloromethane	2.76	0.0500	mg/kg wet	2.500		111	70-130	5	20	
Bromoform	2.45	0.0500	mg/kg wet	2.500		98	70-130	5	20	
Bromomethane	3.08	0.100	mg/kg wet	2.500		123	70-130	7	20	
Carbon Disulfide	3.08	0.0500	mg/kg wet	2.500		123	70-130	5	20	
Carbon Tetrachloride	2.45	0.0500	mg/kg wet	2.500		98	70-130	5	20	
Chlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	4	20	
Chloroethane	3.22	0.100	mg/kg wet	2.500		129	70-130	2	20	
Chloroform	2.51	0.0500	mg/kg wet	2.500		100	70-130	5	20	
Chloromethane	2.65	0.100	mg/kg wet	2.500		106	70-130	4	20	
cis-1,2-Dichloroethene	2.79	0.0500	mg/kg wet	2.500		112	70-130	5	20	
cis-1,3-Dichloropropene	2.60	0.0500	mg/kg wet	2.500		104	70-130	5	20	
Dibromochloromethane	2.43	0.0500	mg/kg wet	2.500		97	70-130	6	20	
Dibromomethane	2.53	0.0500	mg/kg wet	2.500		101	70-130	5	20	
Dichlorodifluoromethane	2.33	0.0500	mg/kg wet	2.500		93	70-130	7	20	
Diethyl Ether	3.10	0.0500	mg/kg wet	2.500		124	70-130	6	20	
Di-isopropyl ether	2.66	0.0500	mg/kg wet	2.500		106	70-130	5	20	
Ethyl tertiary-butyl ether	2.58	0.0500	mg/kg wet	2.500		103	70-130	5	20	
Ethylbenzene	2.39	0.0500	mg/kg wet	2.500		96	70-130	4	20	
Hexachlorobutadiene	2.68	0.0500	mg/kg wet	2.500		107	70-130	3	20	
Isopropylbenzene	2.07	0.0500	mg/kg wet	2.500		83	70-130	3	20	
Methyl tert-Butyl Ether	2.77	0.0500	mg/kg wet	2.500		111	70-130	6	20	
Methylene Chloride	2.80	0.250	mg/kg wet	2.500		112	70-130	4	20	
Naphthalene	3.02	0.0500	mg/kg wet	2.500		121	70-130	5	20	
n-Butylbenzene	2.45	0.0500	mg/kg wet	2.500		98	70-130	3	20	
n-Propylbenzene	2.22	0.0500	mg/kg wet	2.500		89	70-130	2	20	
sec-Butylbenzene	2.32	0.0500	mg/kg wet	2.500		93	70-130	3	20	
Styrene	2.42	0.0500	mg/kg wet	2.500		97	70-130	4	20	
tert-Butylbenzene	2.27	0.0500	mg/kg wet	2.500		91	70-130	3	20	
Tertiary-amyl methyl ether	2.70	0.0500	mg/kg wet	2.500		108	70-130	5	20	
Tetrachloroethene	2.40	0.0500	mg/kg wet	2.500		96	70-130	4	20	
Tetrahydrofuran	2.82	0.500	mg/kg wet	2.500		113	70-130	5	20	
Toluene	2.56	0.0500	mg/kg wet	2.500		103	70-130	4	20	
trans-1,2-Dichloroethene	2.77	0.0500	mg/kg wet	2.500		111	70-130	5	20	
trans-1,3-Dichloropropene	2.36	0.0500	mg/kg wet	2.500		94	70-130	5	20	
Trichloroethene	2.49	0.0500	mg/kg wet	2.500		100	70-130	5	20	
Vinyl Acetate	2.48	0.250	mg/kg wet	2.500		99	70-130	4	20	
Vinyl Chloride	3.31	0.0500	mg/kg wet	2.500		132	70-130	5	20	B+
Xylene O	2.45	0.0500	mg/kg wet	2.500		98	70-130	3	20	
Xylene P,M	4.92	0.100	mg/kg wet	5.000		98	70-130	4	20	
Surrogate: 1,2-Dichloroethane-d4	*2.42*		mg/kg wet	*2.500*		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*2.45*		mg/kg wet	*2.500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*2.41*		mg/kg wet	*2.500*		*96*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Surrogate: Toluene-d8	*2.42*		mg/kg wet	*2.500*		*97*	*70-130*			
8081A Organochlorine Pesticides										
Batch BF81021 - 3580A										
Blank										
4,4'-DDD	ND	0.0500	mg/kg wet							
4,4'-DDE	ND	0.0500	mg/kg wet							
4,4'-DDT	ND	0.0500	mg/kg wet							
Aldrin	ND	0.0500	mg/kg wet							
alpha-BHC	ND	0.0500	mg/kg wet							
alpha-Chlordane	ND	0.0500	mg/kg wet							
beta-BHC	ND	0.0500	mg/kg wet							
Chlordane (Total)	ND	0.600	mg/kg wet							
delta-BHC	ND	0.0500	mg/kg wet							
Dieldrin	ND	0.0500	mg/kg wet							
Endosulfan I	ND	0.0500	mg/kg wet							
Endosulfan II	ND	0.0500	mg/kg wet							
Endosulfan Sulfate	ND	0.0500	mg/kg wet							
Endrin	ND	0.0500	mg/kg wet							
Endrin Aldehyde	ND	0.0500	mg/kg wet							
Endrin Ketone	ND	0.0500	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0300	mg/kg wet							
gamma-Chlordane	ND	0.0500	mg/kg wet							
Heptachlor	ND	0.0500	mg/kg wet							
Heptachlor Epoxide	ND	0.0500	mg/kg wet							
Hexachlorobenzene	ND	0.0500	mg/kg wet							
Methoxychlor	ND	0.0500	mg/kg wet							
Toxaphene	ND	2.50	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.245*		mg/kg wet	*0.2500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.244*		mg/kg wet	*0.2500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.242*		mg/kg wet	*0.2500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.247*		mg/kg wet	*0.2500*		*99*	*30-150*			
LCS										
4,4'-DDD	0.237	0.0500	mg/kg wet	0.2500		95	40-140			
4,4'-DDE	0.239	0.0500	mg/kg wet	0.2500		96	40-140			
4,4'-DDT	0.229	0.0500	mg/kg wet	0.2500		91	40-140			
Aldrin	0.238	0.0500	mg/kg wet	0.2500		95	40-140			
alpha-BHC	0.242	0.0500	mg/kg wet	0.2500		97	40-140			
alpha-Chlordane	0.237	0.0500	mg/kg wet	0.2500		95	40-140			
beta-BHC	0.232	0.0500	mg/kg wet	0.2500		93	40-140			
delta-BHC	0.216	0.0500	mg/kg wet	0.2500		86	40-140			
Dieldrin	0.239	0.0500	mg/kg wet	0.2500		96	40-140			
Endosulfan I	0.235	0.0500	mg/kg wet	0.2500		94	40-140			
Endosulfan II	0.233	0.0500	mg/kg wet	0.2500		93	40-140			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

8081A Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch BFB1021 - 3580A										
Endosulfan Sulfate	0.225	0.0500	mg/kg wet	0.2500		90	40-140			
Endrin	0.244	0.0500	mg/kg wet	0.2500		98	40-140			
Endrin Aldehyde	0.203	0.0500	mg/kg wet	0.2500		81	40-140			
Endrin Ketone	0.226	0.0500	mg/kg wet	0.2500		90	40-140			
gamma-BHC (Lindane)	0.238	0.0300	mg/kg wet	0.2500		95	40-140			
gamma-Chlordane	0.240	0.0500	mg/kg wet	0.2500		96	40-140			
Heptachlor	0.238	0.0500	mg/kg wet	0.2500		95	40-140			
Heptachlor Epoxide	0.240	0.0500	mg/kg wet	0.2500		96	40-140			
Hexachlorobenzene	0.241	0.0500	mg/kg wet	0.2500		96	40-140			
Methoxychlor	0.233	0.0500	mg/kg wet	0.2500		93	40-140			
Surrogate: Decachlorobiphenyl	*0.261*		mg/kg wet	*0.2500*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.258*		mg/kg wet	*0.2500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.260*		mg/kg wet	*0.2500*		*104*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.266*		mg/kg wet	*0.2500*		*106*	*30-150*			
LCS Dup										
4,4'-DDD	0.252	0.0500	mg/kg wet	0.2500		101	40-140	6	30	
4,4'-DDE	0.252	0.0500	mg/kg wet	0.2500		101	40-140	6	30	
4,4'-DDT	0.241	0.0500	mg/kg wet	0.2500		97	40-140	5	30	
Aldrin	0.245	0.0500	mg/kg wet	0.2500		98	40-140	3	30	
alpha-BHC	0.249	0.0500	mg/kg wet	0.2500		100	40-140	3	30	
alpha-Chlordane	0.243	0.0500	mg/kg wet	0.2500		97	40-140	2	30	
beta-BHC	0.240	0.0500	mg/kg wet	0.2500		96	40-140	3	30	
delta-BHC	0.223	0.0500	mg/kg wet	0.2500		89	40-140	3	30	
Dieldrin	0.247	0.0500	mg/kg wet	0.2500		99	40-140	3	30	
Endosulfan I	0.239	0.0500	mg/kg wet	0.2500		96	40-140	2	30	
Endosulfan II	0.240	0.0500	mg/kg wet	0.2500		96	40-140	3	30	
Endosulfan Sulfate	0.232	0.0500	mg/kg wet	0.2500		93	40-140	3	30	
Endrin	0.250	0.0500	mg/kg wet	0.2500		100	40-140	2	30	
Endrin Aldehyde	0.210	0.0500	mg/kg wet	0.2500		84	40-140	3	30	
Endrin Ketone	0.232	0.0500	mg/kg wet	0.2500		93	40-140	3	30	
gamma-BHC (Lindane)	0.245	0.0300	mg/kg wet	0.2500		98	40-140	3	30	
gamma-Chlordane	0.247	0.0500	mg/kg wet	0.2500		99	40-140	3	30	
Heptachlor	0.245	0.0500	mg/kg wet	0.2500		98	40-140	3	30	
Heptachlor Epoxide	0.247	0.0500	mg/kg wet	0.2500		99	40-140	3	30	
Hexachlorobenzene	0.246	0.0500	mg/kg wet	0.2500		99	40-140	2	30	
Methoxychlor	0.244	0.0500	mg/kg wet	0.2500		98	40-140	5	30	
Surrogate: Decachlorobiphenyl	*0.261*		mg/kg wet	*0.2500*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.258*		mg/kg wet	*0.2500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.258*		mg/kg wet	*0.2500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.254*		mg/kg wet	*0.2500*		*102*	*30-150*			
Duplicate **Source: 0806089-03**										
4,4'-DDD	1.02	0.500	mg/kg wet		1.24			19	30	
4,4'-DDE	ND	0.500	mg/kg wet		ND				30	
4,4'-DDT	ND	0.500	mg/kg wet		ND				30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081A Organochlorine Pesticides										
Batch BF81021 - 3580A										
Aldrin	ND	0.500	mg/kg wet		ND				30	
alpha-BHC	0.234	0.500	mg/kg wet		0.280			18	30	
alpha-Chlordane	1.35	0.500	mg/kg wet		1.28			6	30	
beta-BHC	0.879	0.500	mg/kg wet		0.900			2	30	
Chlordane (Total)	ND	6.00	mg/kg wet		ND				30	
delta-BHC	0.626	0.500	mg/kg wet		0.716			14	30	
Dieldrin	ND	0.500	mg/kg wet		ND				30	
Endosulfan I	ND	0.500	mg/kg wet		ND				30	
Endosulfan II	ND	0.500	mg/kg wet		ND				30	
Endosulfan Sulfate	ND	0.500	mg/kg wet		ND				30	
Endrin	ND	0.500	mg/kg wet		ND				30	
Endrin Aldehyde	ND	0.500	mg/kg wet		ND				30	
Endrin Ketone	ND	0.500	mg/kg wet		ND				30	
gamma-BHC (Lindane)	0.555	0.300	mg/kg wet		0.531			4	30	
gamma-Chlordane	3.19	0.500	mg/kg wet		3.11			3	30	
Heptachlor	ND	0.500	mg/kg wet		ND				30	
Heptachlor Epoxide	0.953	0.500	mg/kg wet		0.888			7	30	
Hexachlorobenzene	2.19	0.500	mg/kg wet		2.50			13	30	
Methoxychlor	ND	0.500	mg/kg wet		ND				30	
Toxaphene	ND	25.0	mg/kg wet		ND				30	
Surrogate: Decachlorobiphenyl	*1.13*		mg/kg wet	*0.2500*		*451*	*30-150*			*SD*
Surrogate: Decachlorobiphenyl [2C]	*0.513*		mg/kg wet	*0.2500*		*205*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene	*5.02*		mg/kg wet	*0.2500*		*NR*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene [2C]	*1.27*		mg/kg wet	*0.2500*		*506*	*30-150*			*SD*
Matrix Spike **Source: 0806089-03**										**MD**
4,4'-DDD	1.18	0.500	mg/kg wet	0.2500	1.24	NR	30-150			
4,4'-DDE	1.20	0.500	mg/kg wet	0.2500	ND	479	30-150			
4,4'-DDT	3.09	0.500	mg/kg wet	0.2500	ND	NR	30-150			
Aldrin	0.543	0.500	mg/kg wet	0.2500	ND	217	30-150			
alpha-BHC	0.880	0.500	mg/kg wet	0.2500	0.280	240	30-150			
alpha-Chlordane	1.48	0.500	mg/kg wet	0.2500	1.28	82	30-150			
beta-BHC	1.17	0.500	mg/kg wet	0.2500	0.900	110	30-150			
delta-BHC	0.905	0.500	mg/kg wet	0.2500	0.716	75	30-150			
Dieldrin	1.42	0.500	mg/kg wet	0.2500	ND	566	30-150			
Endosulfan I	0.644	0.500	mg/kg wet	0.2500	ND	258	30-150			
Endosulfan II	1.12	0.500	mg/kg wet	0.2500	ND	448	30-150			
Endosulfan Sulfate	1.04	0.500	mg/kg wet	0.2500	ND	417	30-150			
Endrin	1.66	0.500	mg/kg wet	0.2500	ND	662	30-150			
Endrin Aldehyde	4.03	0.500	mg/kg wet	0.2500	ND	NR	30-150			
Endrin Ketone	0.249	0.500	mg/kg wet	0.2500	ND	100	30-150			
gamma-BHC (Lindane)	1.37	0.300	mg/kg wet	0.2500	0.531	337	30-150			
gamma-Chlordane	3.75	0.500	mg/kg wet	0.2500	3.11	257	30-150			
Heptachlor	1.14	0.500	mg/kg wet	0.2500	ND	458	30-150			
Heptachlor Epoxide	1.22	0.500	mg/kg wet	0.2500	0.888	134	30-150			
Hexachlorobenzene	2.89	0.500	mg/kg wet	0.2500	2.50	157	30-150			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081A Organochlorine Pesticides										
Batch BF81021 - 3580A										
Methoxychlor	0.191	0.500	mg/kg wet	0.2500	ND	76	30-150			
Surrogate: Decachlorobiphenyl	*1.01*		mg/kg wet	*0.2500*		*403*	*30-150*			*SD*
Surrogate: Decachlorobiphenyl [2C]	*0.614*		mg/kg wet	*0.2500*		*246*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene	*5.32*		mg/kg wet	*0.2500*		*NR*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene [2C]	*1.59*		mg/kg wet	*0.2500*		*638*	*30-150*			*SD*
8082 Polychlorinated Biphenyls (PCB)										
Batch BF80629 - 3580A										
Blank										
Aroclor 1016	ND	1.00	mg/kg wet							
Aroclor 1221	ND	1.00	mg/kg wet							
Aroclor 1232	ND	1.00	mg/kg wet							
Aroclor 1242	ND	1.00	mg/kg wet							
Aroclor 1248	ND	1.00	mg/kg wet							
Aroclor 1254	ND	1.00	mg/kg wet							
Aroclor 1260	ND	1.00	mg/kg wet							
Aroclor 1262	ND	1.00	mg/kg wet							
Aroclor 1268	ND	1.00	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.442*		mg/kg wet	*0.5000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.433*		mg/kg wet	*0.5000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.377*		mg/kg wet	*0.5000*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.444*		mg/kg wet	*0.5000*		*89*	*30-150*			
LCS										
Aroclor 1016	8.04	1.00	mg/kg wet	10.00		80	40-140			
Aroclor 1260	8.11	1.00	mg/kg wet	10.00		81	40-140			
Surrogate: Decachlorobiphenyl	*0.436*		mg/kg wet	*0.5000*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.423*		mg/kg wet	*0.5000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.381*		mg/kg wet	*0.5000*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.608*		mg/kg wet	*0.5000*		*122*	*30-150*			
LCS Dup										
Aroclor 1016	8.54	1.00	mg/kg wet	10.00		85	40-140	6	50	
Aroclor 1260	8.52	1.00	mg/kg wet	10.00		85	40-140	5	50	
Surrogate: Decachlorobiphenyl	*0.466*		mg/kg wet	*0.5000*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.452*		mg/kg wet	*0.5000*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.420*		mg/kg wet	*0.5000*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.524*		mg/kg wet	*0.5000*		*105*	*30-150*			
Duplicate **Source: 0806089-03**										
Aroclor 1016	ND	1.00	mg/kg wet		ND				50	
Aroclor 1221	ND	1.00	mg/kg wet		ND				50	
Aroclor 1232	ND	1.00	mg/kg wet		ND				50	
Aroclor 1242	ND	1.00	mg/kg wet		ND				50	
Aroclor 1248	ND	1.00	mg/kg wet		ND				50	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch BF80629 - 3580A										
Aroclor 1254	ND	1.00	mg/kg wet		ND				50	
Aroclor 1260	27.5	10.0	mg/kg wet		25.8			7	50	P
Aroclor 1262	ND	1.00	mg/kg wet		ND				50	
Aroclor 1268	ND	1.00	mg/kg wet		ND				50	
Surrogate: Decachlorobiphenyl	*0.439*		mg/kg wet	*0.5000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.475*		mg/kg wet	*0.5000*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*6.88*		mg/kg wet	*0.5000*		*NR*	*30-150*			*SM*
Surrogate: Tetrachloro-m-xylene [2C]	*1.00*		mg/kg wet	*0.5000*		*201*	*30-150*			*SM*
Matrix Spike **Source: 0806089-03**										
Aroclor 1016	73.0	10.0	mg/kg wet	10.00	ND	730	40-140			M+
Aroclor 1260	30.4	10.0	mg/kg wet	10.00	25.8	46	40-140			
Surrogate: Decachlorobiphenyl	*0.398*		mg/kg wet	*0.5000*		*80*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.466*		mg/kg wet	*0.5000*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*7.27*		mg/kg wet	*0.5000*		*NR*	*30-150*			*SM*
Surrogate: Tetrachloro-m-xylene [2C]	*1.08*		mg/kg wet	*0.5000*		*217*	*30-150*			*SM*
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0250	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0250	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0040	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							

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Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.4*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*25.2*		ug/L	*25.00*		*101*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.25		ug/L	10.00		92	70-130			
1,1,1-Trichloroethane	8.95		ug/L	10.00		90	70-130			
1,1,2,2-Tetrachloroethane	8.67		ug/L	10.00		87	70-130			
1,1,2-Trichloroethane	9.49		ug/L	10.00		95	70-130			
1,1-Dichloroethane	9.56		ug/L	10.00		96	70-130			
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130			
1,1-Dichloropropene	9.29		ug/L	10.00		93	70-130			
1,2,3-Trichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,2,3-Trichloropropane	9.14		ug/L	10.00		91	70-130			
1,2,4-Trichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,2,4-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,2-Dibromo-3-Chloropropane	9.05		ug/L	10.00		90	70-130			
1,2-Dibromoethane	8.97		ug/L	10.00		90	70-130			
1,2-Dichlorobenzene	9.79		ug/L	10.00		98	70-130			
1,2-Dichloroethane	9.10		ug/L	10.00		91	70-130			
1,2-Dichloropropane	9.47		ug/L	10.00		95	70-130			
1,3,5-Trimethylbenzene	9.61		ug/L	10.00		96	70-130			
1,3-Dichlorobenzene	9.44		ug/L	10.00		94	70-130			
1,3-Dichloropropane	8.83		ug/L	10.00		88	70-130			
1,4-Dichlorobenzene	9.55		ug/L	10.00		96	70-130			
1,4-Dioxane - Screen	375		ug/L	200.0		188	0-332			
1-Chlorohexane	9.86		ug/L	10.00		99	70-130			
2,2-Dichloropropane	9.09		ug/L	10.00		91	70-130			
2-Butanone	53.8		ug/L	50.00		108	70-130			
2-Chlorotoluene	9.69		ug/L	10.00		97	70-130			
2-Hexanone	59.8		ug/L	50.00		120	70-130			
4-Chlorotoluene	9.67		ug/L	10.00		97	70-130			
4-Isopropyltoluene	9.61		ug/L	10.00		96	70-130			
4-Methyl-2-Pentanone	51.1		ug/L	50.00		102	70-130			
Acetone	64.2		ug/L	50.00		128	70-130			
Benzene	9.32		ug/L	10.00		93	70-130			
Bromobenzene	9.57		ug/L	10.00		96	70-130			
Bromochloromethane	9.65		ug/L	10.00		96	70-130			
Bromodichloromethane	10.2		ug/L	10.00		102	70-130			
Bromoform	9.59		ug/L	10.00		96	70-130			
Bromomethane	9.66		ug/L	10.00		97	70-130			
Carbon Disulfide	10.9		ug/L	10.00		109	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Carbon Tetrachloride	8.82		ug/L	10.00		88	70-130			
Chlorobenzene	9.62		ug/L	10.00		96	70-130			
Chloroethane	9.48		ug/L	10.00		95	70-130			
Chloroform	9.52		ug/L	10.00		95	70-130			
Chloromethane	8.93		ug/L	10.00		89	70-130			
cis-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130			
cis-1,3-Dichloropropene	9.39		ug/L	10.00		94	70-130			
Dibromochloromethane	9.27		ug/L	10.00		93	70-130			
Dibromomethane	9.24		ug/L	10.00		92	70-130			
Dichlorodifluoromethane	8.04		ug/L	10.00		80	70-130			
Diethyl Ether	9.89		ug/L	10.00		99	70-130			
Di-isopropyl ether	11.2		ug/L	10.00		112	70-130			
Ethyl tertiary-butyl ether	10.7		ug/L	10.00		107	70-130			
Ethylbenzene	9.69		ug/L	10.00		97	70-130			
Hexachlorobutadiene	11.4		ug/L	10.00		114	70-130			
Hexachloroethane	10.2		ug/L	10.00		102	70-130			
Isopropylbenzene	8.88		ug/L	10.00		89	70-130			
Methyl tert-Butyl Ether	11.7		ug/L	10.00		117	70-130			
Methylene Chloride	8.79		ug/L	10.00		88	70-130			
Naphthalene	10.6		ug/L	10.00		106	70-130			
n-Butylbenzene	10.0		ug/L	10.00		100	70-130			
n-Propylbenzene	9.94		ug/L	10.00		99	70-130			
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Styrene	9.44		ug/L	10.00		94	70-130			
tert-Butylbenzene	9.59		ug/L	10.00		96	70-130			
Tertiary-amyl methyl ether	10.6		ug/L	10.00		106	70-130			
Tetrachloroethene	9.14		ug/L	10.00		91	70-130			
Tetrahydrofuran	10.0		ug/L	10.00		100	70-130			
Toluene	9.76		ug/L	10.00		98	70-130			
trans-1,2-Dichloroethene	10.3		ug/L	10.00		103	70-130			
trans-1,3-Dichloropropene	8.60		ug/L	10.00		86	70-130			
Trichloroethene	9.07		ug/L	10.00		91	70-130			
Trichlorofluoromethane	9.24		ug/L	10.00		92	70-130			
Vinyl Acetate	8.86		ug/L	10.00		89	70-130			
Vinyl Chloride	11.5		ug/L	10.00		115	70-130			
Xylene O	9.59		ug/L	10.00		96	70-130			
Xylene P,M	19.1		ug/L	20.00		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*26.2*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.17		ug/L	10.00		92	70-130	0.9	20	
1,1,1-Trichloroethane	8.97		ug/L	10.00		90	70-130	0.2	20	
1,1,2,2-Tetrachloroethane	8.87		ug/L	10.00		89	70-130	2	20	
1,1,2-Trichloroethane	9.75		ug/L	10.00		98	70-130	3	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
1,1-Dichloroethane	9.27		ug/L	10.00		93	70-130	3	20	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.2	20	
1,1-Dichloropropene	9.37		ug/L	10.00		94	70-130	0.9	20	
1,2,3-Trichlorobenzene	9.78		ug/L	10.00		98	70-130	9	20	
1,2,3-Trichloropropane	8.98		ug/L	10.00		90	70-130	2	20	
1,2,4-Trichlorobenzene	9.53		ug/L	10.00		95	70-130	10	20	
1,2,4-Trimethylbenzene	9.59		ug/L	10.00		96	70-130	4	20	
1,2-Dibromo-3-Chloropropane	8.09		ug/L	10.00		81	70-130	11	20	
1,2-Dibromoethane	9.39		ug/L	10.00		94	70-130	5	20	
1,2-Dichlorobenzene	9.31		ug/L	10.00		93	70-130	5	20	
1,2-Dichloroethane	8.85		ug/L	10.00		88	70-130	3	20	
1,2-Dichloropropane	9.04		ug/L	10.00		90	70-130	5	20	
1,3,5-Trimethylbenzene	9.57		ug/L	10.00		96	70-130	0.4	20	
1,3-Dichlorobenzene	9.07		ug/L	10.00		91	70-130	4	20	
1,3-Dichloropropane	9.23		ug/L	10.00		92	70-130	4	20	
1,4-Dichlorobenzene	9.27		ug/L	10.00		93	70-130	3	20	
1,4-Dioxane - Screen	259		ug/L	200.0		129	0-332	37	200	
1-Chlorohexane	9.71		ug/L	10.00		97	70-130	2	20	
2,2-Dichloropropane	8.88		ug/L	10.00		89	70-130	2	20	
2-Butanone	52.0		ug/L	50.00		104	70-130	3	20	
2-Chlorotoluene	9.74		ug/L	10.00		97	70-130	0.5	20	
2-Hexanone	57.3		ug/L	50.00		115	70-130	4	20	
4-Chlorotoluene	9.31		ug/L	10.00		93	70-130	4	20	
4-Isopropyltoluene	9.24		ug/L	10.00		92	70-130	4	20	
4-Methyl-2-Pentanone	49.2		ug/L	50.00		98	70-130	4	20	
Acetone	59.9		ug/L	50.00		120	70-130	7	20	
Benzene	9.28		ug/L	10.00		93	70-130	0.4	20	
Bromobenzene	9.33		ug/L	10.00		93	70-130	3	20	
Bromochloromethane	9.76		ug/L	10.00		98	70-130	1	20	
Bromodichloromethane	9.85		ug/L	10.00		98	70-130	3	20	
Bromoform	9.73		ug/L	10.00		97	70-130	1	20	
Bromomethane	9.84		ug/L	10.00		98	70-130	2	20	
Carbon Disulfide	11.0		ug/L	10.00		110	70-130	0.9	20	
Carbon Tetrachloride	8.82		ug/L	10.00		88	70-130	0	20	
Chlorobenzene	9.25		ug/L	10.00		92	70-130	4	20	
Chloroethane	9.68		ug/L	10.00		97	70-130	2	20	
Chloroform	9.31		ug/L	10.00		93	70-130	2	20	
Chloromethane	8.69		ug/L	10.00		87	70-130	3	20	
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	3	20	
cis-1,3-Dichloropropene	9.20		ug/L	10.00		92	70-130	2	20	
Dibromochloromethane	9.14		ug/L	10.00		91	70-130	1	20	
Dibromomethane	9.06		ug/L	10.00		91	70-130	2	20	
Dichlorodifluoromethane	8.38		ug/L	10.00		84	70-130	4	20	
Diethyl Ether	9.92		ug/L	10.00		99	70-130	0.3	20	
Di-isopropyl ether	10.6		ug/L	10.00		106	70-130	5	20	
Ethyl tertiary-butyl ether	10.6		ug/L	10.00		106	70-130	2	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Ethylbenzene	9.49		ug/L	10.00		95	70-130	2	20	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	9	20	
Hexachloroethane	10.0		ug/L	10.00		100	70-130	2	20	
Isopropylbenzene	8.72		ug/L	10.00		87	70-130	2	20	
Methyl tert-Butyl Ether	11.6		ug/L	10.00		116	70-130	0.8	20	
Methylene Chloride	8.93		ug/L	10.00		89	70-130	2	20	
Naphthalene	9.86		ug/L	10.00		99	70-130	7	20	
n-Butylbenzene	9.63		ug/L	10.00		96	70-130	4	20	
n-Propylbenzene	9.77		ug/L	10.00		98	70-130	2	20	
sec-Butylbenzene	9.49		ug/L	10.00		95	70-130	6	20	
Styrene	9.39		ug/L	10.00		94	70-130	0.5	20	
tert-Butylbenzene	9.58		ug/L	10.00		96	70-130	0.1	20	
Tertiary-amyl methyl ether	10.4		ug/L	10.00		104	70-130	2	20	
Tetrachloroethene	9.19		ug/L	10.00		92	70-130	0.5	20	
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130	2	20	
Toluene	9.35		ug/L	10.00		94	70-130	4	20	
trans-1,2-Dichloroethene	9.94		ug/L	10.00		99	70-130	3	20	
trans-1,3-Dichloropropene	8.68		ug/L	10.00		87	70-130	0.9	20	
Trichloroethene	9.13		ug/L	10.00		91	70-130	0.7	20	
Trichlorofluoromethane	9.21		ug/L	10.00		92	70-130	0.3	20	
Vinyl Acetate	8.91		ug/L	10.00		89	70-130	0.6	20	
Vinyl Chloride	11.6		ug/L	10.00		116	70-130	0.3	20	
Xylene O	9.51		ug/L	10.00		95	70-130	0.8	20	
Xylene P,M	19.1		ug/L	20.00		95	70-130	0.3	20	
Surrogate: 1,2-Dichloroethane-d4	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*26.7*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Batch BF81004 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0250	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0250	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0040	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*23.5*		ug/L	*25.00*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.08		ug/L	10.00		91	70-130			
1,1,1-Trichloroethane	9.19		ug/L	10.00		92	70-130			
1,1,2,2-Tetrachloroethane	9.14		ug/L	10.00		91	70-130			
1,1,2-Trichloroethane	9.41		ug/L	10.00		94	70-130			
1,1-Dichloroethane	9.40		ug/L	10.00		94	70-130			
1,1-Dichloroethene	10.8		ug/L	10.00		108	70-130			
1,1-Dichloropropene	9.55		ug/L	10.00		96	70-130			
1,2,3-Trichlorobenzene	9.98		ug/L	10.00		100	70-130			
1,2,3-Trichloropropane	9.17		ug/L	10.00		92	70-130			
1,2,4-Trichlorobenzene	9.88		ug/L	10.00		99	70-130			
1,2,4-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dibromo-3-Chloropropane	10.3		ug/L	10.00		103	70-130			
1,2-Dibromoethane	9.19		ug/L	10.00		92	70-130			
1,2-Dichlorobenzene	9.69		ug/L	10.00		97	70-130			
1,2-Dichloroethane	9.44		ug/L	10.00		94	70-130			
1,2-Dichloropropane	9.07		ug/L	10.00		91	70-130			
1,3,5-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,3-Dichlorobenzene	9.76		ug/L	10.00		98	70-130			
1,3-Dichloropropane	9.40		ug/L	10.00		94	70-130			
1,4-Dichlorobenzene	9.57		ug/L	10.00		96	70-130			
1,4-Dioxane - Screen	482		ug/L	200.0		241	0-332			
1-Chlorohexane	10.1		ug/L	10.00		101	70-130			
2,2-Dichloropropane	9.29		ug/L	10.00		93	70-130			
2-Butanone	52.3		ug/L	50.00		105	70-130			
2-Chlorotoluene	10.3		ug/L	10.00		103	70-130			
2-Hexanone	58.9		ug/L	50.00		118	70-130			
4-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
4-Isopropyltoluene	9.80		ug/L	10.00		98	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
4-Methyl-2-Pentanone	48.2		ug/L	50.00		96	70-130			
Acetone	55.1		ug/L	50.00		110	70-130			
Benzene	9.45		ug/L	10.00		94	70-130			
Bromobenzene	9.75		ug/L	10.00		98	70-130			
Bromochloromethane	9.50		ug/L	10.00		95	70-130			
Bromodichloromethane	10.0		ug/L	10.00		100	70-130			
Bromoform	9.63		ug/L	10.00		96	70-130			
Bromomethane	9.73		ug/L	10.00		97	70-130			
Carbon Disulfide	11.0		ug/L	10.00		110	70-130			
Carbon Tetrachloride	9.35		ug/L	10.00		94	70-130			
Chlorobenzene	9.69		ug/L	10.00		97	70-130			
Chloroethane	9.26		ug/L	10.00		93	70-130			
Chloroform	9.61		ug/L	10.00		96	70-130			
Chloromethane	8.75		ug/L	10.00		88	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	9.01		ug/L	10.00		90	70-130			
Dibromochloromethane	9.59		ug/L	10.00		96	70-130			
Dibromomethane	8.81		ug/L	10.00		88	70-130			
Dichlorodifluoromethane	8.65		ug/L	10.00		86	70-130			
Diethyl Ether	9.42		ug/L	10.00		94	70-130			
Di-Isopropyl ether	10.8		ug/L	10.00		108	70-130			
Ethyl tertiary-butyl ether	10.3		ug/L	10.00		103	70-130			
Ethylbenzene	9.87		ug/L	10.00		99	70-130			
Hexachlorobutadiene	10.9		ug/L	10.00		109	70-130			
Hexachloroethane	10.7		ug/L	10.00		107	70-130			
Isopropylbenzene	9.00		ug/L	10.00		90	70-130			
Methyl tert-Butyl Ether	11.6		ug/L	10.00		116	70-130			
Methylene Chloride	8.86		ug/L	10.00		89	70-130			
Naphthalene	9.64		ug/L	10.00		96	70-130			
n-Butylbenzene	10.7		ug/L	10.00		107	70-130			
n-Propylbenzene	10.5		ug/L	10.00		105	70-130			
sec-Butylbenzene	10.5		ug/L	10.00		105	70-130			
Styrene	9.38		ug/L	10.00		94	70-130			
tert-Butylbenzene	10.0		ug/L	10.00		100	70-130			
Tertiary-amyl methyl ether	10.2		ug/L	10.00		102	70-130			
Tetrachloroethene	9.01		ug/L	10.00		90	70-130			
Tetrahydrofuran	9.68		ug/L	10.00		97	70-130			
Toluene	9.42		ug/L	10.00		94	70-130			
trans-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130			
trans-1,3-Dichloropropene	8.83		ug/L	10.00		88	70-130			
Trichloroethene	9.35		ug/L	10.00		94	70-130			
Trichlorofluoromethane	9.53		ug/L	10.00		95	70-130			
Vinyl Acetate	9.03		ug/L	10.00		90	70-130			
Vinyl Chloride	11.7		ug/L	10.00		117	70-130			
Xylene O	9.49		ug/L	10.00		95	70-130			
Xylene P,M	19.2		ug/L	20.00		96	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
Surrogate: 1,2-Dichloroethane-d4	*24.5*		ug/L	*25.00*		*98*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.1*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*26.4*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Toluene-d8	*26.2*		ug/L	*25.00*		*105*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.56		ug/L	10.00		96	70-130	5	20	
1,1,1-Trichloroethane	9.23		ug/L	10.00		92	70-130	0.4	20	
1,1,2,2-Tetrachloroethane	9.41		ug/L	10.00		94	70-130	3	20	
1,1,2-Trichloroethane	9.21		ug/L	10.00		92	70-130	2	20	
1,1-Dichloroethane	9.46		ug/L	10.00		95	70-130	0.6	20	
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130	3	20	
1,1-Dichloropropene	9.41		ug/L	10.00		94	70-130	1	20	
1,2,3-Trichlorobenzene	8.56		ug/L	10.00		86	70-130	15	20	
1,2,3-Trichloropropane	9.56		ug/L	10.00		96	70-130	4	20	
1,2,4-Trichlorobenzene	9.03		ug/L	10.00		90	70-130	9	20	
1,2,4-Trimethylbenzene	10.2		ug/L	10.00		102	70-130	0.5	20	
1,2-Dibromo-3-Chloropropane	8.46		ug/L	10.00		85	70-130	20	20	
1,2-Dibromoethane	9.68		ug/L	10.00		97	70-130	5	20	
1,2-Dichlorobenzene	9.72		ug/L	10.00		97	70-130	0.3	20	
1,2-Dichloroethane	9.08		ug/L	10.00		91	70-130	4	20	
1,2-Dichloropropane	9.17		ug/L	10.00		92	70-130	1	20	
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130	0.6	20	
1,3-Dichlorobenzene	9.68		ug/L	10.00		97	70-130	0.8	20	
1,3-Dichloropropane	9.48		ug/L	10.00		95	70-130	0.8	20	
1,4-Dichlorobenzene	9.85		ug/L	10.00		98	70-130	3	20	
1,4-Dioxane - Screen	330		ug/L	200.0		165	0-332	37	200	
1-Chlorohexane	9.91		ug/L	10.00		99	70-130	2	20	
2,2-Dichloropropane	9.19		ug/L	10.00		92	70-130	1	20	
2-Butanone	50.3		ug/L	50.00		101	70-130	4	20	
2-Chlorotoluene	10.6		ug/L	10.00		106	70-130	3	20	
2-Hexanone	57.6		ug/L	50.00		115	70-130	2	20	
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130	1	20	
4-Isopropyltoluene	9.67		ug/L	10.00		97	70-130	1	20	
4-Methyl-2-Pentanone	46.6		ug/L	50.00		93	70-130	3	20	
Acetone	52.0		ug/L	50.00		104	70-130	6	20	
Benzene	9.31		ug/L	10.00		93	70-130	1	20	
Bromobenzene	10.0		ug/L	10.00		100	70-130	3	20	
Bromochloromethane	9.56		ug/L	10.00		96	70-130	0.6	20	
Bromodichloromethane	10.1		ug/L	10.00		101	70-130	1	20	
Bromoform	9.56		ug/L	10.00		96	70-130	0.7	20	
Bromomethane	9.68		ug/L	10.00		97	70-130	0.5	20	
Carbon Disulfide	11.1		ug/L	10.00		111	70-130	1	20	
Carbon Tetrachloride	9.22		ug/L	10.00		92	70-130	1	20	
Chlorobenzene	9.77		ug/L	10.00		98	70-130	0.8	20	
Chloroethane	9.19		ug/L	10.00		92	70-130	0.8	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
Chloroform	9.59		ug/L	10.00		96	70-130	0.2	20	
Chloromethane	8.36		ug/L	10.00		84	70-130	5	20	
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.1	20	
cis-1,3-Dichloropropene	9.18		ug/L	10.00		92	70-130	2	20	
Dibromochloromethane	9.53		ug/L	10.00		95	70-130	0.6	20	
Dibromomethane	9.21		ug/L	10.00		92	70-130	4	20	
Dichlorodifluoromethane	8.21		ug/L	10.00		82	70-130	5	20	
Diethyl Ether	9.25		ug/L	10.00		92	70-130	2	20	
Di-isopropyl ether	10.6		ug/L	10.00		106	70-130	1	20	
Ethyl tertiary-butyl ether	10.2		ug/L	10.00		102	70-130	0.3	20	
Ethylbenzene	9.92		ug/L	10.00		99	70-130	0.5	20	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	5	20	
Hexachloroethane	10.7		ug/L	10.00		107	70-130	0.2	20	
Isopropylbenzene	9.18		ug/L	10.00		92	70-130	2	20	
Methyl tert-Butyl Ether	11.7		ug/L	10.00		117	70-130	0.8	20	
Methylene Chloride	8.88		ug/L	10.00		89	70-130	0.2	20	
Naphthalene	8.89		ug/L	10.00		89	70-130	8	20	
n-Butylbenzene	10.1		ug/L	10.00		101	70-130	6	20	
n-Propylbenzene	10.6		ug/L	10.00		106	70-130	0.5	20	
sec-Butylbenzene	10.2		ug/L	10.00		102	70-130	3	20	
Styrene	9.51		ug/L	10.00		95	70-130	1	20	
tert-Butylbenzene	10.1		ug/L	10.00		101	70-130	0.6	20	
Tertiary-amyl methyl ether	10.3		ug/L	10.00		103	70-130	1	20	
Tetrachloroethene	9.27		ug/L	10.00		93	70-130	3	20	
Tetrahydrofuran	9.11		ug/L	10.00		91	70-130	6	20	
Toluene	9.42		ug/L	10.00		94	70-130	0	20	
trans-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	0.3	20	
trans-1,3-Dichloropropene	8.25		ug/L	10.00		82	70-130	7	20	
Trichloroethene	9.48		ug/L	10.00		95	70-130	1	20	
Trichlorofluoromethane	9.82		ug/L	10.00		98	70-130	3	20	
Vinyl Acetate	8.77		ug/L	10.00		88	70-130	3	20	
Vinyl Chloride	11.6		ug/L	10.00		116	70-130	1	20	
Xylene O	9.79		ug/L	10.00		98	70-130	3	20	
Xylene P,M	19.5		ug/L	20.00		97	70-130	2	20	
Surrogate: 1,2-Dichloroethane-d4	*25.1*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*26.1*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: Toluene-d8	*26.2*		ug/L	*25.00*		*105*	*70-130*			
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Blank										
1,1-Biphenyl	ND	99.9	mg/kg wet							
1,2,4-Trichlorobenzene	ND	99.9	mg/kg wet							
1,2-Dichlorobenzene	ND	99.9	mg/kg wet							

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Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
1,3-Dichlorobenzene	ND	99.9	mg/kg wet							
1,4-Dichlorobenzene	ND	99.9	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	501	mg/kg wet							
2,4,5-Trichlorophenol	ND	99.9	mg/kg wet							
2,4,6-Trichlorophenol	ND	99.9	mg/kg wet							
2,4-Dichlorophenol	ND	99.9	mg/kg wet							
2,4-Dimethylphenol	ND	99.9	mg/kg wet							
2,4-Dinitrophenol	ND	501	mg/kg wet							
2,4-Dinitrotoluene	ND	99.9	mg/kg wet							
2,6-Dinitrotoluene	ND	99.9	mg/kg wet							
2-Chloronaphthalene	ND	99.9	mg/kg wet							
2-Chlorophenol	ND	99.9	mg/kg wet							
2-Methylnaphthalene	ND	99.9	mg/kg wet							
2-Methylphenol	ND	99.9	mg/kg wet							
2-Nitroaniline	ND	99.9	mg/kg wet							
2-Nitrophenol	ND	99.9	mg/kg wet							
3,3'-Dichlorobenzidine	ND	200	mg/kg wet							
3+4-Methylphenol	ND	200	mg/kg wet							
3-Nitroaniline	ND	99.9	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	501	mg/kg wet							
4-Bromophenyl-phenylether	ND	99.9	mg/kg wet							
4-Chloro-3-Methylphenol	ND	99.9	mg/kg wet							
4-Chloroaniline	ND	200	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	99.9	mg/kg wet							
4-Nitroaniline	ND	99.9	mg/kg wet							
4-Nitrophenol	ND	501	mg/kg wet							
Acenaphthene	ND	99.9	mg/kg wet							
Acenaphthylene	ND	99.9	mg/kg wet							
Acetophenone	ND	200	mg/kg wet							
Aniline	ND	200	mg/kg wet							
Anthracene	ND	99.9	mg/kg wet							
Azobenzene	ND	99.9	mg/kg wet							
Benzo(a)anthracene	ND	99.9	mg/kg wet							
Benzo(a)pyrene	ND	50.1	mg/kg wet							
Benzo(b)fluoranthene	ND	99.9	mg/kg wet							
Benzo(g,h,i)perylene	ND	99.9	mg/kg wet							
Benzo(k)fluoranthene	ND	99.9	mg/kg wet							
Benzoic Acid	ND	501	mg/kg wet							
Benzyl Alcohol	ND	99.9	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	99.9	mg/kg wet							
bis(2-Chloroethyl)ether	ND	99.9	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	99.9	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	99.9	mg/kg wet							
Butylbenzylphthalate	ND	99.9	mg/kg wet							
Carbazole	ND	99.9	mg/kg wet							
Chrysene	ND	50.1	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Dibenzo(a,h)Anthracene	ND	50.1	mg/kg wet							
Dibenzofuran	ND	99.9	mg/kg wet							
Diethylphthalate	ND	99.9	mg/kg wet							
Dimethylphthalate	ND	99.9	mg/kg wet							
Di-n-butylphthalate	ND	99.9	mg/kg wet							
Di-n-octylphthalate	ND	99.9	mg/kg wet							
Fluoranthene	ND	99.9	mg/kg wet							
Fluorene	ND	99.9	mg/kg wet							
Hexachlorobenzene	ND	50.1	mg/kg wet							
Hexachlorobutadiene	ND	99.9	mg/kg wet							
Hexachlorocyclopentadiene	ND	501	mg/kg wet							
Hexachloroethane	ND	99.9	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	99.9	mg/kg wet							
Isophorone	ND	99.9	mg/kg wet							
Naphthalene	ND	99.9	mg/kg wet							
Nitrobenzene	ND	99.9	mg/kg wet							
N-Nitrosodimethylamine	ND	99.9	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	99.9	mg/kg wet							
N-nitrosodiphenylamine	ND	99.9	mg/kg wet							
Pentachlorophenol	ND	501	mg/kg wet							
Phenanthrene	ND	99.9	mg/kg wet							
Phenol	ND	99.9	mg/kg wet							
Pyrene	ND	99.9	mg/kg wet							
Pyridine	ND	501	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*97.5*		mg/kg wet	*100.0*		*98*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*123*		mg/kg wet	*150.0*		*82*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*156*		mg/kg wet	*150.0*		*104*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*105*		mg/kg wet	*100.0*		*105*	*30-130*			
Surrogate: 2-Fluorophenol	*148*		mg/kg wet	*150.0*		*98*	*30-130*			
Surrogate: Nitrobenzene-d5	*107*		mg/kg wet	*100.0*		*107*	*30-130*			
Surrogate: Phenol-d6	*158*		mg/kg wet	*150.0*		*105*	*30-130*			
Surrogate: p-Terphenyl-d14	*106*		mg/kg wet	*100.0*		*106*	*30-130*			
LCS										
1,1-Biphenyl	120	99.9	mg/kg wet	100.0		120	40-140			
1,2,4-Trichlorobenzene	117	99.9	mg/kg wet	100.0		117	40-140			
1,2-Dichlorobenzene	119	99.9	mg/kg wet	100.0		119	40-140			
1,3-Dichlorobenzene	115	99.9	mg/kg wet	100.0		115	40-140			
1,4-Dichlorobenzene	121	99.9	mg/kg wet	100.0		121	40-140			
2,3,4,6-Tetrachlorophenol	99.4	501	mg/kg wet	100.0		99	30-130			
2,4,5-Trichlorophenol	123	99.9	mg/kg wet	100.0		123	30-130			
2,4,6-Trichlorophenol	109	99.9	mg/kg wet	100.0		109	30-130			
2,4-Dichlorophenol	119	99.9	mg/kg wet	100.0		119	30-130			
2,4-Dimethylphenol	115	99.9	mg/kg wet	100.0		115	30-130			
2,4-Dinitrophenol	ND	501	mg/kg wet	100.0			30-130			B-
2,4-Dinitrotoluene	107	99.9	mg/kg wet	100.0		107	40-140			
2,6-Dinitrotoluene	109	99.9	mg/kg wet	100.0		109	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
2-Chloronaphthalene	110	99.9	mg/kg wet	100.0		110	40-140			
2-Chlorophenol	110	99.9	mg/kg wet	100.0		110	30-130			
2-Methylnaphthalene	124	99.9	mg/kg wet	100.0		124	40-140			
2-Methylphenol	114	99.9	mg/kg wet	100.0		114	30-130			
2-Nitroaniline	111	99.9	mg/kg wet	100.0		111	40-140			
2-Nitrophenol	110	99.9	mg/kg wet	100.0		110	30-130			
3,3'-Dichlorobenzidine	116	200	mg/kg wet	100.0		116	40-140			
3+4-Methylphenol	231	200	mg/kg wet	200.0		116	30-130			
3-Nitroaniline	98.4	99.9	mg/kg wet	100.0		98	40-140			
4,6-Dinitro-2-Methylphenol	69.0	501	mg/kg wet	100.0		69	30-130			
4-Bromophenyl-phenylether	106	99.9	mg/kg wet	100.0		106	40-140			
4-Chloro-3-Methylphenol	113	99.9	mg/kg wet	100.0		113	30-130			
4-Chloroaniline	75.8	200	mg/kg wet	100.0		76	40-140			
4-Chloro-phenyl-phenyl ether	118	99.9	mg/kg wet	100.0		118	40-140			
4-Nitroaniline	108	99.9	mg/kg wet	100.0		108	40-140			
4-Nitrophenol	106	501	mg/kg wet	100.0		106	30-130			
Acenaphthene	117	99.9	mg/kg wet	100.0		117	40-140			
Acenaphthylene	106	99.9	mg/kg wet	100.0		106	40-140			
Acetophenone	120	200	mg/kg wet	100.0		120	40-140			
Aniline	75.1	200	mg/kg wet	100.0		75	40-140			
Anthracene	113	99.9	mg/kg wet	100.0		113	40-140			
Azobenzene	104	99.9	mg/kg wet	100.0		104	40-140			
Benzo(a)anthracene	111	99.9	mg/kg wet	100.0		111	40-140			
Benzo(a)pyrene	104	50.1	mg/kg wet	100.0		104	40-140			
Benzo(b)fluoranthene	91.8	99.9	mg/kg wet	100.0		92	40-140			
Benzo(g,h,i)perylene	98.1	99.9	mg/kg wet	100.0		98	40-140			
Benzo(k)fluoranthene	108	99.9	mg/kg wet	100.0		108	40-140			
Benzoic Acid	113	501	mg/kg wet	100.0		113	40-140			
Benzyl Alcohol	115	99.9	mg/kg wet	100.0		115	40-140			
bis(2-Chloroethoxy)methane	112	99.9	mg/kg wet	100.0		112	40-140			
bis(2-Chloroethyl)ether	116	99.9	mg/kg wet	100.0		116	40-140			
bis(2-chloroisopropyl)Ether	96.7	99.9	mg/kg wet	100.0		97	40-140			
bis(2-Ethylhexyl)phthalate	122	99.9	mg/kg wet	100.0		122	40-140			
Butylbenzylphthalate	119	99.9	mg/kg wet	100.0		119	40-140			
Carbazole	111	99.9	mg/kg wet	100.0		111	40-140			
Chrysene	121	50.1	mg/kg wet	100.0		121	40-140			
Dibenzo(a,h)Anthracene	107	50.1	mg/kg wet	100.0		107	40-140			
Dibenzofuran	114	99.9	mg/kg wet	100.0		114	40-140			
Diethylphthalate	117	99.9	mg/kg wet	100.0		117	40-140			
Dimethylphthalate	115	99.9	mg/kg wet	100.0		115	40-140			
Di-n-butylphthalate	109	99.9	mg/kg wet	100.0		109	40-140			
Di-n-octylphthalate	114	99.9	mg/kg wet	100.0		114	40-140			
Fluoranthene	113	99.9	mg/kg wet	100.0		113	40-140			
Fluorene	115	99.9	mg/kg wet	100.0		115	40-140			
Hexachlorobenzene	107	50.1	mg/kg wet	100.0		107	40-140			
Hexachlorobutadiene	121	99.9	mg/kg wet	100.0		121	40-140			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Hexachlorocyclopentadiene	ND	501	mg/kg wet	100.0			40-140			B-
Hexachloroethane	99.3	99.9	mg/kg wet	100.0		99	40-140			
Indeno(1,2,3-cd)Pyrene	103	99.9	mg/kg wet	100.0		103	40-140			
Isophorone	105	99.9	mg/kg wet	100.0		105	40-140			
Naphthalene	113	99.9	mg/kg wet	100.0		113	40-140			
Nitrobenzene	116	99.9	mg/kg wet	100.0		116	40-140			
N-Nitrosodimethylamine	98.8	99.9	mg/kg wet	100.0		99	40-140			
N-Nitroso-Di-n-Propylamine	116	99.9	mg/kg wet	100.0		116	40-140			
N-nitrosodiphenylamine	117	99.9	mg/kg wet	100.0		117	40-140			
Pentachlorophenol	96.8	501	mg/kg wet	100.0		97	30-130			
Phenanthrene	107	99.9	mg/kg wet	100.0		107	40-140			
Phenol	116	99.9	mg/kg wet	100.0		116	30-130			
Pyrene	120	99.9	mg/kg wet	100.0		120	40-140			
Pyridine	118	501	mg/kg wet	100.0		118	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*109*		mg/kg wet	*100.0*		*109*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*151*		mg/kg wet	*150.0*		*100*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*175*		mg/kg wet	*150.0*		*117*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*120*		mg/kg wet	*100.0*		*120*	*30-130*			
Surrogate: 2-Fluorophenol	*170*		mg/kg wet	*150.0*		*113*	*30-130*			
Surrogate: Nitrobenzene-d5	*115*		mg/kg wet	*100.0*		*115*	*30-130*			
Surrogate: Phenol-d6	*176*		mg/kg wet	*150.0*		*117*	*30-130*			
Surrogate: p-Terphenyl-d14	*123*		mg/kg wet	*100.0*		*123*	*30-130*			
LCS Dup										
1,1-Biphenyl	117	99.9	mg/kg wet	100.0		117	40-140	3	30	
1,2,4-Trichlorobenzene	115	99.9	mg/kg wet	100.0		115	40-140	2	30	
1,2-Dichlorobenzene	116	99.9	mg/kg wet	100.0		116	40-140	2	30	
1,3-Dichlorobenzene	115	99.9	mg/kg wet	100.0		115	40-140	0.5	30	
1,4-Dichlorobenzene	117	99.9	mg/kg wet	100.0		117	40-140	3	30	
2,3,4,6-Tetrachlorophenol	98.4	501	mg/kg wet	100.0		98	30-130	1	30	
2,4,5-Trichlorophenol	123	99.9	mg/kg wet	100.0		123	30-130	0.2	30	
2,4,6-Trichlorophenol	109	99.9	mg/kg wet	100.0		109	30-130	0.09	30	
2,4-Dichlorophenol	120	99.9	mg/kg wet	100.0		120	30-130	0.8	30	
2,4-Dimethylphenol	116	99.9	mg/kg wet	100.0		116	30-130	0.7	30	
2,4-Dinitrophenol	ND	501	mg/kg wet	100.0			30-130		30	B-
2,4-Dinitrotoluene	109	99.9	mg/kg wet	100.0		109	40-140	2	30	
2,6-Dinitrotoluene	107	99.9	mg/kg wet	100.0		107	40-140	1	30	
2-Chloronaphthalene	108	99.9	mg/kg wet	100.0		108	40-140	2	30	
2-Chlorophenol	110	99.9	mg/kg wet	100.0		110	30-130	0.3	30	
2-Methylnaphthalene	125	99.9	mg/kg wet	100.0		125	40-140	0.5	30	
2-Methylphenol	114	99.9	mg/kg wet	100.0		114	30-130	0.4	30	
2-Nitroaniline	111	99.9	mg/kg wet	100.0		111	40-140	0.6	30	
2-Nitrophenol	109	99.9	mg/kg wet	100.0		109	30-130	2	30	
3,3'-Dichlorobenzidine	115	200	mg/kg wet	100.0		115	40-140	0.5	30	
3+4-Methylphenol	231	200	mg/kg wet	200.0		115	30-130	0.2	30	
3-Nitroaniline	96.4	99.9	mg/kg wet	100.0		96	40-140	2	30	
4,6-Dinitro-2-Methylphenol	67.6	501	mg/kg wet	100.0		68	30-130	2	30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
4-Bromophenyl-phenylether	105	99.9	mg/kg wet	100.0		105	40-140	1	30	
4-Chloro-3-Methylphenol	113	99.9	mg/kg wet	100.0		113	30-130	0.4	30	
4-Chloroaniline	74.9	200	mg/kg wet	100.0		75	40-140	1	30	
4-Chloro-phenyl-phenyl ether	118	99.9	mg/kg wet	100.0		118	40-140	0.2	30	
4-Nitroaniline	109	99.9	mg/kg wet	100.0		109	40-140	0.6	30	
4-Nitrophenol	104	501	mg/kg wet	100.0		104	30-130	3	30	
Acenaphthene	117	99.9	mg/kg wet	100.0		117	40-140	0.3	30	
Acenaphthylene	102	99.9	mg/kg wet	100.0		102	40-140	4	30	
Acetophenone	120	200	mg/kg wet	100.0		120	40-140	0.4	30	
Aniline	74.3	200	mg/kg wet	100.0		74	40-140	1	30	
Anthracene	110	99.9	mg/kg wet	100.0		110	40-140	3	30	
Azobenzene	102	99.9	mg/kg wet	100.0		102	40-140	1	30	
Benzo(a)anthracene	110	99.9	mg/kg wet	100.0		110	40-140	0.8	30	
Benzo(a)pyrene	103	50.1	mg/kg wet	100.0		103	40-140	1	30	
Benzo(b)fluoranthene	89.0	99.9	mg/kg wet	100.0		89	40-140	3	30	
Benzo(g,h,i)perylene	97.9	99.9	mg/kg wet	100.0		98	40-140	0.2	30	
Benzo(k)fluoranthene	106	99.9	mg/kg wet	100.0		106	40-140	2	30	
Benzoic Acid	118	501	mg/kg wet	100.0		118	40-140	5	30	
Benzyl Alcohol	112	99.9	mg/kg wet	100.0		112	40-140	3	30	
bis(2-Chloroethoxy)methane	114	99.9	mg/kg wet	100.0		114	40-140	2	30	
bis(2-Chloroethyl)ether	116	99.9	mg/kg wet	100.0		116	40-140	0.2	30	
bis(2-chloroisopropyl)Ether	94.9	99.9	mg/kg wet	100.0		95	40-140	2	30	
bis(2-Ethylhexyl)phthalate	121	99.9	mg/kg wet	100.0		121	40-140	0.7	30	
Butylbenzylphthalate	116	99.9	mg/kg wet	100.0		116	40-140	2	30	
Carbazole	110	99.9	mg/kg wet	100.0		110	40-140	1	30	
Chrysene	119	50.1	mg/kg wet	100.0		119	40-140	2	30	
Dibenzo(a,h)Anthracene	107	50.1	mg/kg wet	100.0		107	40-140	0.5	30	
Dibenzofuran	114	99.9	mg/kg wet	100.0		114	40-140	0	30	
Diethylphthalate	116	99.9	mg/kg wet	100.0		116	40-140	0.8	30	
Dimethylphthalate	113	99.9	mg/kg wet	100.0		113	40-140	1	30	
Di-n-butylphthalate	105	99.9	mg/kg wet	100.0		105	40-140	3	30	
Di-n-octylphthalate	116	99.9	mg/kg wet	100.0		116	40-140	1	30	
Fluoranthene	109	99.9	mg/kg wet	100.0		109	40-140	3	30	
Fluorene	114	99.9	mg/kg wet	100.0		114	40-140	0.7	30	
Hexachlorobenzene	106	50.1	mg/kg wet	100.0		106	40-140	0.2	30	
Hexachlorobutadiene	123	99.9	mg/kg wet	100.0		123	40-140	2	30	
Hexachlorocyclopentadiene	ND	501	mg/kg wet	100.0			40-140		30	B-
Hexachloroethane	101	99.9	mg/kg wet	100.0		101	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	102	99.9	mg/kg wet	100.0		102	40-140	1	30	
Isophorone	104	99.9	mg/kg wet	100.0		104	40-140	0.6	30	
Naphthalene	114	99.9	mg/kg wet	100.0		114	40-140	0.4	30	
Nitrobenzene	116	99.9	mg/kg wet	100.0		116	40-140	0.5	30	
N-Nitrosodimethylamine	99.8	99.9	mg/kg wet	100.0		100	40-140	1	30	
N-Nitroso-Di-n-Propylamine	114	99.9	mg/kg wet	100.0		114	40-140	2	30	
N-nitrosodiphenylamine	115	99.9	mg/kg wet	100.0		115	40-140	2	30	
Pentachlorophenol	96.9	501	mg/kg wet	100.0		97	30-130	0.1	30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Phenanthrene	107	99.9	mg/kg wet	100.0		107	40-140	0.3	30	
Phenol	118	99.9	mg/kg wet	100.0		118	30-130	1	30	
Pyrene	120	99.9	mg/kg wet	100.0		120	40-140	0.5	30	
Pyridine	116	501	mg/kg wet	100.0		116	40-140	2	30	
Surrogate: 1,2-Dichlorobenzene-d4	*110*		mg/kg wet	*100.0*		*110*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*152*		mg/kg wet	*150.0*		*102*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*174*		mg/kg wet	*150.0*		*116*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*116*		mg/kg wet	*100.0*		*116*	*30-130*			
Surrogate: 2-Fluorophenol	*165*		mg/kg wet	*150.0*		*110*	*30-130*			
Surrogate: Nitrobenzene-d5	*113*		mg/kg wet	*100.0*		*113*	*30-130*			
Surrogate: Phenol-d6	*171*		mg/kg wet	*150.0*		*114*	*30-130*			
Surrogate: p-Terphenyl-d14	*123*		mg/kg wet	*100.0*		*123*	*30-130*			
Duplicate **Source: 0806089-03**										
1,1-Biphenyl	ND	500	mg/kg wet		ND				30	
1,2,4-Trichlorobenzene	ND	500	mg/kg wet		ND				30	
1,2-Dichlorobenzene	ND	500	mg/kg wet		ND				30	
1,3-Dichlorobenzene	ND	500	mg/kg wet		ND				30	
1,4-Dichlorobenzene	ND	500	mg/kg wet		ND				30	
2,3,4,6-Tetrachlorophenol	ND	2500	mg/kg wet		ND				30	
2,4,5-Trichlorophenol	ND	500	mg/kg wet		ND				30	
2,4,6-Trichlorophenol	ND	500	mg/kg wet		ND				30	
2,4-Dichlorophenol	ND	500	mg/kg wet		ND				30	
2,4-Dimethylphenol	ND	500	mg/kg wet		ND				30	
2,4-Dinitrophenol	ND	2500	mg/kg wet		ND				30	
2,4-Dinitrotoluene	ND	500	mg/kg wet		ND				30	
2,6-Dinitrotoluene	ND	500	mg/kg wet		ND				30	
2-Chloronaphthalene	ND	500	mg/kg wet		ND				30	
2-Chlorophenol	ND	500	mg/kg wet		ND				30	
2-Methylnaphthalene	ND	500	mg/kg wet		137			200	30	D+
2-Methylphenol	ND	500	mg/kg wet		ND				30	
2-Nitroaniline	ND	500	mg/kg wet		ND				30	
2-Nitrophenol	ND	500	mg/kg wet		ND				30	
3,3'-Dichlorobenzidine	ND	1000	mg/kg wet		ND				30	
3+4-Methylphenol	ND	1000	mg/kg wet		ND				30	
3-Nitroaniline	ND	500	mg/kg wet		ND				30	
4,6-Dinitro-2-Methylphenol	ND	2500	mg/kg wet		ND				30	
4-Bromophenyl-phenylether	ND	500	mg/kg wet		ND				30	
4-Chloro-3-Methylphenol	ND	500	mg/kg wet		ND				30	
4-Chloroaniline	ND	1000	mg/kg wet		ND				30	
4-Chloro-phenyl-phenyl ether	ND	500	mg/kg wet		ND				30	
4-Nitroaniline	ND	500	mg/kg wet		ND				30	
4-Nitrophenol	ND	2500	mg/kg wet		ND				30	
Acenaphthene	ND	500	mg/kg wet		ND				30	
Acenaphthylene	ND	500	mg/kg wet		ND				30	
Acetophenone	ND	1000	mg/kg wet		ND				30	
Aniline	ND	1000	mg/kg wet		ND				30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Anthracene	ND	500	mg/kg wet		ND				30	
Azobenzene	ND	500	mg/kg wet		ND				30	
Benzo(a)anthracene	ND	500	mg/kg wet		ND				30	
Benzo(a)pyrene	ND	250	mg/kg wet		ND				30	
Benzo(b)fluoranthene	ND	500	mg/kg wet		ND				30	
Benzo(g,h,i)perylene	ND	500	mg/kg wet		ND				30	
Benzo(k)fluoranthene	ND	500	mg/kg wet		ND				30	
Benzoic Acid	ND	2500	mg/kg wet		ND				30	
Benzyl Alcohol	ND	500	mg/kg wet		ND				30	
bis(2-Chloroethoxy)methane	ND	500	mg/kg wet		ND				30	
bis(2-Chloroethyl)ether	ND	500	mg/kg wet		ND				30	
bis(2-chloroisopropyl)Ether	ND	500	mg/kg wet		ND				30	
bis(2-Ethylhexyl)phthalate	2250	500	mg/kg wet		2530			12	30	
Butylbenzylphthalate	ND	500	mg/kg wet		ND				30	
Carbazole	ND	500	mg/kg wet		ND				30	
Chrysene	ND	250	mg/kg wet		ND				30	
Dibenzo(a,h)Anthracene	ND	250	mg/kg wet		ND				30	
Dibenzofuran	ND	500	mg/kg wet		ND				30	
Diethylphthalate	ND	500	mg/kg wet		ND				30	
Dimethylphthalate	ND	500	mg/kg wet		ND				30	
Di-n-butylphthalate	ND	500	mg/kg wet		ND				30	
Di-n-octylphthalate	245	500	mg/kg wet		250			2	30	
Fluoranthene	ND	500	mg/kg wet		ND				30	
Fluorene	ND	500	mg/kg wet		ND				30	
Hexachlorobenzene	ND	250	mg/kg wet		ND				30	
Hexachlorobutadiene	ND	500	mg/kg wet		ND				30	
Hexachlorocyclopentadiene	ND	2500	mg/kg wet		ND				30	
Hexachloroethane	ND	500	mg/kg wet		ND				30	
Indeno(1,2,3-cd)Pyrene	ND	500	mg/kg wet		ND				30	
Isophorone	ND	500	mg/kg wet		ND				30	
Naphthalene	658	500	mg/kg wet		778			17	30	
Nitrobenzene	ND	500	mg/kg wet		ND				30	
N-Nitrosodimethylamine	ND	500	mg/kg wet		ND				30	
N-Nitroso-Di-n-Propylamine	ND	500	mg/kg wet		ND				30	
N-nitrosodiphenylamine	ND	500	mg/kg wet		ND				30	
Pentachlorophenol	ND	2500	mg/kg wet		ND				30	
Phenanthrene	ND	500	mg/kg wet		ND				30	
Phenol	ND	500	mg/kg wet		ND				30	
Pyrene	ND	500	mg/kg wet		ND				30	
Pyridine	ND	2500	mg/kg wet		ND				30	
Surrogate: 1,2-Dichlorobenzene-d4	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Surrogate: 2,4,6-Tribromophenol	*130*		mg/kg wet	*150.0*		*87*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*140*		mg/kg wet	*150.0*		*94*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Surrogate: 2-Fluorophenol	*214*		mg/kg wet	*150.0*		*143*	*30-130*			*SM*
Surrogate: Nitrobenzene-d5	*213*		mg/kg wet	*100.0*		*213*	*30-130*			*SM*

Appendix C

Certificates of Analysis
Groundwater Samples

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

Jill Parrett
EA Engineering, Science, and Technology
2350 Post Road
Warwick, RI 02886

RE: Truck Away
ESS Laboratory Work Order Number: 0806089

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 Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. 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 mailed. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Date: June 13, 2008

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 may be used instead of automated integration because it produces more accurate results. All ICP Metals were analyzed using the established linear dynamic range to determine acceptable analytical results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.

Sample Receipt
The following sample(s) were received on June 06, 2008 for the analyses specified on the enclosed Chain of Custody Record.

Laboratory ID	Matrix	Client SampleID
0806089-01	Ground Water	MWEA-2
0806089-02	Ground Water	MWEA-1
0806089-03	Oil	MW-3
0806089-04	Ground Water	MW-8
0806089-05	Ground Water	MW-1
0806089-06	Ground Water	MW-6
0806089-07	Ground Water	MW-5
0806089-08	Ground Water	MW-7
0806089-09	Aqueous	Trip Blank

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

0806089-03	**Surrogate recovery(ies) diluted below the MRL.**
BF81003-BSD1	**Blank Spike recovery is above upper control limit.** 2-Butanone, Acetone, Vinyl Chloride

8081A Organochlorine Pesticides

0806089-03	**Percent difference between primary and confirmation results exceeds 40%.** 4,4´-DDD, alpha-Chlordane, beta-BHC, delta-BHC, gamma-Chlordane, Heptachlor Epoxide, Hexachlorobenzene
0806089-03	**Surrogate recovery(ies) diluted below the MRL.**
BF81021-DUP1	**Surrogate recovery(ies) diluted below the MRL.**
BF81021-MS1	**Matrix Spike is diluted below the MRL.**
BF81021-MS1	**Surrogate recovery(ies) diluted below the MRL.**

8082 Polychlorinated Biphenyls (PCB)

0806089-03	**Percent difference between primary and confirmation results exceeds 40%.** Aroclor 1260
0806089-03	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80629-DUP1	**Percent difference between primary and confirmation results exceeds 40%.** Aroclor 1260
BF80629-DUP1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80629-MS1	**Matrix Spike recovery is above upper control limit.** Aroclor 1016
BF80629-MS1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**

8260B Volatile Organic Compounds

0806089-02	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
0806089-06	**Reported above the quantitation limit; Estimated value.** 1,4-Dioxane - Screen

8270C Semi-Volatile Organic Compounds

0806089-03	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80634-BS1	**Blank Spike recovery is below lower control limit.** 2,4-Dinitrophenol, Hexachlorocyclopentadiene
BF80634-BSD1	**Blank Spike recovery is below lower control limit.** 2,4-Dinitrophenol, Hexachlorocyclopentadiene
BF80634-DUP1	**Relative percent difference for duplicate is outside of criteria.** 2-Methylnaphthalene
BF80634-DUP1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80634-MS1	**Majority of matrix spike compounds are outside of criteria due to matrix interferences.**
BF80634-MS1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BRD0277-CCV1	**Continuing Calibration recovery is below lower control limit.** Hexachlorocyclopentadiene
BRF0081-CCV1	**Continuing Calibration recovery is below lower control limit.** 2-Methylnaphthalene

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MWEA-2
Date Sampled: 06/05/08 09:37
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane	ND	mg/L	0.0010	0.2	1	06/06/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,1-Dichloroethane	**0.0019**	mg/L	0.0010		1	06/06/08
1,1-Dichloroethene	ND	mg/L	0.0010	0.007	1	06/06/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	06/06/08
1,2,4-Trimethylbenzene	**0.0297**	mg/L	0.0010		1	06/06/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	06/06/08
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	06/06/08
1,2-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/06/08
1,2-Dichloroethane	**0.0013**	mg/L	0.0010	0.005	1	06/06/08
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	06/06/08
1,3,5-Trimethylbenzene	**0.0081**	mg/L	0.0010		1	06/06/08
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/06/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene	**0.0061**	mg/L	0.0010	0.075	1	06/06/08
1,4-Dioxane - Screen	ND	mg/L	0.500		1	06/06/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
2-Butanone	ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
2-Hexanone	ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene	ND	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/06/08
Acetone	ND	mg/L	0.0250		1	06/06/08
Benzene	**0.0376**	mg/L	0.0010	0.005	1	06/06/08
Bromobenzene	ND	mg/L	0.0020		1	06/06/08
Bromochloromethane	ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/06/08
Bromoform	ND	mg/L	0.0010		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MWEA-2
Date Sampled: 06/05/08 09:37
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	*0.005*	1	06/06/08
Chlorobenzene	**0.0384**	mg/L	0.0010	0.1	1	06/06/08
Chloroethane	**1.76**	mg/L	0.0400		20	06/10/08
Chloroform	ND	mg/L	0.0010		1	06/06/08
Chloromethane	ND	mg/L	0.0020		1	06/06/08
cis-1,2-Dichloroethene	**0.0011**	mg/L	0.0010	0.07	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/06/08
Dibromomethane	ND	mg/L	0.0010		1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/06/08
Diethyl Ether	**0.0117**	mg/L	0.0010		1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/06/08
Ethylbenzene	**0.0236**	mg/L	0.0010	0.7	1	06/06/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/06/08
Hexachloroethane	ND	mg/L	0.0010		1	06/06/08
Isopropylbenzene	**0.0036**	mg/L	0.0010		1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/06/08
Methylene Chloride	**0.0046**	mg/L	0.0040	0.005	1	06/06/08
Naphthalene	**0.0216**	mg/L	0.0010	0.02	1	06/06/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
n-Propylbenzene	**0.0034**	mg/L	0.0010		1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Styrene	ND	mg/L	0.0010	0.1	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Tetrahydrofuran	**0.0052**	mg/L	0.0050		1	06/06/08
Toluene	**0.0126**	mg/L	0.0010	1	1	06/06/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Trichloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MWEA-2
Date Sampled: 06/05/08 09:37
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-01
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	ND	mg/L	0.0010	0.002	1	06/06/08
Xylene O	**0.0061**	mg/L	0.0010	10	1	06/06/08
Xylene P,M	**0.237**	mg/L	0.0400	10	20	06/10/08
Xylenes (Total)	**0.243**	mg/L	0.0410	10	20	06/10/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*104 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MWEA-1
Date Sampled: 06/05/08 09:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane	**0.0243**	mg/L	0.0010	0.2	1	06/06/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,1-Dichloroethane	**0.128**	mg/L	0.100		100	06/10/08
1,1-Dichloroethene	ND	mg/L	0.0010	0.007	1	06/06/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	06/06/08
1,2,4-Trimethylbenzene	**0.684**	mg/L	0.100		100	06/10/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	06/06/08
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	06/06/08
1,2-Dichlorobenzene	**0.0014**	mg/L	0.0010	0.6	1	06/06/08
1,2-Dichloroethane	**0.0019**	mg/L	0.0010	0.005	1	06/06/08
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	06/06/08
1,3,5-Trimethylbenzene	**0.175**	mg/L	0.100		100	06/10/08
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/06/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene	**0.0139**	mg/L	0.0010	0.075	1	06/06/08
1,4-Dioxane - Screen	ND	mg/L	0.500		1	06/06/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
2-Butanone	ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
2-Hexanone	ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene	**0.0100**	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/06/08
Acetone	ND	mg/L	0.0250		1	06/06/08
Benzene	**0.0276**	mg/L	0.0010	0.005	1	06/06/08
Bromobenzene	ND	mg/L	0.0020		1	06/06/08
Bromochloromethane	ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/06/08
Bromoform	ND	mg/L	0.0010		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MWEA-1
Date Sampled: 06/05/08 09:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	06/06/08
Chlorobenzene	**0.0276**	mg/L	0.0010	0.1	1	06/06/08
Chloroethane	**4.89**	mg/L	0.200		100	06/10/08
Chloroform	ND	mg/L	0.0010		1	06/06/08
Chloromethane	ND	mg/L	0.0020		1	06/06/08
cis-1,2-Dichloroethene	**0.0029**	mg/L	0.0010	0.07	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/06/08
Dibromomethane	ND	mg/L	0.0010		1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/06/08
Diethyl Ether	**0.0131**	mg/L	0.0010		1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/06/08
Ethylbenzene	**0.0665**	mg/L	0.0010	0.7	1	06/06/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/06/08
Hexachloroethane	ND	mg/L	0.0010		1	06/06/08
Isopropylbenzene	**0.0455**	mg/L	0.0010		1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/06/08
Methylene Chloride	**0.0069**	mg/L	0.0040	0.005	1	06/06/08
Naphthalene	**0.143**	mg/L	0.100	0.02	100	06/10/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
n-Propylbenzene	**0.0641**	mg/L	0.0010		1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Styrene	**0.0020**	mg/L	0.0010	0.1	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Tetrahydrofuran	**0.0149**	mg/L	0.0050		1	06/06/08
Toluene	**1.25**	mg/L	0.100	1	100	06/10/08
trans-1,2-Dichloroethene	**0.0014**	mg/L	0.0010	0.1	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Trichloroethene	**0.0011**	mg/L	0.0010	0.005	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MWEA-1
Date Sampled: 06/05/08 09:50
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-02
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	**0.0016**	mg/L	0.0010	0.002	1	06/06/08
Xylene O	**0.0741**	mg/L	0.0010	10	1	06/06/08
Xylene P,M	**0.122**	mg/L	0.0020	10	1	06/06/08
Xylenes (Total)	**0.196**	mg/L	0.0030	10	1	06/06/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*172 %*	*SM*	*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-8
Date Sampled: 06/05/08 12:18
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-04
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane	ND	mg/L	0.0010	0.2	1	06/06/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,1-Dichloroethane	ND	mg/L	0.0010		1	06/06/08
1,1-Dichloroethene	ND	mg/L	0.0010	0.007	1	06/06/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene	ND	mg/L	0.0010	0.07	1	06/06/08
1,2,4-Trimethylbenzene	**0.0395**	mg/L	0.0010		1	06/06/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	06/06/08
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	06/06/08
1,2-Dichlorobenzene	**0.0015**	mg/L	0.0010	0.6	1	06/06/08
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	06/06/08
1,3,5-Trimethylbenzene	**0.0088**	mg/L	0.0010		1	06/06/08
1,3-Dichlorobenzene	ND	mg/L	0.0010	0.6	1	06/06/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene	**0.0076**	mg/L	0.0010	0.075	1	06/06/08
1,4-Dioxane - Screen	ND	mg/L	0.500		1	06/06/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
2-Butanone	ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
2-Hexanone	ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene	**0.0016**	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/06/08
Acetone	ND	mg/L	0.0250		1	06/06/08
Benzene	**0.0198**	mg/L	0.0010	0.005	1	06/06/08
Bromobenzene	ND	mg/L	0.0020		1	06/06/08
Bromochloromethane	ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/06/08
Bromoform	ND	mg/L	0.0010		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-8
Date Sampled: 06/05/08 12:18
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-04
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	06/06/08
Chlorobenzene	**0.0308**	mg/L	0.0010	0.1	1	06/06/08
Chloroethane	**0.252**	mg/L	0.0200		10	06/10/08
Chloroform	ND	mg/L	0.0010		1	06/06/08
Chloromethane	ND	mg/L	0.0020		1	06/06/08
cis-1,2-Dichloroethene	ND	mg/L	0.0010	0.07	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/06/08
Dibromomethane	ND	mg/L	0.0010		1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/06/08
Diethyl Ether	**0.0048**	mg/L	0.0010		1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/06/08
Ethylbenzene	**0.117**	mg/L	0.0100	0.7	10	06/10/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/06/08
Hexachloroethane	ND	mg/L	0.0010		1	06/06/08
Isopropylbenzene	**0.0089**	mg/L	0.0010		1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/06/08
Methylene Chloride	ND	mg/L	0.0040	0.005	1	06/06/08
Naphthalene	**0.0940**	mg/L	0.0010	0.02	1	06/06/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
n-Propylbenzene	**0.0065**	mg/L	0.0010		1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Styrene	ND	mg/L	0.0010	0.1	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Tetrahydrofuran	**0.0107**	mg/L	0.0050		1	06/06/08
Toluene	**0.0040**	mg/L	0.0010	1	1	06/06/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Trichloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-8
Date Sampled: 06/05/08 12:18
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-04
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	ND	mg/L	0.0010	0.002	1	06/06/08
Xylene O	**0.0712**	mg/L	0.0010	10	1	06/06/08
Xylene P,M	**1.38**	mg/L	0.0200	10	10	06/10/08
Xylenes (Total)	**1.46**	mg/L	0.0210	10	10	06/10/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*99 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*103 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-1
Date Sampled: 06/05/08 12:20
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-05
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane	ND	mg/L	0.0010	0.2	1	06/06/08
1,1,2,2-Tetrachloroethane	ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,1-Dichloroethane	**0.0112**	mg/L	0.0010		1	06/06/08
1,1-Dichloroethene	**0.0012**	mg/L	0.0010	0.007	1	06/06/08
1,1-Dichloropropene	ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene	ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane	ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene	**0.0010**	mg/L	0.0010	0.07	1	06/06/08
1,2,4-Trimethylbenzene	**0.0164**	mg/L	0.0010		1	06/06/08
1,2-Dibromo-3-Chloropropane	ND	mg/L	0.0050	0.0002	1	06/06/08
1,2-Dibromoethane	ND	mg/L	0.0010	0.00005	1	06/06/08
1,2-Dichlorobenzene	**0.0331**	mg/L	0.0010	0.6	1	06/06/08
1,2-Dichloroethane	ND	mg/L	0.0010	0.005	1	06/06/08
1,2-Dichloropropane	ND	mg/L	0.0010	0.005	1	06/06/08
1,3,5-Trimethylbenzene	**0.0042**	mg/L	0.0010		1	06/06/08
1,3-Dichlorobenzene	**0.0043**	mg/L	0.0010	0.6	1	06/06/08
1,3-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene	**0.0212**	mg/L	0.0010	0.075	1	06/06/08
1,4-Dioxane - Screen	ND	mg/L	0.500		1	06/06/08
1-Chlorohexane	ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane	ND	mg/L	0.0010		1	06/06/08
2-Butanone	ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
2-Hexanone	ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene	ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene	**0.0011**	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone	ND	mg/L	0.0250		1	06/06/08
Acetone	ND	mg/L	0.0250		1	06/06/08
Benzene	**0.0154**	mg/L	0.0010	0.005	1	06/06/08
Bromobenzene	ND	mg/L	0.0020		1	06/06/08
Bromochloromethane	ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane	ND	mg/L	0.0006		1	06/06/08
Bromoform	ND	mg/L	0.0010		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-1
Date Sampled: 06/05/08 12:20
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-05
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Bromomethane	ND	mg/L	0.0020		1	06/06/08
Carbon Disulfide	ND	mg/L	0.0010		1	06/06/08
Carbon Tetrachloride	ND	mg/L	0.0010	0.005	1	06/06/08
Chlorobenzene	**0.196**	mg/L	0.0200	0.1	20	06/10/08
Chloroethane	**1.38**	mg/L	0.0400		20	06/10/08
Chloroform	ND	mg/L	0.0010		1	06/06/08
Chloromethane	ND	mg/L	0.0020		1	06/06/08
cis-1,2-Dichloroethene	**0.0402**	mg/L	0.0010	0.07	1	06/06/08
cis-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Dibromochloromethane	ND	mg/L	0.0010		1	06/06/08
Dibromomethane	ND	mg/L	0.0010		1	06/06/08
Dichlorodifluoromethane	ND	mg/L	0.0020		1	06/06/08
Diethyl Ether	**0.0333**	mg/L	0.0010		1	06/06/08
Di-isopropyl ether	ND	mg/L	0.0010		1	06/06/08
Ethyl tertiary-butyl ether	ND	mg/L	0.0010		1	06/06/08
Ethylbenzene	**0.0133**	mg/L	0.0010	0.7	1	06/06/08
Hexachlorobutadiene	ND	mg/L	0.0006		1	06/06/08
Hexachloroethane	ND	mg/L	0.0010		1	06/06/08
Isopropylbenzene	**0.0048**	mg/L	0.0010		1	06/06/08
Methyl tert-Butyl Ether	ND	mg/L	0.0010	0.04	1	06/06/08
Methylene Chloride	ND	mg/L	0.0040	0.005	1	06/06/08
Naphthalene	**0.0231**	mg/L	0.0010	0.02	1	06/06/08
n-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
n-Propylbenzene	**0.0033**	mg/L	0.0010		1	06/06/08
sec-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Styrene	ND	mg/L	0.0010	0.1	1	06/06/08
tert-Butylbenzene	ND	mg/L	0.0010		1	06/06/08
Tertiary-amyl methyl ether	ND	mg/L	0.0010		1	06/06/08
Tetrachloroethene	ND	mg/L	0.0010	0.005	1	06/06/08
Tetrahydrofuran	**0.0065**	mg/L	0.0050		1	06/06/08
Toluene	**0.0022**	mg/L	0.0010	1	1	06/06/08
trans-1,2-Dichloroethene	ND	mg/L	0.0010	0.1	1	06/06/08
trans-1,3-Dichloropropene	ND	mg/L	0.0004		1	06/06/08
Trichloroethene	**0.0139**	mg/L	0.0010	0.005	1	06/06/08
Trichlorofluoromethane	ND	mg/L	0.0010		1	06/06/08
Vinyl Acetate	ND	mg/L	0.0050		1	06/06/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-1
Date Sampled: 06/05/08 12:20
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-05
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Vinyl Chloride	**0.0130**	mg/L	0.0010	0.002	1	06/06/08
Xylene O	**0.0106**	mg/L	0.0010	10	1	06/06/08
Xylene P,M	**0.428**	mg/L	0.0400	10	20	06/10/08
Xylenes (Total)	**0.438**	mg/L	0.0410	10	20	06/10/08
Trihalomethanes (Total)	ND	mg/L	0.0036	0.1		06/06/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*102 %*		*70-130*
Surrogate: Dibromofluoromethane	*103 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-6
Date Sampled: 06/05/08 14:42
Percent Solids: N/A
Initial Volume: 10
Final Volume: 10
Extraction Method: 5030B

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-06
Sample Matrix: Ground Water
Analyst: MD

8260B Volatile Organic Compounds

Analyte		Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane		ND	mg/L	0.0010		1	06/06/08
1,1,1-Trichloroethane		ND	mg/L	0.0010	0.2	1	06/06/08
1,1,2,2-Tetrachloroethane		ND	mg/L	0.0005		1	06/06/08
1,1,2-Trichloroethane		ND	mg/L	0.0010	0.005	1	06/06/08
1,1-Dichloroethane		ND	mg/L	0.0010		1	06/06/08
1,1-Dichloroethene		ND	mg/L	0.0010	0.007	1	06/06/08
1,1-Dichloropropene		ND	mg/L	0.0020		1	06/06/08
1,2,3-Trichlorobenzene		ND	mg/L	0.0010		1	06/06/08
1,2,3-Trichloropropane		ND	mg/L	0.0010		1	06/06/08
1,2,4-Trichlorobenzene		ND	mg/L	0.0010	0.07	1	06/06/08
1,2,4-Trimethylbenzene		**0.0428**	mg/L	0.0010		1	06/06/08
1,2-Dibromo-3-Chloropropane		ND	mg/L	0.0050	0.0002	1	06/06/08
1,2-Dibromoethane		ND	mg/L	0.0010	0.00005	1	06/06/08
1,2-Dichlorobenzene		ND	mg/L	0.0010	0.6	1	06/06/08
1,2-Dichloroethane		ND	mg/L	0.0010	0.005	1	06/06/08
1,2-Dichloropropane		ND	mg/L	0.0010	0.005	1	06/06/08
1,3,5-Trimethylbenzene		**0.0011**	mg/L	0.0010		1	06/06/08
1,3-Dichlorobenzene		ND	mg/L	0.0010	0.6	1	06/06/08
1,3-Dichloropropane		ND	mg/L	0.0010		1	06/06/08
1,4-Dichlorobenzene		**0.0098**	mg/L	0.0010	0.075	1	06/06/08
1,4-Dioxane - Screen	E	**6.72**	mg/L	0.500		1	06/06/08
1-Chlorohexane		ND	mg/L	0.0010		1	06/06/08
2,2-Dichloropropane		ND	mg/L	0.0010		1	06/06/08
2-Butanone		ND	mg/L	0.0250		1	06/06/08
2-Chlorotoluene		ND	mg/L	0.0010		1	06/06/08
2-Hexanone		ND	mg/L	0.0100		1	06/06/08
4-Chlorotoluene		ND	mg/L	0.0010		1	06/06/08
4-Isopropyltoluene		ND	mg/L	0.0010		1	06/06/08
4-Methyl-2-Pentanone		ND	mg/L	0.0250		1	06/06/08
Acetone		ND	mg/L	0.0250		1	06/06/08
Benzene		**0.0086**	mg/L	0.0010	0.005	1	06/06/08
Bromobenzene		ND	mg/L	0.0020		1	06/06/08
Bromochloromethane		ND	mg/L	0.0010		1	06/06/08
Bromodichloromethane		ND	mg/L	0.0006		1	06/06/08
Bromoform		ND	mg/L	0.0010		1	06/06/08

Appendix D

Certificates of Analysis
Free-Product Samples

ESS Laboratory

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

Jill Parrett
EA Engineering, Science, and Technology
2350 Post Road
Warwick, RI 02886

RE: Truck Away
ESS Laboratory Work Order Number: 0806089

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 Project Narrative, the entire report has been paginated. The ESS Laboratory Certifications sheet is the final report page. 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 mailed. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

Date: June 13, 2008

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 may be used instead of automated integration because it produces more accurate results. All ICP Metals were analyzed using the established linear dynamic range to determine acceptable analytical results.

ESS Laboratory certifies that the test results meet the requirements of NELAC, except where noted within this project narrative.

Sample Receipt
The following sample(s) were received on June 06, 2008 for the analyses specified on the enclosed Chain of Custody Record.

Laboratory ID	Matrix	Client SampleID
0806089-01	Ground Water	MWEA-2
0806089-02	Ground Water	MWEA-1
0806089-03	Oil	MW-3
0806089-04	Ground Water	MW-8
0806089-05	Ground Water	MW-1
0806089-06	Ground Water	MW-6
0806089-07	Ground Water	MW-5
0806089-08	Ground Water	MW-7
0806089-09	Aqueous	Trip Blank

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

0806089-03	**Surrogate recovery(ies) diluted below the MRL.**
BF81003-BSD1	**Blank Spike recovery is above upper control limit.** 2-Butanone, Acetone, Vinyl Chloride

8081A Organochlorine Pesticides

0806089-03	**Percent difference between primary and confirmation results exceeds 40%.** 4,4'-DDD, alpha-Chlordane, beta-BHC, delta-BHC, gamma-Chlordane, Heptachlor Epoxide, Hexachlorobenzene
0806089-03	**Surrogate recovery(ies) diluted below the MRL.**
BF81021-DUP1	**Surrogate recovery(ies) diluted below the MRL.**
BF81021-MS1	**Matrix Spike is diluted below the MRL.**
BF81021-MS1	**Surrogate recovery(ies) diluted below the MRL.**

8082 Polychlorinated Biphenyls (PCB)

0806089-03	**Percent difference between primary and confirmation results exceeds 40%.** Aroclor 1260
0806089-03	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80629-DUP1	**Percent difference between primary and confirmation results exceeds 40%.** Aroclor 1260
BF80629-DUP1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80629-MS1	**Matrix Spike recovery is above upper control limit.** Aroclor 1016
BF80629-MS1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**

8260B Volatile Organic Compounds

0806089-02	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
0806089-06	**Reported above the quantitation limit; Estimated value.** 1,4-Dioxane - Screen

8270C Semi-Volatile Organic Compounds

0806089-03	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80634-BS1	**Blank Spike recovery is below lower control limit.** 2,4-Dinitrophenol, Hexachlorocyclopentadiene
BF80634-BSD1	**Blank Spike recovery is below lower control limit.** 2,4-Dinitrophenol, Hexachlorocyclopentadiene
BF80634-DUP1	**Relative percent difference for duplicate is outside of criteria.** 2-Methylnaphthalene
BF80634-DUP1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BF80634-MS1	**Majority of matrix spike compounds are outside of criteria due to matrix interferences.**
BF80634-MS1	**Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).**
BRD0277-CCV1	**Continuing Calibration recovery is below lower control limit.** Hexachlorocyclopentadiene
BRF0081-CCV1	**Continuing Calibration recovery is below lower control limit.** 2-Methylnaphthalene

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: RES

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results	Units	MRL	MDL	RI - GA Limit	DF	Analyzed
1,1,1,2-Tetrachloroethane	ND	mg/kg wet	50.0	16.5		50	06/10/08
1,1,1-Trichloroethane	**38.5**	mg/kg wet	25.0	6.50		50	06/10/08
1,1,2,2-Tetrachloroethane	ND	mg/kg wet	25.0	7.50		50	06/10/08
1,1,2-Trichloroethane	ND	mg/kg wet	25.0	8.00		50	06/10/08
1,1-Dichloroethane	**20.0**	mg/kg wet	25.0	7.00		50	06/10/08
1,1-Dichloroethene	ND	mg/kg wet	25.0	6.00		50	06/10/08
1,1-Dichloropropene	ND	mg/kg wet	25.0	6.50		50	06/10/08
1,2,3-Trichlorobenzene	ND	mg/kg wet	25.0	7.50		50	06/10/08
1,2,3-Trichloropropane	ND	mg/kg wet	25.0	7.50		50	06/10/08
1,2,4-Trichlorobenzene	ND	mg/kg wet	25.0	5.50		50	06/10/08
1,2,4-Trimethylbenzene	**4520**	mg/kg wet	25.0	6.00		50	06/10/08
1,2-Dibromo-3-Chloropropane	ND	mg/kg wet	150	50.0		50	06/10/08
1,2-Dibromoethane	ND	mg/kg wet	25.0	5.50		50	06/10/08
1,2-Dichlorobenzene	ND	mg/kg wet	25.0	5.50		50	06/10/08
1,2-Dichloroethane	ND	mg/kg wet	25.0	5.50		50	06/10/08
1,2-Dichloropropane	ND	mg/kg wet	25.0	7.00		50	06/10/08
1,3,5-Trimethylbenzene	**1420**	mg/kg wet	25.0	6.50		50	06/10/08
1,3-Dichlorobenzene	ND	mg/kg wet	25.0	6.00		50	06/10/08
1,3-Dichloropropane	ND	mg/kg wet	25.0	5.00		50	06/10/08
1,4-Dichlorobenzene	ND	mg/kg wet	25.0	6.50		50	06/10/08
1,4-Dioxane - Screen	ND	mg/kg wet	2500	1250		50	06/10/08
1-Chlorohexane	ND	mg/kg wet	25.0	6.50		50	06/10/08
2,2-Dichloropropane	ND	mg/kg wet	50.0	12.5		50	06/10/08
2-Butanone	ND	mg/kg wet	625	125		50	06/10/08
2-Chlorotoluene	ND	mg/kg wet	25.0	7.50		50	06/10/08
2-Hexanone	ND	mg/kg wet	250	35.0		50	06/10/08
4-Chlorotoluene	ND	mg/kg wet	25.0	6.00		50	06/10/08
4-Isopropyltoluene	**354**	mg/kg wet	25.0	6.50		50	06/10/08
4-Methyl-2-Pentanone	ND	mg/kg wet	250	35.0		50	06/10/08
Acetone	ND	mg/kg wet	625	200		50	06/10/08
Benzene	ND	mg/kg wet	25.0	7.50		50	06/10/08
Bromobenzene	ND	mg/kg wet	25.0	5.50		50	06/10/08
Bromochloromethane	ND	mg/kg wet	25.0	7.50		50	06/10/08
Bromodichloromethane	ND	mg/kg wet	25.0	7.00		50	06/10/08
Bromoform	ND	mg/kg wet	25.0	8.00		50	06/10/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: RES

5035/8260B Volatile Organic Compounds / Methanol

Bromomethane	ND	mg/kg wet	50.0	12.5	50	06/10/08
Carbon Disulfide	ND	mg/kg wet	25.0	6.00	50	06/10/08
Carbon Tetrachloride	ND	mg/kg wet	25.0	7.00	50	06/10/08
Chlorobenzene	ND	mg/kg wet	25.0	5.50	50	06/10/08
Chloroethane	**110**	mg/kg wet	50.0	16.5	50	06/10/08
Chloroform	ND	mg/kg wet	25.0	6.00	50	06/10/08
Chloromethane	ND	mg/kg wet	50.0	8.00	50	06/10/08
cis-1,2-Dichloroethene	ND	mg/kg wet	25.0	7.50	50	06/10/08
cis-1,3-Dichloropropene	ND	mg/kg wet	25.0	5.50	50	06/10/08
Dibromochloromethane	ND	mg/kg wet	25.0	5.00	50	06/10/08
Dibromomethane	ND	mg/kg wet	25.0	7.50	50	06/10/08
Dichlorodifluoromethane	ND	mg/kg wet	25.0	6.00	50	06/10/08
Diethyl Ether	ND	mg/kg wet	25.0	7.50	50	06/10/08
Di-isopropyl ether	ND	mg/kg wet	25.0	6.00	50	06/10/08
Ethyl tertiary-butyl ether	ND	mg/kg wet	25.0	5.00	50	06/10/08
Ethylbenzene	**12700**	mg/kg wet	250	60.0	500	06/11/08
Hexachlorobutadiene	ND	mg/kg wet	25.0	8.00	50	06/10/08
Isopropylbenzene	**334**	mg/kg wet	25.0	5.50	50	06/10/08
Methyl tert-Butyl Ether	ND	mg/kg wet	25.0	6.00	50	06/10/08
Methylene Chloride	ND	mg/kg wet	125	10.0	50	06/10/08
Naphthalene	**942**	mg/kg wet	25.0	7.50	50	06/10/08
n-Butylbenzene	ND	mg/kg wet	25.0	6.00	50	06/10/08
n-Propylbenzene	**660**	mg/kg wet	25.0	6.50	50	06/10/08
sec-Butylbenzene	**470**	mg/kg wet	25.0	6.50	50	06/10/08
Styrene	ND	mg/kg wet	25.0	6.50	50	06/10/08
tert-Butylbenzene	ND	mg/kg wet	25.0	6.00	50	06/10/08
Tertiary-amyl methyl ether	ND	mg/kg wet	25.0	7.50	50	06/10/08
Tetrachloroethene	ND	mg/kg wet	25.0	8.00	50	06/10/08
Tetrahydrofuran	ND	mg/kg wet	250	65.0	50	06/10/08
Toluene	**1130**	mg/kg wet	25.0	7.00	50	06/10/08
trans-1,2-Dichloroethene	ND	mg/kg wet	25.0	8.00	50	06/10/08
trans-1,3-Dichloropropene	ND	mg/kg wet	25.0	6.00	50	06/10/08
Trichloroethene	ND	mg/kg wet	25.0	6.00	50	06/10/08
Trichlorofluoromethane	ND	mg/kg wet	25.0	7.00	50	06/10/08
Vinyl Acetate	ND	mg/kg wet	125	10.0	50	06/10/08
Vinyl Chloride	ND	mg/kg wet	25.0	6.00	50	06/10/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: RES

5035/8260B Volatile Organic Compounds / Methanol

Xylene O	**10900**	mg/kg wet	250	50.0	500	06/11/08
Xylene P,M	**43400**	mg/kg wet	500	125	500	06/11/08
Xylenes (Total)	**54300**	mg/kg wet	750		500	06/11/08

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*%*	*SD*	*70-130*
Surrogate: 4-Bromofluorobenzene	*129 %*	*SD*	*70-130*
Surrogate: Dibromofluoromethane	*%*	*SD*	*70-130*
Surrogate: Toluene-d8	*135 %*	*SD*	*70-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 5
Extraction Method: 3580A

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: IBM
Prepared: 06/10/08

8081A Organochlorine Pesticides

Analyte		Results	Units	MRL	RI - GA Limit	DF	Analyzed
4,4'-DDD	P	**1.24**	mg/kg wet	0.500		10	06/10/08
4,4'-DDE		ND	mg/kg wet	0.500		10	06/10/08
4,4'-DDT		ND	mg/kg wet	0.500		10	06/10/08
Aldrin		ND	mg/kg wet	0.500		10	06/10/08
alpha-BHC		ND	mg/kg wet	0.500		10	06/10/08
alpha-Chlordane	P	**1.28**	mg/kg wet	0.500		10	06/10/08
beta-BHC	P	**0.900**	mg/kg wet	0.500		10	06/10/08
Chlordane (Total)		ND	mg/kg wet	6.00		10	06/10/08
delta-BHC	P	**0.716**	mg/kg wet	0.500		10	06/10/08
Dieldrin		ND	mg/kg wet	0.500		10	06/10/08
Endosulfan I		ND	mg/kg wet	0.500		10	06/10/08
Endosulfan II		ND	mg/kg wet	0.500		10	06/10/08
Endosulfan Sulfate		ND	mg/kg wet	0.500		10	06/10/08
Endrin		ND	mg/kg wet	0.500		10	06/10/08
Endrin Aldehyde		ND	mg/kg wet	0.500		10	06/10/08
Endrin Ketone		ND	mg/kg wet	0.500		10	06/10/08
gamma-BHC (Lindane)		**0.531**	mg/kg wet	0.300		10	06/10/08
gamma-Chlordane	P	**3.11**	mg/kg wet	0.500		10	06/10/08
Heptachlor		ND	mg/kg wet	0.500		10	06/10/08
Heptachlor Epoxide	P	**0.888**	mg/kg wet	0.500		10	06/10/08
Hexachlorobenzene	P	**2.50**	mg/kg wet	0.500		10	06/10/08
Methoxychlor		ND	mg/kg wet	0.500		10	06/10/08
Toxaphene		ND	mg/kg wet	25.0		10	06/10/08

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*192 %*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*115 %*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*1830 %*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*581 %*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 3580A

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: SEP
Prepared: 06/06/08

8082 Polychlorinated Biphenyls (PCB)

Analyte		Results	Units	MRL	RI - GA Limit	DF	Analyzed
Aroclor 1016		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1221		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1232		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1242		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1248		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1254		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1260	P	**25.8**	mg/kg wet	10.0		10	06/09/08
Aroclor 1262		ND	mg/kg wet	1.00		1	06/09/08
Aroclor 1268		ND	mg/kg wet	1.00		1	06/09/08

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*74 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*1460 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*225 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 3580A

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: VSC
Prepared: 06/06/08

8270C Semi-Volatile Organic Compounds

Analyte	Results	Units	MRL	RI - GA Limit	DF	Analyzed
1,1-Biphenyl	ND	mg/kg wet	500		5	06/07/08
1,2,4-Trichlorobenzene	ND	mg/kg wet	500		5	06/07/08
1,2-Dichlorobenzene	ND	mg/kg wet	500		5	06/07/08
1,3-Dichlorobenzene	ND	mg/kg wet	500		5	06/07/08
1,4-Dichlorobenzene	ND	mg/kg wet	500		5	06/07/08
2,3,4,6-Tetrachlorophenol	ND	mg/kg wet	2500		5	06/07/08
2,4,5-Trichlorophenol	ND	mg/kg wet	500		5	06/07/08
2,4,6-Trichlorophenol	ND	mg/kg wet	500		5	06/07/08
2,4-Dichlorophenol	ND	mg/kg wet	500		5	06/07/08
2,4-Dimethylphenol	ND	mg/kg wet	500		5	06/07/08
2,4-Dinitrophenol	ND	mg/kg wet	2500		5	06/07/08
2,4-Dinitrotoluene	ND	mg/kg wet	500		5	06/07/08
2,6-Dinitrotoluene	ND	mg/kg wet	500		5	06/07/08
2-Chloronaphthalene	ND	mg/kg wet	500		5	06/07/08
2-Chlorophenol	ND	mg/kg wet	500		5	06/07/08
2-Methylnaphthalene	ND	mg/kg wet	500		5	06/07/08
2-Methylphenol	ND	mg/kg wet	500		5	06/07/08
2-Nitroaniline	ND	mg/kg wet	500		5	06/07/08
2-Nitrophenol	ND	mg/kg wet	500		5	06/07/08
3,3'-Dichlorobenzidine	ND	mg/kg wet	1000		5	06/07/08
3+4-Methylphenol	ND	mg/kg wet	1000		5	06/07/08
3-Nitroaniline	ND	mg/kg wet	500		5	06/07/08
4,6-Dinitro-2-Methylphenol	ND	mg/kg wet	2500		5	06/07/08
4-Bromophenyl-phenylether	ND	mg/kg wet	500		5	06/07/08
4-Chloro-3-Methylphenol	ND	mg/kg wet	500		5	06/07/08
4-Chloroaniline	ND	mg/kg wet	1000		5	06/07/08
4-Chloro-phenyl-phenyl ether	ND	mg/kg wet	500		5	06/07/08
4-Nitroaniline	ND	mg/kg wet	500		5	06/07/08
4-Nitrophenol	ND	mg/kg wet	2500		5	06/07/08
Acenaphthene	ND	mg/kg wet	500		5	06/07/08
Acenaphthylene	ND	mg/kg wet	500		5	06/07/08
Acetophenone	ND	mg/kg wet	1000		5	06/07/08
Aniline	ND	mg/kg wet	1000		5	06/07/08
Anthracene	ND	mg/kg wet	500		5	06/07/08
Azobenzene	ND	mg/kg wet	500		5	06/07/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 3580A

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: VSC
Prepared: 06/06/08

8270C Semi-Volatile Organic Compounds

Benzo(a)anthracene	ND	mg/kg wet	500	5	06/07/08
Benzo(a)pyrene	ND	mg/kg wet	250	5	06/07/08
Benzo(b)fluoranthene	ND	mg/kg wet	500	5	06/07/08
Benzo(g,h,i)perylene	ND	mg/kg wet	500	5	06/07/08
Benzo(k)fluoranthene	ND	mg/kg wet	500	5	06/07/08
Benzoic Acid	ND	mg/kg wet	2500	5	06/07/08
Benzyl Alcohol	ND	mg/kg wet	500	5	06/07/08
bis(2-Chloroethoxy)methane	ND	mg/kg wet	500	5	06/07/08
bis(2-Chloroethyl)ether	ND	mg/kg wet	500	5	06/07/08
bis(2-chloroisopropyl)Ether	ND	mg/kg wet	500	5	06/07/08
bis(2-Ethylhexyl)phthalate	**2530**	mg/kg wet	500	5	06/07/08
Butylbenzylphthalate	ND	mg/kg wet	500	5	06/07/08
Carbazole	ND	mg/kg wet	500	5	06/07/08
Chrysene	ND	mg/kg wet	250	5	06/07/08
Dibenzo(a,h)Anthracene	ND	mg/kg wet	250	5	06/07/08
Dibenzofuran	ND	mg/kg wet	500	5	06/07/08
Diethylphthalate	ND	mg/kg wet	500	5	06/07/08
Dimethylphthalate	ND	mg/kg wet	500	5	06/07/08
Di-n-butylphthalate	ND	mg/kg wet	500	5	06/07/08
Di-n-octylphthalate	ND	mg/kg wet	500	5	06/07/08
Fluoranthene	ND	mg/kg wet	500	5	06/07/08
Fluorene	ND	mg/kg wet	500	5	06/07/08
Hexachlorobenzene	ND	mg/kg wet	250	5	06/07/08
Hexachlorobutadiene	ND	mg/kg wet	500	5	06/07/08
Hexachlorocyclopentadiene	ND	mg/kg wet	2500	5	06/07/08
Hexachloroethane	ND	mg/kg wet	500	5	06/07/08
Indeno(1,2,3-cd)Pyrene	ND	mg/kg wet	500	5	06/07/08
Isophorone	ND	mg/kg wet	500	5	06/07/08
Naphthalene	**778**	mg/kg wet	500	5	06/07/08
Nitrobenzene	ND	mg/kg wet	500	5	06/07/08
N-Nitrosodimethylamine	ND	mg/kg wet	500	5	06/07/08
N-Nitroso-Di-n-Propylamine	ND	mg/kg wet	500	5	06/07/08
N-nitrosodiphenylamine	ND	mg/kg wet	500	5	06/07/08
Pentachlorophenol	ND	mg/kg wet	2500	5	06/07/08
Phenanthrene	ND	mg/kg wet	500	5	06/07/08
Phenol	ND	mg/kg wet	500	5	06/07/08

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away
Client Sample ID: MW-3
Date Sampled: 06/05/08 10:20
Percent Solids: N/A
Initial Volume: 1
Final Volume: 10
Extraction Method: 3580A

ESS Laboratory Work Order: 0806089
ESS Laboratory Sample ID: 0806089-03
Sample Matrix: Oil
Analyst: VSC
Prepared: 06/06/08

8270C Semi-Volatile Organic Compounds

Pyrene	ND	mg/kg wet	500	5	06/07/08
Pyridine	ND	mg/kg wet	2500	5	06/07/08

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*156 %*	*SM*	*30-130*
Surrogate: 2,4,6-Tribromophenol	*90 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*97 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*%*	*SM*	*30-130*
Surrogate: 2-Fluorophenol	*234 %*	*SM*	*30-130*
Surrogate: Nitrobenzene-d5	*514 %*	*SM*	*30-130*
Surrogate: Phenol-d6	*166 %*	*SM*	*30-130*
Surrogate: p-Terphenyl-d14	*%*	*SM*	*30-130*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.100	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0500	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0500	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethane	ND	0.0500	mg/kg wet							
1,1-Dichloroethene	ND	0.0500	mg/kg wet							
1,1-Dichloropropene	ND	0.0500	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0500	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0500	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.300	mg/kg wet							
1,2-Dibromoethane	ND	0.0500	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,2-Dichloroethane	ND	0.0500	mg/kg wet							
1,2-Dichloropropane	ND	0.0500	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0500	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,3-Dichloropropane	ND	0.0500	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0500	mg/kg wet							
1,4-Dioxane - Screen	ND	5.00	mg/kg wet							
1-Chlorohexane	ND	0.0500	mg/kg wet							
2,2-Dichloropropane	ND	0.100	mg/kg wet							
2-Butanone	ND	1.25	mg/kg wet							
2-Chlorotoluene	ND	0.0500	mg/kg wet							
2-Hexanone	ND	0.500	mg/kg wet							
4-Chlorotoluene	ND	0.0500	mg/kg wet							
4-Isopropyltoluene	ND	0.0500	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.500	mg/kg wet							
Acetone	ND	1.25	mg/kg wet							
Benzene	ND	0.0500	mg/kg wet							
Bromobenzene	ND	0.0500	mg/kg wet							
Bromochloromethane	ND	0.0500	mg/kg wet							
Bromodichloromethane	ND	0.0500	mg/kg wet							
Bromoform	ND	0.0500	mg/kg wet							
Bromomethane	ND	0.100	mg/kg wet							
Carbon Disulfide	ND	0.0500	mg/kg wet							
Carbon Tetrachloride	ND	0.0500	mg/kg wet							
Chlorobenzene	ND	0.0500	mg/kg wet							
Chloroethane	ND	0.100	mg/kg wet							
Chloroform	ND	0.0500	mg/kg wet							
Chloromethane	ND	0.100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Dibromochloromethane	ND	0.0500	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Dibromomethane	ND	0.0500	mg/kg wet							
Dichlorodifluoromethane	ND	0.0500	mg/kg wet							
Diethyl Ether	ND	0.0500	mg/kg wet							
Di-Isopropyl ether	ND	0.0500	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0500	mg/kg wet							
Ethylbenzene	ND	0.0500	mg/kg wet							
Hexachlorobutadiene	ND	0.0500	mg/kg wet							
Isopropylbenzene	ND	0.0500	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0500	mg/kg wet							
Methylene Chloride	ND	0.250	mg/kg wet							
Naphthalene	ND	0.0500	mg/kg wet							
n-Butylbenzene	ND	0.0500	mg/kg wet							
n-Propylbenzene	ND	0.0500	mg/kg wet							
sec-Butylbenzene	ND	0.0500	mg/kg wet							
Styrene	ND	0.0500	mg/kg wet							
tert-Butylbenzene	ND	0.0500	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0500	mg/kg wet							
Tetrachloroethene	ND	0.0500	mg/kg wet							
Tetrahydrofuran	ND	0.500	mg/kg wet							
Toluene	ND	0.0500	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0500	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0500	mg/kg wet							
Trichloroethene	ND	0.0500	mg/kg wet							
Vinyl Acetate	ND	0.250	mg/kg wet							
Vinyl Chloride	ND	0.0500	mg/kg wet							
Xylene O	ND	0.0500	mg/kg wet							
Xylene P,M	ND	0.100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*2.25*		mg/kg wet	*2.500*		*90*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*2.45*		mg/kg wet	*2.500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*2.45*		mg/kg wet	*2.500*		*98*	*70-130*			
Surrogate: Toluene-d8	*2.41*		mg/kg wet	*2.500*		*96*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	2.16	0.100	mg/kg wet	2.500		87	70-130			
1,1,1-Trichloroethane	2.31	0.0500	mg/kg wet	2.500		92	70-130			
1,1,2,2-Tetrachloroethane	2.45	0.0500	mg/kg wet	2.500		98	70-130			
1,1,2-Trichloroethane	2.40	0.0500	mg/kg wet	2.500		96	70-130			
1,1-Dichloroethane	2.48	0.0500	mg/kg wet	2.500		99	70-130			
1,1-Dichloroethene	2.58	0.0500	mg/kg wet	2.500		103	70-130			
1,1-Dichloropropene	2.45	0.0500	mg/kg wet	2.500		98	70-130			
1,2,3-Trichlorobenzene	3.05	0.0500	mg/kg wet	2.500		122	70-130			
1,2,3-Trichloropropane	2.38	0.0500	mg/kg wet	2.500		95	70-130			
1,2,4-Trichlorobenzene	2.70	0.0500	mg/kg wet	2.500		108	70-130			
1,2,4-Trimethylbenzene	2.30	0.0500	mg/kg wet	2.500		92	70-130			
1,2-Dibromo-3-Chloropropane	2.45	0.300	mg/kg wet	2.500		98	70-130			
1,2-Dibromoethane	2.34	0.0500	mg/kg wet	2.500		94	70-130			
1,2-Dichlorobenzene	2.19	0.0500	mg/kg wet	2.500		87	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
1,2-Dichloroethane	2.37	0.0500	mg/kg wet	2.500		95	70-130			
1,2-Dichloropropane	2.48	0.0500	mg/kg wet	2.500		99	70-130			
1,3,5-Trimethylbenzene	2.21	0.0500	mg/kg wet	2.500		88	70-130			
1,3-Dichlorobenzene	2.19	0.0500	mg/kg wet	2.500		87	70-130			
1,3-Dichloropropane	2.41	0.0500	mg/kg wet	2.500		96	70-130			
1,4-Dichlorobenzene	2.14	0.0500	mg/kg wet	2.500		86	70-130			
1,4-Dioxane - Screen	72.6	5.00	mg/kg wet	50.00		145	44-241			
1-Chlorohexane	2.45	0.0500	mg/kg wet	2.500		98	70-130			
2,2-Dichloropropane	2.88	0.100	mg/kg wet	2.500		115	70-130			
2-Butanone	15.7	1.25	mg/kg wet	12.50		126	70-130			
2-Chlorotoluene	2.22	0.0500	mg/kg wet	2.500		89	70-130			
2-Hexanone	14.3	0.500	mg/kg wet	12.50		115	70-130			
4-Chlorotoluene	2.21	0.0500	mg/kg wet	2.500		88	70-130			
4-Isopropyltoluene	2.13	0.0500	mg/kg wet	2.500		85	70-130			
4-Methyl-2-Pentanone	12.6	0.500	mg/kg wet	12.50		101	70-130			
Acetone	16.1	1.25	mg/kg wet	12.50		128	70-130			
Benzene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
Bromobenzene	2.24	0.0500	mg/kg wet	2.500		89	70-130			
Bromochloromethane	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Bromodichloromethane	2.63	0.0500	mg/kg wet	2.500		105	70-130			
Bromoform	2.32	0.0500	mg/kg wet	2.500		93	70-130			
Bromomethane	2.88	0.100	mg/kg wet	2.500		115	70-130			
Carbon Disulfide	2.93	0.0500	mg/kg wet	2.500		117	70-130			
Carbon Tetrachloride	2.34	0.0500	mg/kg wet	2.500		93	70-130			
Chlorobenzene	2.28	0.0500	mg/kg wet	2.500		91	70-130			
Chloroethane	3.15	0.100	mg/kg wet	2.500		126	70-130			
Chloroform	2.40	0.0500	mg/kg wet	2.500		96	70-130			
Chloromethane	2.53	0.100	mg/kg wet	2.500		101	70-130			
cis-1,2-Dichloroethene	2.66	0.0500	mg/kg wet	2.500		106	70-130			
cis-1,3-Dichloropropene	2.48	0.0500	mg/kg wet	2.500		99	70-130			
Dibromochloromethane	2.30	0.0500	mg/kg wet	2.500		92	70-130			
Dibromomethane	2.41	0.0500	mg/kg wet	2.500		96	70-130			
Dichlorodifluoromethane	2.18	0.0500	mg/kg wet	2.500		87	70-130			
Diethyl Ether	2.92	0.0500	mg/kg wet	2.500		117	70-130			
Di-isopropyl ether	2.53	0.0500	mg/kg wet	2.500		101	70-130			
Ethyl tertiary-butyl ether	2.46	0.0500	mg/kg wet	2.500		99	70-130			
Ethylbenzene	2.31	0.0500	mg/kg wet	2.500		92	70-130			
Hexachlorobutadiene	2.60	0.0500	mg/kg wet	2.500		104	70-130			
Isopropylbenzene	2.01	0.0500	mg/kg wet	2.500		81	70-130			
Methyl tert-Butyl Ether	2.61	0.0500	mg/kg wet	2.500		104	70-130			
Methylene Chloride	2.69	0.250	mg/kg wet	2.500		108	70-130			
Naphthalene	2.87	0.0500	mg/kg wet	2.500		115	70-130			
n-Butylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
n-Propylbenzene	2.27	0.0500	mg/kg wet	2.500		91	70-130			
sec-Butylbenzene	2.25	0.0500	mg/kg wet	2.500		90	70-130			
Styrene	2.34	0.0500	mg/kg wet	2.500		93	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
tert-Butylbenzene	2.21	0.0500	mg/kg wet	2.500		89	70-130			
Tertiary-amyl methyl ether	2.56	0.0500	mg/kg wet	2.500		102	70-130			
Tetrachloroethene	2.30	0.0500	mg/kg wet	2.500		92	70-130			
Tetrahydrofuran	2.69	0.500	mg/kg wet	2.500		108	70-130			
Toluene	2.46	0.0500	mg/kg wet	2.500		98	70-130			
trans-1,2-Dichloroethene	2.63	0.0500	mg/kg wet	2.500		105	70-130			
trans-1,3-Dichloropropene	2.24	0.0500	mg/kg wet	2.500		90	70-130			
Trichloroethene	2.38	0.0500	mg/kg wet	2.500		95	70-130			
Vinyl Acetate	2.38	0.250	mg/kg wet	2.500		95	70-130			
Vinyl Chloride	3.16	0.0500	mg/kg wet	2.500		126	70-130			
Xylene O	2.37	0.0500	mg/kg wet	2.500		95	70-130			
Xylene P,M	4.73	0.100	mg/kg wet	5.000		95	70-130			
Surrogate: 1,2-Dichloroethane-d4	*2.36*		mg/kg wet	*2.500*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*2.43*		mg/kg wet	*2.500*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*2.39*		mg/kg wet	*2.500*		*95*	*70-130*			
Surrogate: Toluene-d8	*2.40*		mg/kg wet	*2.500*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	2.26	0.100	mg/kg wet	2.500		90	70-130	4	20	
1,1,1-Trichloroethane	2.43	0.0500	mg/kg wet	2.500		97	70-130	5	20	
1,1,2,2-Tetrachloroethane	2.54	0.0500	mg/kg wet	2.500		102	70-130	4	20	
1,1,2-Trichloroethane	2.53	0.0500	mg/kg wet	2.500		101	70-130	5	20	
1,1-Dichloroethane	2.60	0.0500	mg/kg wet	2.500		104	70-130	5	20	
1,1-Dichloroethene	2.74	0.0500	mg/kg wet	2.500		110	70-130	6	20	
1,1-Dichloropropene	2.57	0.0500	mg/kg wet	2.500		103	70-130	5	20	
1,2,3-Trichlorobenzene	3.19	0.0500	mg/kg wet	2.500		128	70-130	4	20	
1,2,3-Trichloropropane	2.47	0.0500	mg/kg wet	2.500		99	70-130	4	20	
1,2,4-Trichlorobenzene	2.80	0.0500	mg/kg wet	2.500		112	70-130	4	20	
1,2,4-Trimethylbenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	3	20	
1,2-Dibromo-3-Chloropropane	2.58	0.300	mg/kg wet	2.500		103	70-130	5	20	
1,2-Dibromoethane	2.48	0.0500	mg/kg wet	2.500		99	70-130	6	20	
1,2-Dichlorobenzene	2.26	0.0500	mg/kg wet	2.500		91	70-130	3	20	
1,2-Dichloroethane	2.49	0.0500	mg/kg wet	2.500		100	70-130	5	20	
1,2-Dichloropropane	2.60	0.0500	mg/kg wet	2.500		104	70-130	5	20	
1,3,5-Trimethylbenzene	2.28	0.0500	mg/kg wet	2.500		91	70-130	3	20	
1,3-Dichlorobenzene	2.23	0.0500	mg/kg wet	2.500		89	70-130	2	20	
1,3-Dichloropropane	2.51	0.0500	mg/kg wet	2.500		101	70-130	4	20	
1,4-Dichlorobenzene	2.23	0.0500	mg/kg wet	2.500		89	70-130	4	20	
1,4-Dioxane - Screen	74.3	5.00	mg/kg wet	50.00		149	44-241	2	200	
1-Chlorohexane	2.52	0.0500	mg/kg wet	2.500		101	70-130	3	20	
2,2-Dichloropropane	3.01	0.100	mg/kg wet	2.500		120	70-130	5	20	
2-Butanone	16.4	1.25	mg/kg wet	12.50		131	70-130	4	20	B+
2-Chlorotoluene	2.46	0.0500	mg/kg wet	2.500		98	70-130	11	20	
2-Hexanone	15.1	0.500	mg/kg wet	12.50		121	70-130	5	20	
4-Chlorotoluene	2.28	0.0500	mg/kg wet	2.500		91	70-130	3	20	
4-Isopropyltoluene	2.18	0.0500	mg/kg wet	2.500		87	70-130	2	20	
4-Methyl-2-Pentanone	13.4	0.500	mg/kg wet	12.50		107	70-130	6	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Acetone	16.5	1.25	mg/kg wet	12.50		132	70-130	3	20	B+
Benzene	2.58	0.0500	mg/kg wet	2.500		103	70-130	4	20	
Bromobenzene	2.30	0.0500	mg/kg wet	2.500		92	70-130	3	20	
Bromochloromethane	2.33	0.0500	mg/kg wet	2.500		93	70-130	3	20	
Bromodichloromethane	2.76	0.0500	mg/kg wet	2.500		111	70-130	5	20	
Bromoform	2.45	0.0500	mg/kg wet	2.500		98	70-130	5	20	
Bromomethane	3.08	0.100	mg/kg wet	2.500		123	70-130	7	20	
Carbon Disulfide	3.08	0.0500	mg/kg wet	2.500		123	70-130	5	20	
Carbon Tetrachloride	2.45	0.0500	mg/kg wet	2.500		98	70-130	5	20	
Chlorobenzene	2.38	0.0500	mg/kg wet	2.500		95	70-130	4	20	
Chloroethane	3.22	0.100	mg/kg wet	2.500		129	70-130	2	20	
Chloroform	2.51	0.0500	mg/kg wet	2.500		100	70-130	5	20	
Chloromethane	2.65	0.100	mg/kg wet	2.500		106	70-130	4	20	
cis-1,2-Dichloroethene	2.79	0.0500	mg/kg wet	2.500		112	70-130	5	20	
cis-1,3-Dichloropropene	2.60	0.0500	mg/kg wet	2.500		104	70-130	5	20	
Dibromochloromethane	2.43	0.0500	mg/kg wet	2.500		97	70-130	6	20	
Dibromomethane	2.53	0.0500	mg/kg wet	2.500		101	70-130	5	20	
Dichlorodifluoromethane	2.33	0.0500	mg/kg wet	2.500		93	70-130	7	20	
Diethyl Ether	3.10	0.0500	mg/kg wet	2.500		124	70-130	6	20	
Di-isopropyl ether	2.66	0.0500	mg/kg wet	2.500		106	70-130	5	20	
Ethyl tertiary-butyl ether	2.58	0.0500	mg/kg wet	2.500		103	70-130	5	20	
Ethylbenzene	2.39	0.0500	mg/kg wet	2.500		96	70-130	4	20	
Hexachlorobutadiene	2.68	0.0500	mg/kg wet	2.500		107	70-130	3	20	
Isopropylbenzene	2.07	0.0500	mg/kg wet	2.500		83	70-130	3	20	
Methyl tert-Butyl Ether	2.77	0.0500	mg/kg wet	2.500		111	70-130	6	20	
Methylene Chloride	2.80	0.250	mg/kg wet	2.500		112	70-130	4	20	
Naphthalene	3.02	0.0500	mg/kg wet	2.500		121	70-130	5	20	
n-Butylbenzene	2.45	0.0500	mg/kg wet	2.500		98	70-130	3	20	
n-Propylbenzene	2.22	0.0500	mg/kg wet	2.500		89	70-130	2	20	
sec-Butylbenzene	2.32	0.0500	mg/kg wet	2.500		93	70-130	3	20	
Styrene	2.42	0.0500	mg/kg wet	2.500		97	70-130	4	20	
tert-Butylbenzene	2.27	0.0500	mg/kg wet	2.500		91	70-130	3	20	
Tertiary-amyl methyl ether	2.70	0.0500	mg/kg wet	2.500		108	70-130	5	20	
Tetrachloroethene	2.40	0.0500	mg/kg wet	2.500		96	70-130	4	20	
Tetrahydrofuran	2.82	0.500	mg/kg wet	2.500		113	70-130	5	20	
Toluene	2.56	0.0500	mg/kg wet	2.500		103	70-130	4	20	
trans-1,2-Dichloroethene	2.77	0.0500	mg/kg wet	2.500		111	70-130	5	20	
trans-1,3-Dichloropropene	2.36	0.0500	mg/kg wet	2.500		94	70-130	5	20	
Trichloroethene	2.49	0.0500	mg/kg wet	2.500		100	70-130	5	20	
Vinyl Acetate	2.48	0.250	mg/kg wet	2.500		99	70-130	4	20	
Vinyl Chloride	3.31	0.0500	mg/kg wet	2.500		132	70-130	5	20	B+
Xylene O	2.45	0.0500	mg/kg wet	2.500		98	70-130	3	20	
Xylene P,M	4.92	0.100	mg/kg wet	5.000		98	70-130	4	20	
Surrogate: 1,2-Dichloroethane-d4	*2.42*		mg/kg wet	*2.500*		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*2.45*		mg/kg wet	*2.500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*2.41*		mg/kg wet	*2.500*		*96*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch BF81003 - 5035										
Surrogate: Toluene-dB	*2.42*		mg/kg wet	*2.500*		*97*	*70-130*			
8081A Organochlorine Pesticides										
Batch BF81021 - 3580A										
Blank										
4,4'-DDD	ND	0.0500	mg/kg wet							
4,4'-DDE	ND	0.0500	mg/kg wet							
4,4'-DDT	ND	0.0500	mg/kg wet							
Aldrin	ND	0.0500	mg/kg wet							
alpha-BHC	ND	0.0500	mg/kg wet							
alpha-Chlordane	ND	0.0500	mg/kg wet							
beta-BHC	ND	0.0500	mg/kg wet							
Chlordane (Total)	ND	0.600	mg/kg wet							
delta-BHC	ND	0.0500	mg/kg wet							
Dieldrin	ND	0.0500	mg/kg wet							
Endosulfan I	ND	0.0500	mg/kg wet							
Endosulfan II	ND	0.0500	mg/kg wet							
Endosulfan Sulfate	ND	0.0500	mg/kg wet							
Endrin	ND	0.0500	mg/kg wet							
Endrin Aldehyde	ND	0.0500	mg/kg wet							
Endrin Ketone	ND	0.0500	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0300	mg/kg wet							
gamma-Chlordane	ND	0.0500	mg/kg wet							
Heptachlor	ND	0.0500	mg/kg wet							
Heptachlor Epoxide	ND	0.0500	mg/kg wet							
Hexachlorobenzene	ND	0.0500	mg/kg wet							
Methoxychlor	ND	0.0500	mg/kg wet							
Toxaphene	ND	2.50	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.245*		mg/kg wet	*0.2500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.244*		mg/kg wet	*0.2500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.242*		mg/kg wet	*0.2500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.247*		mg/kg wet	*0.2500*		*99*	*30-150*			
LCS										
4,4'-DDD	0.237	0.0500	mg/kg wet	0.2500		95	40-140			
4,4'-DDE	0.239	0.0500	mg/kg wet	0.2500		96	40-140			
4,4'-DDT	0.229	0.0500	mg/kg wet	0.2500		91	40-140			
Aldrin	0.238	0.0500	mg/kg wet	0.2500		95	40-140			
alpha-BHC	0.242	0.0500	mg/kg wet	0.2500		97	40-140			
alpha-Chlordane	0.237	0.0500	mg/kg wet	0.2500		95	40-140			
beta-BHC	0.232	0.0500	mg/kg wet	0.2500		93	40-140			
delta-BHC	0.216	0.0500	mg/kg wet	0.2500		86	40-140			
Dieldrin	0.239	0.0500	mg/kg wet	0.2500		96	40-140			
Endosulfan I	0.235	0.0500	mg/kg wet	0.2500		94	40-140			
Endosulfan II	0.233	0.0500	mg/kg wet	0.2500		93	40-140			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

8081A Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch BF81021 - 3580A										
Endosulfan Sulfate	0.225	0.0500	mg/kg wet	0.2500		90	40-140			
Endrin	0.244	0.0500	mg/kg wet	0.2500		98	40-140			
Endrin Aldehyde	0.203	0.0500	mg/kg wet	0.2500		81	40-140			
Endrin Ketone	0.226	0.0500	mg/kg wet	0.2500		90	40-140			
gamma-BHC (Lindane)	0.238	0.0300	mg/kg wet	0.2500		95	40-140			
gamma-Chlordane	0.240	0.0500	mg/kg wet	0.2500		96	40-140			
Heptachlor	0.238	0.0500	mg/kg wet	0.2500		95	40-140			
Heptachlor Epoxide	0.240	0.0500	mg/kg wet	0.2500		96	40-140			
Hexachlorobenzene	0.241	0.0500	mg/kg wet	0.2500		96	40-140			
Methoxychlor	0.233	0.0500	mg/kg wet	0.2500		93	40-140			
Surrogate: Decachlorobiphenyl	*0.261*		mg/kg wet	*0.2500*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.258*		mg/kg wet	*0.2500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.260*		mg/kg wet	*0.2500*		*104*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.266*		mg/kg wet	*0.2500*		*106*	*30-150*			
LCS Dup										
4,4'-DDD	0.252	0.0500	mg/kg wet	0.2500		101	40-140	6	30	
4,4'-DDE	0.252	0.0500	mg/kg wet	0.2500		101	40-140	6	30	
4,4'-DDT	0.241	0.0500	mg/kg wet	0.2500		97	40-140	5	30	
Aldrin	0.245	0.0500	mg/kg wet	0.2500		98	40-140	3	30	
alpha-BHC	0.249	0.0500	mg/kg wet	0.2500		100	40-140	3	30	
alpha-Chlordane	0.243	0.0500	mg/kg wet	0.2500		97	40-140	2	30	
beta-BHC	0.240	0.0500	mg/kg wet	0.2500		96	40-140	3	30	
delta-BHC	0.223	0.0500	mg/kg wet	0.2500		89	40-140	3	30	
Dieldrin	0.247	0.0500	mg/kg wet	0.2500		99	40-140	3	30	
Endosulfan I	0.239	0.0500	mg/kg wet	0.2500		96	40-140	2	30	
Endosulfan II	0.240	0.0500	mg/kg wet	0.2500		96	40-140	3	30	
Endosulfan Sulfate	0.232	0.0500	mg/kg wet	0.2500		93	40-140	3	30	
Endrin	0.250	0.0500	mg/kg wet	0.2500		100	40-140	2	30	
Endrin Aldehyde	0.210	0.0500	mg/kg wet	0.2500		84	40-140	3	30	
Endrin Ketone	0.232	0.0500	mg/kg wet	0.2500		93	40-140	3	30	
gamma-BHC (Lindane)	0.245	0.0300	mg/kg wet	0.2500		98	40-140	3	30	
gamma-Chlordane	0.247	0.0500	mg/kg wet	0.2500		99	40-140	3	30	
Heptachlor	0.245	0.0500	mg/kg wet	0.2500		98	40-140	3	30	
Heptachlor Epoxide	0.247	0.0500	mg/kg wet	0.2500		99	40-140	3	30	
Hexachlorobenzene	0.246	0.0500	mg/kg wet	0.2500		99	40-140	2	30	
Methoxychlor	0.244	0.0500	mg/kg wet	0.2500		98	40-140	5	30	
Surrogate: Decachlorobiphenyl	*0.261*		mg/kg wet	*0.2500*		*104*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.258*		mg/kg wet	*0.2500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.258*		mg/kg wet	*0.2500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.254*		mg/kg wet	*0.2500*		*102*	*30-150*			
Duplicate **Source: 0806089-03**										
4,4'-DDD	1.02	0.500	mg/kg wet		1.24			19	30	
4,4'-DDE	ND	0.500	mg/kg wet		ND				30	
4,4'-DDT	ND	0.500	mg/kg wet		ND				30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081A Organochlorine Pesticides										
Batch BF81021 - 3580A										
Aldrin	ND	0.500	mg/kg wet		ND				30	
alpha-BHC	0.234	0.500	mg/kg wet		0.280			18	30	
alpha-Chlordane	1.35	0.500	mg/kg wet		1.28			6	30	
beta-BHC	0.879	0.500	mg/kg wet		0.900			2	30	
Chlordane (Total)	ND	6.00	mg/kg wet		ND				30	
delta-BHC	0.626	0.500	mg/kg wet		0.716			14	30	
Dieldrin	ND	0.500	mg/kg wet		ND				30	
Endosulfan I	ND	0.500	mg/kg wet		ND				30	
Endosulfan II	ND	0.500	mg/kg wet		ND				30	
Endosulfan Sulfate	ND	0.500	mg/kg wet		ND				30	
Endrin	ND	0.500	mg/kg wet		ND				30	
Endrin Aldehyde	ND	0.500	mg/kg wet		ND				30	
Endrin Ketone	ND	0.500	mg/kg wet		ND				30	
gamma-BHC (Lindane)	0.555	0.300	mg/kg wet		0.531			4	30	
gamma-Chlordane	3.19	0.500	mg/kg wet		3.11			3	30	
Heptachlor	ND	0.500	mg/kg wet		ND				30	
Heptachlor Epoxide	0.953	0.500	mg/kg wet		0.888			7	30	
Hexachlorobenzene	2.19	0.500	mg/kg wet		2.50			13	30	
Methoxychlor	ND	0.500	mg/kg wet		ND				30	
Toxaphene	ND	25.0	mg/kg wet		ND				30	
Surrogate: Decachlorobiphenyl	*1.13*		mg/kg wet	*0.2500*		*451*	*30-150*			*SD*
Surrogate: Decachlorobiphenyl [2C]	*0.513*		mg/kg wet	*0.2500*		*205*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene	*5.02*		mg/kg wet	*0.2500*		*NR*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene [2C]	*1.27*		mg/kg wet	*0.2500*		*506*	*30-150*			*SD*
Matrix Spike **Source: 0806089-03**										**MD**
4,4'-DDD	1.18	0.500	mg/kg wet	0.2500	1.24	NR	30-150			
4,4'-DDE	1.20	0.500	mg/kg wet	0.2500	ND	479	30-150			
4,4'-DDT	3.09	0.500	mg/kg wet	0.2500	ND	NR	30-150			
Aldrin	0.543	0.500	mg/kg wet	0.2500	ND	217	30-150			
alpha-BHC	0.880	0.500	mg/kg wet	0.2500	0.280	240	30-150			
alpha-Chlordane	1.48	0.500	mg/kg wet	0.2500	1.28	82	30-150			
beta-BHC	1.17	0.500	mg/kg wet	0.2500	0.900	110	30-150			
delta-BHC	0.905	0.500	mg/kg wet	0.2500	0.716	75	30-150			
Dieldrin	1.42	0.500	mg/kg wet	0.2500	ND	566	30-150			
Endosulfan I	0.644	0.500	mg/kg wet	0.2500	ND	258	30-150			
Endosulfan II	1.12	0.500	mg/kg wet	0.2500	ND	448	30-150			
Endosulfan Sulfate	1.04	0.500	mg/kg wet	0.2500	ND	417	30-150			
Endrin	1.66	0.500	mg/kg wet	0.2500	ND	662	30-150			
Endrin Aldehyde	4.03	0.500	mg/kg wet	0.2500	ND	NR	30-150			
Endrin Ketone	0.249	0.500	mg/kg wet	0.2500	ND	100	30-150			
gamma-BHC (Lindane)	1.37	0.300	mg/kg wet	0.2500	0.531	337	30-150			
gamma-Chlordane	3.75	0.500	mg/kg wet	0.2500	3.11	257	30-150			
Heptachlor	1.14	0.500	mg/kg wet	0.2500	ND	458	30-150			
Heptachlor Epoxide	1.22	0.500	mg/kg wet	0.2500	0.888	134	30-150			
Hexachlorobenzene	2.89	0.500	mg/kg wet	0.2500	2.50	157	30-150			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081A Organochlorine Pesticides										
Batch BF81021 - 3580A										
Methoxychlor	0.191	0.500	mg/kg wet	0.2500	ND	76	30-150			
Surrogate: Decachlorobiphenyl	*1.01*		mg/kg wet	*0.2500*		*403*	*30-150*			*SD*
Surrogate: Decachlorobiphenyl [2C]	*0.614*		mg/kg wet	*0.2500*		*246*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene	*5.32*		mg/kg wet	*0.2500*		*NR*	*30-150*			*SD*
Surrogate: Tetrachloro-m-xylene [2C]	*1.59*		mg/kg wet	*0.2500*		*638*	*30-150*			*SD*
8082 Polychlorinated Biphenyls (PCB)										
Batch BF80629 - 3580A										
Blank										
Aroclor 1016	ND	1.00	mg/kg wet							
Aroclor 1221	ND	1.00	mg/kg wet							
Aroclor 1232	ND	1.00	mg/kg wet							
Aroclor 1242	ND	1.00	mg/kg wet							
Aroclor 1248	ND	1.00	mg/kg wet							
Aroclor 1254	ND	1.00	mg/kg wet							
Aroclor 1260	ND	1.00	mg/kg wet							
Aroclor 1262	ND	1.00	mg/kg wet							
Aroclor 1268	ND	1.00	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.442*		mg/kg wet	*0.5000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.433*		mg/kg wet	*0.5000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.377*		mg/kg wet	*0.5000*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.444*		mg/kg wet	*0.5000*		*89*	*30-150*			
LCS										
Aroclor 1016	8.04	1.00	mg/kg wet	10.00		80	40-140			
Aroclor 1260	8.11	1.00	mg/kg wet	10.00		81	40-140			
Surrogate: Decachlorobiphenyl	*0.436*		mg/kg wet	*0.5000*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.423*		mg/kg wet	*0.5000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.381*		mg/kg wet	*0.5000*		*76*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.608*		mg/kg wet	*0.5000*		*122*	*30-150*			
LCS Dup										
Aroclor 1016	8.54	1.00	mg/kg wet	10.00		85	40-140	6	50	
Aroclor 1260	8.52	1.00	mg/kg wet	10.00		85	40-140	5	50	
Surrogate: Decachlorobiphenyl	*0.466*		mg/kg wet	*0.5000*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.452*		mg/kg wet	*0.5000*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.420*		mg/kg wet	*0.5000*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.524*		mg/kg wet	*0.5000*		*105*	*30-150*			
Duplicate **Source: 0806089-03**										
Aroclor 1016	ND	1.00	mg/kg wet		ND				50	
Aroclor 1221	ND	1.00	mg/kg wet		ND				50	
Aroclor 1232	ND	1.00	mg/kg wet		ND				50	
Aroclor 1242	ND	1.00	mg/kg wet		ND				50	
Aroclor 1248	ND	1.00	mg/kg wet		ND				50	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082 Polychlorinated Biphenyls (PCB)										
Batch BF80629 - 3580A										
Aroclor 1254	ND	1.00	mg/kg wet		ND				50	
Aroclor 1260	27.5	10.0	mg/kg wet		25.8			7	50	P
Aroclor 1262	ND	1.00	mg/kg wet		ND				50	
Aroclor 1268	ND	1.00	mg/kg wet		ND				50	
Surrogate: Decachlorobiphenyl	*0.439*		mg/kg wet	*0.5000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.475*		mg/kg wet	*0.5000*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*6.88*		mg/kg wet	*0.5000*		*NR*	*30-150*			*SM*
Surrogate: Tetrachloro-m-xylene [2C]	*1.00*		mg/kg wet	*0.5000*		*201*	*30-150*			*SM*
Matrix Spike **Source: 0806089-03**										
Aroclor 1016	73.0	10.0	mg/kg wet	10.00	ND	730	40-140			M+
Aroclor 1260	30.4	10.0	mg/kg wet	10.00	25.8	46	40-140			
Surrogate: Decachlorobiphenyl	*0.398*		mg/kg wet	*0.5000*		*80*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.466*		mg/kg wet	*0.5000*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*7.27*		mg/kg wet	*0.5000*		*NR*	*30-150*			*SM*
Surrogate: Tetrachloro-m-xylene [2C]	*1.08*		mg/kg wet	*0.5000*		*217*	*30-150*			*SM*
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0250	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0250	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0040	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.4*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*25.2*		ug/L	*25.00*		*101*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.25		ug/L	10.00		92	70-130			
1,1,1-Trichloroethane	8.95		ug/L	10.00		90	70-130			
1,1,2,2-Tetrachloroethane	8.67		ug/L	10.00		87	70-130			
1,1,2-Trichloroethane	9.49		ug/L	10.00		95	70-130			
1,1-Dichloroethane	9.56		ug/L	10.00		96	70-130			
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130			
1,1-Dichloropropene	9.29		ug/L	10.00		93	70-130			
1,2,3-Trichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,2,3-Trichloropropane	9.14		ug/L	10.00		91	70-130			
1,2,4-Trichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,2,4-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,2-Dibromo-3-Chloropropane	9.05		ug/L	10.00		90	70-130			
1,2-Dibromoethane	8.97		ug/L	10.00		90	70-130			
1,2-Dichlorobenzene	9.79		ug/L	10.00		98	70-130			
1,2-Dichloroethane	9.10		ug/L	10.00		91	70-130			
1,2-Dichloropropane	9.47		ug/L	10.00		95	70-130			
1,3,5-Trimethylbenzene	9.61		ug/L	10.00		96	70-130			
1,3-Dichlorobenzene	9.44		ug/L	10.00		94	70-130			
1,3-Dichloropropane	8.83		ug/L	10.00		88	70-130			
1,4-Dichlorobenzene	9.55		ug/L	10.00		96	70-130			
1,4-Dioxane - Screen	375		ug/L	200.0		188	0-332			
1-Chlorohexane	9.86		ug/L	10.00		99	70-130			
2,2-Dichloropropane	9.09		ug/L	10.00		91	70-130			
2-Butanone	53.8		ug/L	50.00		108	70-130			
2-Chlorotoluene	9.69		ug/L	10.00		97	70-130			
2-Hexanone	59.8		ug/L	50.00		120	70-130			
4-Chlorotoluene	9.67		ug/L	10.00		97	70-130			
4-Isopropyltoluene	9.61		ug/L	10.00		96	70-130			
4-Methyl-2-Pentanone	51.1		ug/L	50.00		102	70-130			
Acetone	64.2		ug/L	50.00		128	70-130			
Benzene	9.32		ug/L	10.00		93	70-130			
Bromobenzene	9.57		ug/L	10.00		96	70-130			
Bromochloromethane	9.65		ug/L	10.00		96	70-130			
Bromodichloromethane	10.2		ug/L	10.00		102	70-130			
Bromoform	9.59		ug/L	10.00		96	70-130			
Bromomethane	9.66		ug/L	10.00		97	70-130			
Carbon Disulfide	10.9		ug/L	10.00		109	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Carbon Tetrachloride	8.82		ug/L	10.00		88	70-130			
Chlorobenzene	9.62		ug/L	10.00		96	70-130			
Chloroethane	9.48		ug/L	10.00		95	70-130			
Chloroform	9.52		ug/L	10.00		95	70-130			
Chloromethane	8.93		ug/L	10.00		89	70-130			
cis-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130			
cis-1,3-Dichloropropene	9.39		ug/L	10.00		94	70-130			
Dibromochloromethane	9.27		ug/L	10.00		93	70-130			
Dibromomethane	9.24		ug/L	10.00		92	70-130			
Dichlorodifluoromethane	8.04		ug/L	10.00		80	70-130			
Diethyl Ether	9.89		ug/L	10.00		99	70-130			
Di-isopropyl ether	11.2		ug/L	10.00		112	70-130			
Ethyl tertiary-butyl ether	10.7		ug/L	10.00		107	70-130			
Ethylbenzene	9.69		ug/L	10.00		97	70-130			
Hexachlorobutadiene	11.4		ug/L	10.00		114	70-130			
Hexachloroethane	10.2		ug/L	10.00		102	70-130			
Isopropylbenzene	8.88		ug/L	10.00		89	70-130			
Methyl tert-Butyl Ether	11.7		ug/L	10.00		117	70-130			
Methylene Chloride	8.79		ug/L	10.00		88	70-130			
Naphthalene	10.6		ug/L	10.00		106	70-130			
n-Butylbenzene	10.0		ug/L	10.00		100	70-130			
n-Propylbenzene	9.94		ug/L	10.00		99	70-130			
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Styrene	9.44		ug/L	10.00		94	70-130			
tert-Butylbenzene	9.59		ug/L	10.00		96	70-130			
Tertiary-amyl methyl ether	10.6		ug/L	10.00		106	70-130			
Tetrachloroethene	9.14		ug/L	10.00		91	70-130			
Tetrahydrofuran	10.0		ug/L	10.00		100	70-130			
Toluene	9.76		ug/L	10.00		98	70-130			
trans-1,2-Dichloroethene	10.3		ug/L	10.00		103	70-130			
trans-1,3-Dichloropropene	8.60		ug/L	10.00		86	70-130			
Trichloroethene	9.07		ug/L	10.00		91	70-130			
Trichlorofluoromethane	9.24		ug/L	10.00		92	70-130			
Vinyl Acetate	8.86		ug/L	10.00		89	70-130			
Vinyl Chloride	11.5		ug/L	10.00		115	70-130			
Xylene O	9.59		ug/L	10.00		96	70-130			
Xylene P,M	19.1		ug/L	20.00		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*24.7*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*26.2*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.17		ug/L	10.00		92	70-130	0.9	20	
1,1,1-Trichloroethane	8.97		ug/L	10.00		90	70-130	0.2	20	
1,1,2,2-Tetrachloroethane	8.87		ug/L	10.00		89	70-130	2	20	
1,1,2-Trichloroethane	9.75		ug/L	10.00		98	70-130	3	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
1,1-Dichloroethane	9.27		ug/L	10.00		93	70-130	3	20	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.2	20	
1,1-Dichloropropene	9.37		ug/L	10.00		94	70-130	0.9	20	
1,2,3-Trichlorobenzene	9.78		ug/L	10.00		98	70-130	9	20	
1,2,3-Trichloropropane	8.98		ug/L	10.00		90	70-130	2	20	
1,2,4-Trichlorobenzene	9.53		ug/L	10.00		95	70-130	10	20	
1,2,4-Trimethylbenzene	9.59		ug/L	10.00		96	70-130	4	20	
1,2-Dibromo-3-Chloropropane	8.09		ug/L	10.00		81	70-130	11	20	
1,2-Dibromoethane	9.39		ug/L	10.00		94	70-130	5	20	
1,2-Dichlorobenzene	9.31		ug/L	10.00		93	70-130	5	20	
1,2-Dichloroethane	8.85		ug/L	10.00		88	70-130	3	20	
1,2-Dichloropropane	9.04		ug/L	10.00		90	70-130	5	20	
1,3,5-Trimethylbenzene	9.57		ug/L	10.00		96	70-130	0.4	20	
1,3-Dichlorobenzene	9.07		ug/L	10.00		91	70-130	4	20	
1,3-Dichloropropane	9.23		ug/L	10.00		92	70-130	4	20	
1,4-Dichlorobenzene	9.27		ug/L	10.00		93	70-130	3	20	
1,4-Dioxane - Screen	259		ug/L	200.0		129	0-332	37	200	
1-Chlorohexane	9.71		ug/L	10.00		97	70-130	2	20	
2,2-Dichloropropane	8.88		ug/L	10.00		89	70-130	2	20	
2-Butanone	52.0		ug/L	50.00		104	70-130	3	20	
2-Chlorotoluene	9.74		ug/L	10.00		97	70-130	0.5	20	
2-Hexanone	57.3		ug/L	50.00		115	70-130	4	20	
4-Chlorotoluene	9.31		ug/L	10.00		93	70-130	4	20	
4-Isopropyltoluene	9.24		ug/L	10.00		92	70-130	4	20	
4-Methyl-2-Pentanone	49.2		ug/L	50.00		98	70-130	4	20	
Acetone	59.9		ug/L	50.00		120	70-130	7	20	
Benzene	9.28		ug/L	10.00		93	70-130	0.4	20	
Bromobenzene	9.33		ug/L	10.00		93	70-130	3	20	
Bromochloromethane	9.76		ug/L	10.00		98	70-130	1	20	
Bromodichloromethane	9.85		ug/L	10.00		98	70-130	3	20	
Bromoform	9.73		ug/L	10.00		97	70-130	1	20	
Bromomethane	9.84		ug/L	10.00		98	70-130	2	20	
Carbon Disulfide	11.0		ug/L	10.00		110	70-130	0.9	20	
Carbon Tetrachloride	8.82		ug/L	10.00		88	70-130	0	20	
Chlorobenzene	9.25		ug/L	10.00		92	70-130	4	20	
Chloroethane	9.68		ug/L	10.00		97	70-130	2	20	
Chloroform	9.31		ug/L	10.00		93	70-130	2	20	
Chloromethane	8.69		ug/L	10.00		87	70-130	3	20	
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130	3	20	
cis-1,3-Dichloropropene	9.20		ug/L	10.00		92	70-130	2	20	
Dibromochloromethane	9.14		ug/L	10.00		91	70-130	1	20	
Dibromomethane	9.06		ug/L	10.00		91	70-130	2	20	
Dichlorodifluoromethane	8.38		ug/L	10.00		84	70-130	4	20	
Diethyl Ether	9.92		ug/L	10.00		99	70-130	0.3	20	
Di-isopropyl ether	10.6		ug/L	10.00		106	70-130	5	20	
Ethyl tertiary-butyl ether	10.6		ug/L	10.00		106	70-130	2	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF80625 - 5030B										
Ethylbenzene	9.49		ug/L	10.00		95	70-130	2	20	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	9	20	
Hexachloroethane	10.0		ug/L	10.00		100	70-130	2	20	
Isopropylbenzene	8.72		ug/L	10.00		87	70-130	2	20	
Methyl tert-Butyl Ether	11.6		ug/L	10.00		116	70-130	0.8	20	
Methylene Chloride	8.93		ug/L	10.00		89	70-130	2	20	
Naphthalene	9.86		ug/L	10.00		99	70-130	7	20	
n-Butylbenzene	9.63		ug/L	10.00		96	70-130	4	20	
n-Propylbenzene	9.77		ug/L	10.00		98	70-130	2	20	
sec-Butylbenzene	9.49		ug/L	10.00		95	70-130	6	20	
Styrene	9.39		ug/L	10.00		94	70-130	0.5	20	
tert-Butylbenzene	9.58		ug/L	10.00		96	70-130	0.1	20	
Tertiary-amyl methyl ether	10.4		ug/L	10.00		104	70-130	2	20	
Tetrachloroethene	9.19		ug/L	10.00		92	70-130	0.5	20	
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130	2	20	
Toluene	9.35		ug/L	10.00		94	70-130	4	20	
trans-1,2-Dichloroethene	9.94		ug/L	10.00		99	70-130	3	20	
trans-1,3-Dichloropropene	8.68		ug/L	10.00		87	70-130	0.9	20	
Trichloroethene	9.13		ug/L	10.00		91	70-130	0.7	20	
Trichlorofluoromethane	9.21		ug/L	10.00		92	70-130	0.3	20	
Vinyl Acetate	8.91		ug/L	10.00		89	70-130	0.6	20	
Vinyl Chloride	11.6		ug/L	10.00		116	70-130	0.3	20	
Xylene O	9.51		ug/L	10.00		95	70-130	0.8	20	
Xylene P,M	19.1		ug/L	20.00		95	70-130	0.3	20	
Surrogate: 1,2-Dichloroethane-d4	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.0*		ug/L	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*26.7*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Batch BF81004 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0250	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0250	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0040	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*23.5*		ug/L	*25.00*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*25.2*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Toluene-d8	*25.5*		ug/L	*25.00*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.08		ug/L	10.00		91	70-130			
1,1,1-Trichloroethane	9.19		ug/L	10.00		92	70-130			
1,1,2,2-Tetrachloroethane	9.14		ug/L	10.00		91	70-130			
1,1,2-Trichloroethane	9.41		ug/L	10.00		94	70-130			
1,1-Dichloroethane	9.40		ug/L	10.00		94	70-130			
1,1-Dichloroethene	10.8		ug/L	10.00		108	70-130			
1,1-Dichloropropene	9.55		ug/L	10.00		96	70-130			
1,2,3-Trichlorobenzene	9.98		ug/L	10.00		100	70-130			
1,2,3-Trichloropropane	9.17		ug/L	10.00		92	70-130			
1,2,4-Trichlorobenzene	9.88		ug/L	10.00		99	70-130			
1,2,4-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dibromo-3-Chloropropane	10.3		ug/L	10.00		103	70-130			
1,2-Dibromoethane	9.19		ug/L	10.00		92	70-130			
1,2-Dichlorobenzene	9.69		ug/L	10.00		97	70-130			
1,2-Dichloroethane	9.44		ug/L	10.00		94	70-130			
1,2-Dichloropropane	9.07		ug/L	10.00		91	70-130			
1,3,5-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,3-Dichlorobenzene	9.76		ug/L	10.00		98	70-130			
1,3-Dichloropropane	9.40		ug/L	10.00		94	70-130			
1,4-Dichlorobenzene	9.57		ug/L	10.00		96	70-130			
1,4-Dioxane - Screen	482		ug/L	200.0		241	0-332			
1-Chlorohexane	10.1		ug/L	10.00		101	70-130			
2,2-Dichloropropane	9.29		ug/L	10.00		93	70-130			
2-Butanone	52.3		ug/L	50.00		105	70-130			
2-Chlorotoluene	10.3		ug/L	10.00		103	70-130			
2-Hexanone	58.9		ug/L	50.00		118	70-130			
4-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
4-Isopropyltoluene	9.80		ug/L	10.00		98	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
4-Methyl-2-Pentanone	48.2		ug/L	50.00		96	70-130			
Acetone	55.1		ug/L	50.00		110	70-130			
Benzene	9.45		ug/L	10.00		94	70-130			
Bromobenzene	9.75		ug/L	10.00		98	70-130			
Bromochloromethane	9.50		ug/L	10.00		95	70-130			
Bromodichloromethane	10.0		ug/L	10.00		100	70-130			
Bromoform	9.63		ug/L	10.00		96	70-130			
Bromomethane	9.73		ug/L	10.00		97	70-130			
Carbon Disulfide	11.0		ug/L	10.00		110	70-130			
Carbon Tetrachloride	9.35		ug/L	10.00		94	70-130			
Chlorobenzene	9.69		ug/L	10.00		97	70-130			
Chloroethane	9.26		ug/L	10.00		93	70-130			
Chloroform	9.61		ug/L	10.00		96	70-130			
Chloromethane	8.75		ug/L	10.00		88	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	9.01		ug/L	10.00		90	70-130			
Dibromochloromethane	9.59		ug/L	10.00		96	70-130			
Dibromomethane	8.81		ug/L	10.00		88	70-130			
Dichlorodifluoromethane	8.65		ug/L	10.00		86	70-130			
Diethyl Ether	9.42		ug/L	10.00		94	70-130			
Di-isopropyl ether	10.8		ug/L	10.00		108	70-130			
Ethyl tertiary-butyl ether	10.3		ug/L	10.00		103	70-130			
Ethylbenzene	9.87		ug/L	10.00		99	70-130			
Hexachlorobutadiene	10.9		ug/L	10.00		109	70-130			
Hexachloroethane	10.7		ug/L	10.00		107	70-130			
Isopropylbenzene	9.00		ug/L	10.00		90	70-130			
Methyl tert-Butyl Ether	11.6		ug/L	10.00		116	70-130			
Methylene Chloride	8.86		ug/L	10.00		89	70-130			
Naphthalene	9.64		ug/L	10.00		96	70-130			
n-Butylbenzene	10.7		ug/L	10.00		107	70-130			
n-Propylbenzene	10.5		ug/L	10.00		105	70-130			
sec-Butylbenzene	10.5		ug/L	10.00		105	70-130			
Styrene	9.38		ug/L	10.00		94	70-130			
tert-Butylbenzene	10.0		ug/L	10.00		100	70-130			
Tertiary-amyl methyl ether	10.2		ug/L	10.00		102	70-130			
Tetrachloroethene	9.01		ug/L	10.00		90	70-130			
Tetrahydrofuran	9.68		ug/L	10.00		97	70-130			
Toluene	9.42		ug/L	10.00		94	70-130			
trans-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130			
trans-1,3-Dichloropropene	8.83		ug/L	10.00		88	70-130			
Trichloroethene	9.35		ug/L	10.00		94	70-130			
Trichlorofluoromethane	9.53		ug/L	10.00		95	70-130			
Vinyl Acetate	9.03		ug/L	10.00		90	70-130			
Vinyl Chloride	11.7		ug/L	10.00		117	70-130			
Xylene O	9.49		ug/L	10.00		95	70-130			
Xylene P,M	19.2		ug/L	20.00		96	70-130			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
Surrogate: 1,2-Dichloroethane-d4	*24.5*		ug/L	*25.00*		*98*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.1*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*26.4*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Toluene-d8	*26.2*		ug/L	*25.00*		*105*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.56		ug/L	10.00		96	70-130	5	20	
1,1,1-Trichloroethane	9.23		ug/L	10.00		92	70-130	0.4	20	
1,1,2,2-Tetrachloroethane	9.41		ug/L	10.00		94	70-130	3	20	
1,1,2-Trichloroethane	9.21		ug/L	10.00		92	70-130	2	20	
1,1-Dichloroethane	9.46		ug/L	10.00		95	70-130	0.6	20	
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130	3	20	
1,1-Dichloropropene	9.41		ug/L	10.00		94	70-130	1	20	
1,2,3-Trichlorobenzene	8.56		ug/L	10.00		86	70-130	15	20	
1,2,3-Trichloropropane	9.56		ug/L	10.00		96	70-130	4	20	
1,2,4-Trichlorobenzene	9.03		ug/L	10.00		90	70-130	9	20	
1,2,4-Trimethylbenzene	10.2		ug/L	10.00		102	70-130	0.5	20	
1,2-Dibromo-3-Chloropropane	8.46		ug/L	10.00		85	70-130	20	20	
1,2-Dibromoethane	9.68		ug/L	10.00		97	70-130	5	20	
1,2-Dichlorobenzene	9.72		ug/L	10.00		97	70-130	0.3	20	
1,2-Dichloroethane	9.08		ug/L	10.00		91	70-130	4	20	
1,2-Dichloropropane	9.17		ug/L	10.00		92	70-130	1	20	
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130	0.6	20	
1,3-Dichlorobenzene	9.68		ug/L	10.00		97	70-130	0.8	20	
1,3-Dichloropropane	9.48		ug/L	10.00		95	70-130	0.8	20	
1,4-Dichlorobenzene	9.85		ug/L	10.00		98	70-130	3	20	
1,4-Dioxane - Screen	330		ug/L	200.0		165	0-332	37	200	
1-Chlorohexane	9.91		ug/L	10.00		99	70-130	2	20	
2,2-Dichloropropane	9.19		ug/L	10.00		92	70-130	1	20	
2-Butanone	50.3		ug/L	50.00		101	70-130	4	20	
2-Chlorotoluene	10.6		ug/L	10.00		106	70-130	3	20	
2-Hexanone	57.6		ug/L	50.00		115	70-130	2	20	
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130	1	20	
4-Isopropyltoluene	9.67		ug/L	10.00		97	70-130	1	20	
4-Methyl-2-Pentanone	46.6		ug/L	50.00		93	70-130	3	20	
Acetone	52.0		ug/L	50.00		104	70-130	6	20	
Benzene	9.31		ug/L	10.00		93	70-130	1	20	
Bromobenzene	10.0		ug/L	10.00		100	70-130	3	20	
Bromochloromethane	9.56		ug/L	10.00		96	70-130	0.6	20	
Bromodichloromethane	10.1		ug/L	10.00		101	70-130	1	20	
Bromoform	9.56		ug/L	10.00		96	70-130	0.7	20	
Bromomethane	9.68		ug/L	10.00		97	70-130	0.5	20	
Carbon Disulfide	11.1		ug/L	10.00		111	70-130	1	20	
Carbon Tetrachloride	9.22		ug/L	10.00		92	70-130	1	20	
Chlorobenzene	9.77		ug/L	10.00		98	70-130	0.8	20	
Chloroethane	9.19		ug/L	10.00		92	70-130	0.8	20	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch BF81004 - 5030B										
Chloroform	9.59		ug/L	10.00		96	70-130	0.2	20	
Chloromethane	8.36		ug/L	10.00		84	70-130	5	20	
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.1	20	
cis-1,3-Dichloropropene	9.18		ug/L	10.00		92	70-130	2	20	
Dibromochloromethane	9.53		ug/L	10.00		95	70-130	0.6	20	
Dibromomethane	9.21		ug/L	10.00		92	70-130	4	20	
Dichlorodifluoromethane	8.21		ug/L	10.00		82	70-130	5	20	
Diethyl Ether	9.25		ug/L	10.00		92	70-130	2	20	
Di-isopropyl ether	10.6		ug/L	10.00		106	70-130	1	20	
Ethyl tertiary-butyl ether	10.2		ug/L	10.00		102	70-130	0.3	20	
Ethylbenzene	9.92		ug/L	10.00		99	70-130	0.5	20	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	5	20	
Hexachloroethane	10.7		ug/L	10.00		107	70-130	0.2	20	
Isopropylbenzene	9.18		ug/L	10.00		92	70-130	2	20	
Methyl tert-Butyl Ether	11.7		ug/L	10.00		117	70-130	0.8	20	
Methylene Chloride	8.88		ug/L	10.00		89	70-130	0.2	20	
Naphthalene	8.89		ug/L	10.00		89	70-130	8	20	
n-Butylbenzene	10.1		ug/L	10.00		101	70-130	6	20	
n-Propylbenzene	10.6		ug/L	10.00		106	70-130	0.5	20	
sec-Butylbenzene	10.2		ug/L	10.00		102	70-130	3	20	
Styrene	9.51		ug/L	10.00		95	70-130	1	20	
tert-Butylbenzene	10.1		ug/L	10.00		101	70-130	0.6	20	
Tertiary-amyl methyl ether	10.3		ug/L	10.00		103	70-130	1	20	
Tetrachloroethene	9.27		ug/L	10.00		93	70-130	3	20	
Tetrahydrofuran	9.11		ug/L	10.00		91	70-130	6	20	
Toluene	9.42		ug/L	10.00		94	70-130	0	20	
trans-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	0.3	20	
trans-1,3-Dichloropropene	8.25		ug/L	10.00		82	70-130	7	20	
Trichloroethene	9.48		ug/L	10.00		95	70-130	1	20	
Trichlorofluoromethane	9.82		ug/L	10.00		98	70-130	3	20	
Vinyl Acetate	8.77		ug/L	10.00		88	70-130	3	20	
Vinyl Chloride	11.6		ug/L	10.00		116	70-130	1	20	
Xylene O	9.79		ug/L	10.00		98	70-130	3	20	
Xylene P,M	19.5		ug/L	20.00		97	70-130	2	20	
Surrogate: 1,2-Dichloroethane-d4	*25.1*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*26.1*		ug/L	*25.00*		*104*	*70-130*			
Surrogate: Toluene-d8	*26.2*		ug/L	*25.00*		*105*	*70-130*			
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Blank										
1,1-Biphenyl	ND	99.9	mg/kg wet							
1,2,4-Trichlorobenzene	ND	99.9	mg/kg wet							
1,2-Dichlorobenzene	ND	99.9	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
1,3-Dichlorobenzene	ND	99.9	mg/kg wet							
1,4-Dichlorobenzene	ND	99.9	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	501	mg/kg wet							
2,4,5-Trichlorophenol	ND	99.9	mg/kg wet							
2,4,6-Trichlorophenol	ND	99.9	mg/kg wet							
2,4-Dichlorophenol	ND	99.9	mg/kg wet							
2,4-Dimethylphenol	ND	99.9	mg/kg wet							
2,4-Dinitrophenol	ND	501	mg/kg wet							
2,4-Dinitrotoluene	ND	99.9	mg/kg wet							
2,6-Dinitrotoluene	ND	99.9	mg/kg wet							
2-Chloronaphthalene	ND	99.9	mg/kg wet							
2-Chlorophenol	ND	99.9	mg/kg wet							
2-Methylnaphthalene	ND	99.9	mg/kg wet							
2-Methylphenol	ND	99.9	mg/kg wet							
2-Nitroaniline	ND	99.9	mg/kg wet							
2-Nitrophenol	ND	99.9	mg/kg wet							
3,3'-Dichlorobenzidine	ND	200	mg/kg wet							
3+4-Methylphenol	ND	200	mg/kg wet							
3-Nitroaniline	ND	99.9	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	501	mg/kg wet							
4-Bromophenyl-phenylether	ND	99.9	mg/kg wet							
4-Chloro-3-Methylphenol	ND	99.9	mg/kg wet							
4-Chloroaniline	ND	200	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	99.9	mg/kg wet							
4-Nitroaniline	ND	99.9	mg/kg wet							
4-Nitrophenol	ND	501	mg/kg wet							
Acenaphthene	ND	99.9	mg/kg wet							
Acenaphthylene	ND	99.9	mg/kg wet							
Acetophenone	ND	200	mg/kg wet							
Aniline	ND	200	mg/kg wet							
Anthracene	ND	99.9	mg/kg wet							
Azobenzene	ND	99.9	mg/kg wet							
Benzo(a)anthracene	ND	99.9	mg/kg wet							
Benzo(a)pyrene	ND	50.1	mg/kg wet							
Benzo(b)fluoranthene	ND	99.9	mg/kg wet							
Benzo(g,h,i)perylene	ND	99.9	mg/kg wet							
Benzo(k)fluoranthene	ND	99.9	mg/kg wet							
Benzoic Acid	ND	501	mg/kg wet							
Benzyl Alcohol	ND	99.9	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	99.9	mg/kg wet							
bis(2-Chloroethyl)ether	ND	99.9	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	99.9	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	99.9	mg/kg wet							
Butylbenzylphthalate	ND	99.9	mg/kg wet							
Carbazole	ND	99.9	mg/kg wet							
Chrysene	ND	50.1	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Dibenzo(a,h)Anthracene	ND	50.1	mg/kg wet							
Dibenzofuran	ND	99.9	mg/kg wet							
Diethylphthalate	ND	99.9	mg/kg wet							
Dimethylphthalate	ND	99.9	mg/kg wet							
Di-n-butylphthalate	ND	99.9	mg/kg wet							
Di-n-octylphthalate	ND	99.9	mg/kg wet							
Fluoranthene	ND	99.9	mg/kg wet							
Fluorene	ND	99.9	mg/kg wet							
Hexachlorobenzene	ND	50.1	mg/kg wet							
Hexachlorobutadiene	ND	99.9	mg/kg wet							
Hexachlorocyclopentadiene	ND	501	mg/kg wet							
Hexachloroethane	ND	99.9	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	99.9	mg/kg wet							
Isophorone	ND	99.9	mg/kg wet							
Naphthalene	ND	99.9	mg/kg wet							
Nitrobenzene	ND	99.9	mg/kg wet							
N-Nitrosodimethylamine	ND	99.9	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	99.9	mg/kg wet							
N-nitrosodiphenylamine	ND	99.9	mg/kg wet							
Pentachlorophenol	ND	501	mg/kg wet							
Phenanthrene	ND	99.9	mg/kg wet							
Phenol	ND	99.9	mg/kg wet							
Pyrene	ND	99.9	mg/kg wet							
Pyridine	ND	501	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*97.5*		mg/kg wet	*100.0*		*98*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*123*		mg/kg wet	*150.0*		*82*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*156*		mg/kg wet	*150.0*		*104*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*105*		mg/kg wet	*100.0*		*105*	*30-130*			
Surrogate: 2-Fluorophenol	*148*		mg/kg wet	*150.0*		*98*	*30-130*			
Surrogate: Nitrobenzene-d5	*107*		mg/kg wet	*100.0*		*107*	*30-130*			
Surrogate: Phenol-d6	*158*		mg/kg wet	*150.0*		*105*	*30-130*			
Surrogate: p-Terphenyl-d14	*106*		mg/kg wet	*100.0*		*106*	*30-130*			
LCS										
1,1-Biphenyl	120	99.9	mg/kg wet	100.0		120	40-140			
1,2,4-Trichlorobenzene	117	99.9	mg/kg wet	100.0		117	40-140			
1,2-Dichlorobenzene	119	99.9	mg/kg wet	100.0		119	40-140			
1,3-Dichlorobenzene	115	99.9	mg/kg wet	100.0		115	40-140			
1,4-Dichlorobenzene	121	99.9	mg/kg wet	100.0		121	40-140			
2,3,4,6-Tetrachlorophenol	99.4	501	mg/kg wet	100.0		99	30-130			
2,4,5-Trichlorophenol	123	99.9	mg/kg wet	100.0		123	30-130			
2,4,6-Trichlorophenol	109	99.9	mg/kg wet	100.0		109	30-130			
2,4-Dichlorophenol	119	99.9	mg/kg wet	100.0		119	30-130			
2,4-Dimethylphenol	115	99.9	mg/kg wet	100.0		115	30-130			
2,4-Dinitrophenol	ND	501	mg/kg wet	100.0			30-130			B-
2,4-Dinitrotoluene	107	99.9	mg/kg wet	100.0		107	40-140			
2,6-Dinitrotoluene	109	99.9	mg/kg wet	100.0		109	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
2-Chloronaphthalene	110	99.9	mg/kg wet	100.0		110	40-140			
2-Chlorophenol	110	99.9	mg/kg wet	100.0		110	30-130			
2-Methylnaphthalene	124	99.9	mg/kg wet	100.0		124	40-140			
2-Methylphenol	114	99.9	mg/kg wet	100.0		114	30-130			
2-Nitroaniline	111	99.9	mg/kg wet	100.0		111	40-140			
2-Nitrophenol	110	99.9	mg/kg wet	100.0		110	30-130			
3,3'-Dichlorobenzidine	116	200	mg/kg wet	100.0		116	40-140			
3+4-Methylphenol	231	200	mg/kg wet	200.0		116	30-130			
3-Nitroaniline	98.4	99.9	mg/kg wet	100.0		98	40-140			
4,6-Dinitro-2-Methylphenol	69.0	501	mg/kg wet	100.0		69	30-130			
4-Bromophenyl-phenylether	106	99.9	mg/kg wet	100.0		106	40-140			
4-Chloro-3-Methylphenol	113	99.9	mg/kg wet	100.0		113	30-130			
4-Chloroaniline	75.8	200	mg/kg wet	100.0		76	40-140			
4-Chloro-phenyl-phenyl ether	118	99.9	mg/kg wet	100.0		118	40-140			
4-Nitroaniline	108	99.9	mg/kg wet	100.0		108	40-140			
4-Nitrophenol	106	501	mg/kg wet	100.0		106	30-130			
Acenaphthene	117	99.9	mg/kg wet	100.0		117	40-140			
Acenaphthylene	106	99.9	mg/kg wet	100.0		106	40-140			
Acetophenone	120	200	mg/kg wet	100.0		120	40-140			
Aniline	75.1	200	mg/kg wet	100.0		75	40-140			
Anthracene	113	99.9	mg/kg wet	100.0		113	40-140			
Azobenzene	104	99.9	mg/kg wet	100.0		104	40-140			
Benzo(a)anthracene	111	99.9	mg/kg wet	100.0		111	40-140			
Benzo(a)pyrene	104	50.1	mg/kg wet	100.0		104	40-140			
Benzo(b)fluoranthene	91.8	99.9	mg/kg wet	100.0		92	40-140			
Benzo(g,h,i)perylene	98.1	99.9	mg/kg wet	100.0		98	40-140			
Benzo(k)fluoranthene	108	99.9	mg/kg wet	100.0		108	40-140			
Benzoic Acid	113	501	mg/kg wet	100.0		113	40-140			
Benzyl Alcohol	115	99.9	mg/kg wet	100.0		115	40-140			
bis(2-Chloroethoxy)methane	112	99.9	mg/kg wet	100.0		112	40-140			
bis(2-Chloroethyl)ether	116	99.9	mg/kg wet	100.0		116	40-140			
bis(2-chloroisopropyl)Ether	96.7	99.9	mg/kg wet	100.0		97	40-140			
bis(2-Ethylhexyl)phthalate	122	99.9	mg/kg wet	100.0		122	40-140			
Butylbenzylphthalate	119	99.9	mg/kg wet	100.0		119	40-140			
Carbazole	111	99.9	mg/kg wet	100.0		111	40-140			
Chrysene	121	50.1	mg/kg wet	100.0		121	40-140			
Dibenzo(a,h)Anthracene	107	50.1	mg/kg wet	100.0		107	40-140			
Dibenzofuran	114	99.9	mg/kg wet	100.0		114	40-140			
Diethylphthalate	117	99.9	mg/kg wet	100.0		117	40-140			
Dimethylphthalate	115	99.9	mg/kg wet	100.0		115	40-140			
Di-n-butylphthalate	109	99.9	mg/kg wet	100.0		109	40-140			
Di-n-octylphthalate	114	99.9	mg/kg wet	100.0		114	40-140			
Fluoranthene	113	99.9	mg/kg wet	100.0		113	40-140			
Fluorene	115	99.9	mg/kg wet	100.0		115	40-140			
Hexachlorobenzene	107	50.1	mg/kg wet	100.0		107	40-140			
Hexachlorobutadiene	121	99.9	mg/kg wet	100.0		121	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Hexachlorocyclopentadiene	ND	501	mg/kg wet	100.0			40-140			B-
Hexachloroethane	99.3	99.9	mg/kg wet	100.0		99	40-140			
Indeno(1,2,3-cd)Pyrene	103	99.9	mg/kg wet	100.0		103	40-140			
Isophorone	105	99.9	mg/kg wet	100.0		105	40-140			
Naphthalene	113	99.9	mg/kg wet	100.0		113	40-140			
Nitrobenzene	116	99.9	mg/kg wet	100.0		116	40-140			
N-Nitrosodimethylamine	98.8	99.9	mg/kg wet	100.0		99	40-140			
N-Nitroso-Di-n-Propylamine	116	99.9	mg/kg wet	100.0		116	40-140			
N-nitrosodiphenylamine	117	99.9	mg/kg wet	100.0		117	40-140			
Pentachlorophenol	96.8	501	mg/kg wet	100.0		97	30-130			
Phenanthrene	107	99.9	mg/kg wet	100.0		107	40-140			
Phenol	116	99.9	mg/kg wet	100.0		116	30-130			
Pyrene	120	99.9	mg/kg wet	100.0		120	40-140			
Pyridine	118	501	mg/kg wet	100.0		118	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*109*		mg/kg wet	*100.0*		*109*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*151*		mg/kg wet	*150.0*		*100*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*175*		mg/kg wet	*150.0*		*117*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*120*		mg/kg wet	*100.0*		*120*	*30-130*			
Surrogate: 2-Fluorophenol	*170*		mg/kg wet	*150.0*		*113*	*30-130*			
Surrogate: Nitrobenzene-d5	*115*		mg/kg wet	*100.0*		*115*	*30-130*			
Surrogate: Phenol-d6	*176*		mg/kg wet	*150.0*		*117*	*30-130*			
Surrogate: p-Terphenyl-d14	*123*		mg/kg wet	*100.0*		*123*	*30-130*			
LCS Dup										
1,1-Biphenyl	117	99.9	mg/kg wet	100.0		117	40-140	3	30	
1,2,4-Trichlorobenzene	115	99.9	mg/kg wet	100.0		115	40-140	2	30	
1,2-Dichlorobenzene	116	99.9	mg/kg wet	100.0		116	40-140	2	30	
1,3-Dichlorobenzene	115	99.9	mg/kg wet	100.0		115	40-140	0.5	30	
1,4-Dichlorobenzene	117	99.9	mg/kg wet	100.0		117	40-140	3	30	
2,3,4,6-Tetrachlorophenol	98.4	501	mg/kg wet	100.0		98	30-130	1	30	
2,4,5-Trichlorophenol	123	99.9	mg/kg wet	100.0		123	30-130	0.2	30	
2,4,6-Trichlorophenol	109	99.9	mg/kg wet	100.0		109	30-130	0.09	30	
2,4-Dichlorophenol	120	99.9	mg/kg wet	100.0		120	30-130	0.8	30	
2,4-Dimethylphenol	116	99.9	mg/kg wet	100.0		116	30-130	0.7	30	
2,4-Dinitrophenol	ND	501	mg/kg wet	100.0			30-130		30	B-
2,4-Dinitrotoluene	109	99.9	mg/kg wet	100.0		109	40-140	2	30	
2,6-Dinitrotoluene	107	99.9	mg/kg wet	100.0		107	40-140	1	30	
2-Chloronaphthalene	108	99.9	mg/kg wet	100.0		108	40-140	2	30	
2-Chlorophenol	110	99.9	mg/kg wet	100.0		110	30-130	0.3	30	
2-Methylnaphthalene	125	99.9	mg/kg wet	100.0		125	40-140	0.5	30	
2-Methylphenol	114	99.9	mg/kg wet	100.0		114	30-130	0.4	30	
2-Nitroaniline	111	99.9	mg/kg wet	100.0		111	40-140	0.6	30	
2-Nitrophenol	109	99.9	mg/kg wet	100.0		109	30-130	2	30	
3,3'-Dichlorobenzidine	115	200	mg/kg wet	100.0		115	40-140	0.5	30	
3+4-Methylphenol	231	200	mg/kg wet	200.0		115	30-130	0.2	30	
3-Nitroaniline	96.4	99.9	mg/kg wet	100.0		96	40-140	2	30	
4,6-Dinitro-2-Methylphenol	67.6	501	mg/kg wet	100.0		68	30-130	2	30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
4-Bromophenyl-phenylether	105	99.9	mg/kg wet	100.0		105	40-140	1	30	
4-Chloro-3-Methylphenol	113	99.9	mg/kg wet	100.0		113	30-130	0.4	30	
4-Chloroaniline	74.9	200	mg/kg wet	100.0		75	40-140	1	30	
4-Chloro-phenyl-phenyl ether	118	99.9	mg/kg wet	100.0		118	40-140	0.2	30	
4-Nitroaniline	109	99.9	mg/kg wet	100.0		109	40-140	0.6	30	
4-Nitrophenol	104	501	mg/kg wet	100.0		104	30-130	3	30	
Acenaphthene	117	99.9	mg/kg wet	100.0		117	40-140	0.3	30	
Acenaphthylene	102	99.9	mg/kg wet	100.0		102	40-140	4	30	
Acetophenone	120	200	mg/kg wet	100.0		120	40-140	0.4	30	
Aniline	74.3	200	mg/kg wet	100.0		74	40-140	1	30	
Anthracene	110	99.9	mg/kg wet	100.0		110	40-140	3	30	
Azobenzene	102	99.9	mg/kg wet	100.0		102	40-140	1	30	
Benzo(a)anthracene	110	99.9	mg/kg wet	100.0		110	40-140	0.8	30	
Benzo(a)pyrene	103	50.1	mg/kg wet	100.0		103	40-140	1	30	
Benzo(b)fluoranthene	89.0	99.9	mg/kg wet	100.0		89	40-140	3	30	
Benzo(g,h,i)perylene	97.9	99.9	mg/kg wet	100.0		98	40-140	0.2	30	
Benzo(k)fluoranthene	106	99.9	mg/kg wet	100.0		106	40-140	2	30	
Benzoic Acid	118	501	mg/kg wet	100.0		118	40-140	5	30	
Benzyl Alcohol	112	99.9	mg/kg wet	100.0		112	40-140	3	30	
bis(2-Chloroethoxy)methane	114	99.9	mg/kg wet	100.0		114	40-140	2	30	
bis(2-Chloroethyl)ether	116	99.9	mg/kg wet	100.0		116	40-140	0.2	30	
bis(2-chloroisopropyl)Ether	94.9	99.9	mg/kg wet	100.0		95	40-140	2	30	
bis(2-Ethylhexyl)phthalate	121	99.9	mg/kg wet	100.0		121	40-140	0.7	30	
Butylbenzylphthalate	116	99.9	mg/kg wet	100.0		116	40-140	2	30	
Carbazole	110	99.9	mg/kg wet	100.0		110	40-140	1	30	
Chrysene	119	50.1	mg/kg wet	100.0		119	40-140	2	30	
Dibenzo(a,h)Anthracene	107	50.1	mg/kg wet	100.0		107	40-140	0.5	30	
Dibenzofuran	114	99.9	mg/kg wet	100.0		114	40-140	0	30	
Diethylphthalate	116	99.9	mg/kg wet	100.0		116	40-140	0.8	30	
Dimethylphthalate	113	99.9	mg/kg wet	100.0		113	40-140	1	30	
Di-n-butylphthalate	105	99.9	mg/kg wet	100.0		105	40-140	3	30	
Di-n-octylphthalate	116	99.9	mg/kg wet	100.0		116	40-140	1	30	
Fluoranthene	109	99.9	mg/kg wet	100.0		109	40-140	3	30	
Fluorene	114	99.9	mg/kg wet	100.0		114	40-140	0.7	30	
Hexachlorobenzene	106	50.1	mg/kg wet	100.0		106	40-140	0.2	30	
Hexachlorobutadiene	123	99.9	mg/kg wet	100.0		123	40-140	2	30	
Hexachlorocyclopentadiene	ND	501	mg/kg wet	100.0			40-140		30	B-
Hexachloroethane	101	99.9	mg/kg wet	100.0		101	40-140	1	30	
Indeno(1,2,3-cd)Pyrene	102	99.9	mg/kg wet	100.0		102	40-140	1	30	
Isophorone	104	99.9	mg/kg wet	100.0		104	40-140	0.6	30	
Naphthalene	114	99.9	mg/kg wet	100.0		114	40-140	0.4	30	
Nitrobenzene	116	99.9	mg/kg wet	100.0		116	40-140	0.5	30	
N-Nitrosodimethylamine	99.8	99.9	mg/kg wet	100.0		100	40-140	1	30	
N-Nitroso-Di-n-Propylamine	114	99.9	mg/kg wet	100.0		114	40-140	2	30	
N-nitrosodiphenylamine	115	99.9	mg/kg wet	100.0		115	40-140	2	30	
Pentachlorophenol	96.9	501	mg/kg wet	100.0		97	30-130	0.1	30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Phenanthrene	107	99.9	mg/kg wet	100.0		107	40-140	0.3	30	
Phenol	118	99.9	mg/kg wet	100.0		118	30-130	1	30	
Pyrene	120	99.9	mg/kg wet	100.0		120	40-140	0.5	30	
Pyridine	116	501	mg/kg wet	100.0		116	40-140	2	30	
Surrogate: 1,2-Dichlorobenzene-d4	*110*		mg/kg wet	*100.0*		*110*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*152*		mg/kg wet	*150.0*		*102*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*174*		mg/kg wet	*150.0*		*116*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*116*		mg/kg wet	*100.0*		*116*	*30-130*			
Surrogate: 2-Fluorophenol	*165*		mg/kg wet	*150.0*		*110*	*30-130*			
Surrogate: Nitrobenzene-d5	*113*		mg/kg wet	*100.0*		*113*	*30-130*			
Surrogate: Phenol-d6	*171*		mg/kg wet	*150.0*		*114*	*30-130*			
Surrogate: p-Terphenyl-d14	*123*		mg/kg wet	*100.0*		*123*	*30-130*			
Duplicate **Source: 0806089-03**										
1,1-Biphenyl	ND	500	mg/kg wet		ND				30	
1,2,4-Trichlorobenzene	ND	500	mg/kg wet		ND				30	
1,2-Dichlorobenzene	ND	500	mg/kg wet		ND				30	
1,3-Dichlorobenzene	ND	500	mg/kg wet		ND				30	
1,4-Dichlorobenzene	ND	500	mg/kg wet		ND				30	
2,3,4,6-Tetrachlorophenol	ND	2500	mg/kg wet		ND				30	
2,4,5-Trichlorophenol	ND	500	mg/kg wet		ND				30	
2,4,6-Trichlorophenol	ND	500	mg/kg wet		ND				30	
2,4-Dichlorophenol	ND	500	mg/kg wet		ND				30	
2,4-Dimethylphenol	ND	500	mg/kg wet		ND				30	
2,4-Dinitrophenol	ND	2500	mg/kg wet		ND				30	
2,4-Dinitrotoluene	ND	500	mg/kg wet		ND				30	
2,6-Dinitrotoluene	ND	500	mg/kg wet		ND				30	
2-Chloronaphthalene	ND	500	mg/kg wet		ND				30	
2-Chlorophenol	ND	500	mg/kg wet		ND				30	
2-Methylnaphthalene	ND	500	mg/kg wet		137			200	30	D+
2-Methylphenol	ND	500	mg/kg wet		ND				30	
2-Nitroaniline	ND	500	mg/kg wet		ND				30	
2-Nitrophenol	ND	500	mg/kg wet		ND				30	
3,3'-Dichlorobenzidine	ND	1000	mg/kg wet		ND				30	
3+4-Methylphenol	ND	1000	mg/kg wet		ND				30	
3-Nitroaniline	ND	500	mg/kg wet		ND				30	
4,6-Dinitro-2-Methylphenol	ND	2500	mg/kg wet		ND				30	
4-Bromophenyl-phenylether	ND	500	mg/kg wet		ND				30	
4-Chloro-3-Methylphenol	ND	500	mg/kg wet		ND				30	
4-Chloroaniline	ND	1000	mg/kg wet		ND				30	
4-Chloro-phenyl-phenyl ether	ND	500	mg/kg wet		ND				30	
4-Nitroaniline	ND	500	mg/kg wet		ND				30	
4-Nitrophenol	ND	2500	mg/kg wet		ND				30	
Acenaphthene	ND	500	mg/kg wet		ND				30	
Acenaphthylene	ND	500	mg/kg wet		ND				30	
Acetophenone	ND	1000	mg/kg wet		ND				30	
Aniline	ND	1000	mg/kg wet		ND				30	

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Anthracene	ND	500	mg/kg wet		ND				30	
Azobenzene	ND	500	mg/kg wet		ND				30	
Benzo(a)anthracene	ND	500	mg/kg wet		ND				30	
Benzo(a)pyrene	ND	250	mg/kg wet		ND				30	
Benzo(b)fluoranthene	ND	500	mg/kg wet		ND				30	
Benzo(g,h,i)perylene	ND	500	mg/kg wet		ND				30	
Benzo(k)fluoranthene	ND	500	mg/kg wet		ND				30	
Benzoic Acid	ND	2500	mg/kg wet		ND				30	
Benzyl Alcohol	ND	500	mg/kg wet		ND				30	
bis(2-Chloroethoxy)methane	ND	500	mg/kg wet		ND				30	
bis(2-Chloroethyl)ether	ND	500	mg/kg wet		ND				30	
bis(2-chloroisopropyl)Ether	ND	500	mg/kg wet		ND				30	
bis(2-Ethylhexyl)phthalate	2250	500	mg/kg wet		2530			12	30	
Butylbenzylphthalate	ND	500	mg/kg wet		ND				30	
Carbazole	ND	500	mg/kg wet		ND				30	
Chrysene	ND	250	mg/kg wet		ND				30	
Dibenzo(a,h)Anthracene	ND	250	mg/kg wet		ND				30	
Dibenzofuran	ND	500	mg/kg wet		ND				30	
Diethylphthalate	ND	500	mg/kg wet		ND				30	
Dimethylphthalate	ND	500	mg/kg wet		ND				30	
Di-n-butylphthalate	ND	500	mg/kg wet		ND				30	
Di-n-octylphthalate	245	500	mg/kg wet		250			2	30	
Fluoranthene	ND	500	mg/kg wet		ND				30	
Fluorene	ND	500	mg/kg wet		ND				30	
Hexachlorobenzene	ND	250	mg/kg wet		ND				30	
Hexachlorobutadiene	ND	500	mg/kg wet		ND				30	
Hexachlorocyclopentadiene	ND	2500	mg/kg wet		ND				30	
Hexachloroethane	ND	500	mg/kg wet		ND				30	
Indeno(1,2,3-cd)Pyrene	ND	500	mg/kg wet		ND				30	
Isophorone	ND	500	mg/kg wet		ND				30	
Naphthalene	658	500	mg/kg wet		778			17	30	
Nitrobenzene	ND	500	mg/kg wet		ND				30	
N-Nitrosodimethylamine	ND	500	mg/kg wet		ND				30	
N-Nitroso-Di-n-Propylamine	ND	500	mg/kg wet		ND				30	
N-nitrosodiphenylamine	ND	500	mg/kg wet		ND				30	
Pentachlorophenol	ND	2500	mg/kg wet		ND				30	
Phenanthrene	ND	500	mg/kg wet		ND				30	
Phenol	ND	500	mg/kg wet		ND				30	
Pyrene	ND	500	mg/kg wet		ND				30	
Pyridine	ND	2500	mg/kg wet		ND				30	
Surrogate: 1,2-Dichlorobenzene-d4	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Surrogate: 2,4,6-Tribromophenol	*130*		mg/kg wet	*150.0*		*87*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*140*		mg/kg wet	*150.0*		*94*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Surrogate: 2-Fluorophenol	*214*		mg/kg wet	*150.0*		*143*	*30-130*			*SM*
Surrogate: Nitrobenzene-d5	*213*		mg/kg wet	*100.0*		*213*	*30-130*			*SM*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
Surrogate: Phenol-d6	*218*		mg/kg wet	*150.0*		*146*	*30-130*			*SM*
Surrogate: p-Terphenyl-d14	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Matrix Spike Source: 0806089-03										**MM**
1,1-Biphenyl	ND	500	mg/kg wet	100.0	ND		40-140			
1,2,4-Trichlorobenzene	ND	500	mg/kg wet	100.0	ND		40-140			
1,2-Dichlorobenzene	ND	500	mg/kg wet	100.0	ND		40-140			
1,3-Dichlorobenzene	120	500	mg/kg wet	100.0	ND	120	40-140			
1,4-Dichlorobenzene	189	500	mg/kg wet	100.0	ND	189	40-140			
2,3,4,6-Tetrachlorophenol	228	2500	mg/kg wet	100.0	ND	228	30-130			
2,4,5-Trichlorophenol	172	500	mg/kg wet	100.0	ND	172	30-130			
2,4,6-Trichlorophenol	209	500	mg/kg wet	100.0	ND	209	30-130			
2,4-Dichlorophenol	ND	500	mg/kg wet	100.0	ND		30-130			
2,4-Dimethylphenol	287	500	mg/kg wet	100.0	ND	287	30-130			
2,4-Dinitrophenol	ND	2500	mg/kg wet	100.0	ND		30-130			
2,4-Dinitrotoluene	ND	500	mg/kg wet	100.0	ND		40-140			
2,6-Dinitrotoluene	215	500	mg/kg wet	100.0	ND	215	40-140			
2-Chloronaphthalene	ND	500	mg/kg wet	100.0	ND		40-140			
2-Chlorophenol	172	500	mg/kg wet	100.0	ND	172	30-130			
2-Methylnaphthalene	225	500	mg/kg wet	100.0	137	88	40-140			
2-Methylphenol	164	500	mg/kg wet	100.0	ND	164	30-130			
2-Nitroaniline	238	500	mg/kg wet	100.0	ND	238	40-140			
2-Nitrophenol	314	500	mg/kg wet	100.0	ND	314	30-130			
3,3'-Dichlorobenzidine	ND	1000	mg/kg wet	100.0	ND		40-140			
3+4-Methylphenol	ND	1000	mg/kg wet	200.0	ND		30-130			
3-Nitroaniline	ND	500	mg/kg wet	100.0	ND		40-140			
4,6-Dinitro-2-Methylphenol	370	2500	mg/kg wet	100.0	ND	370	30-130			
4-Bromophenyl-phenylether	ND	500	mg/kg wet	100.0	ND		40-140			
4-Chloro-3-Methylphenol	252	500	mg/kg wet	100.0	ND	252	30-130			
4-Chloroaniline	162	1000	mg/kg wet	100.0	ND	162	40-140			
4-Chloro-phenyl-phenyl ether	ND	500	mg/kg wet	100.0	ND		40-140			
4-Nitroaniline	ND	500	mg/kg wet	100.0	ND		40-140			
4-Nitrophenol	432	2500	mg/kg wet	100.0	ND	432	30-130			
Acenaphthene	ND	500	mg/kg wet	100.0	ND		40-140			
Acenaphthylene	ND	500	mg/kg wet	100.0	ND		40-140			
Acetophenone	2470	1000	mg/kg wet	100.0	ND	NR	40-140			
Aniline	216	1000	mg/kg wet	100.0	ND	216	40-140			
Anthracene	ND	500	mg/kg wet	100.0	ND		40-140			
Azobenzene	ND	500	mg/kg wet	100.0	ND		40-140			
Benzo(a)anthracene	ND	500	mg/kg wet	100.0	ND		40-140			
Benzo(a)pyrene	162	250	mg/kg wet	100.0	ND	162	40-140			
Benzo(b)fluoranthene	ND	500	mg/kg wet	100.0	ND		40-140			
Benzo(g,h,i)perylene	ND	500	mg/kg wet	100.0	ND		40-140			
Benzo(k)fluoranthene	ND	500	mg/kg wet	100.0	ND		40-140			
Benzoic Acid	ND	2500	mg/kg wet	100.0	ND		40-140			
Benzyl Alcohol	328	500	mg/kg wet	100.0	ND	328	40-140			

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
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ESS Laboratory Work Order: 0806089

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C Semi-Volatile Organic Compounds										
Batch BF80634 - 3580A										
bis(2-Chloroethoxy)methane	380	500	mg/kg wet	100.0	ND	380	40-140			
bis(2-Chloroethyl)ether	175	500	mg/kg wet	100.0	ND	175	40-140			
bis(2-chloroisopropyl)Ether	320	500	mg/kg wet	100.0	ND	320	40-140			
bis(2-Ethylhexyl)phthalate	2440	500	mg/kg wet	100.0	2530	NR	40-140			
Butylbenzylphthalate	158	500	mg/kg wet	100.0	ND	158	40-140			
Carbazole	ND	500	mg/kg wet	100.0	ND		40-140			
Chrysene	129	250	mg/kg wet	100.0	ND	129	40-140			
Dibenzo(a,h)Anthracene	238	250	mg/kg wet	100.0	ND	238	40-140			
Dibenzofuran	ND	500	mg/kg wet	100.0	ND		40-140			
Diethylphthalate	ND	500	mg/kg wet	100.0	ND		40-140			
Dimethylphthalate	ND	500	mg/kg wet	100.0	ND		40-140			
Di-n-butylphthalate	ND	500	mg/kg wet	100.0	ND		40-140			
Di-n-octylphthalate	336	500	mg/kg wet	100.0	250	86	40-140			
Fluoranthene	ND	500	mg/kg wet	100.0	ND		40-140			
Fluorene	208	500	mg/kg wet	100.0	ND	208	40-140			
Hexachlorobenzene	ND	250	mg/kg wet	100.0	ND		40-140			
Hexachlorobutadiene	ND	500	mg/kg wet	100.0	ND		40-140			
Hexachlorocyclopentadiene	ND	2500	mg/kg wet	100.0	ND		40-140			
Hexachloroethane	936	500	mg/kg wet	100.0	ND	936	40-140			
Indeno(1,2,3-cd)Pyrene	274	500	mg/kg wet	100.0	ND	274	40-140			
Isophorone	126	500	mg/kg wet	100.0	ND	126	40-140			
Naphthalene	744	500	mg/kg wet	100.0	778	NR	40-140			
Nitrobenzene	170	500	mg/kg wet	100.0	ND	170	40-140			
N-Nitrosodimethylamine	218	500	mg/kg wet	100.0	ND	218	40-140			
N-Nitroso-Di-n-Propylamine	1270	500	mg/kg wet	100.0	ND	NR	40-140			
N-nitrosodiphenylamine	125	500	mg/kg wet	100.0	ND	125	40-140			
Pentachlorophenol	ND	2500	mg/kg wet	100.0	ND		30-130			
Phenanthrene	ND	500	mg/kg wet	100.0	ND		40-140			
Phenol	ND	500	mg/kg wet	100.0	ND		30-130			
Pyrene	ND	500	mg/kg wet	100.0	ND		40-140			
Pyridine	ND	2500	mg/kg wet	100.0	ND		40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Surrogate: 2,4,6-Tribromophenol	*144*		mg/kg wet	*150.0*		*96*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*164*		mg/kg wet	*150.0*		*109*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*
Surrogate: 2-Fluorophenol	*146*		mg/kg wet	*150.0*		*97*	*30-130*			
Surrogate: Nitrobenzene-d5	*414*		mg/kg wet	*100.0*		*414*	*30-130*			*SM*
Surrogate: Phenol-d6	*268*		mg/kg wet	*150.0*		*179*	*30-130*			*SM*
Surrogate: p-Terphenyl-d14	*ND*		mg/kg wet	*100.0*			*30-130*			*SM*

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away ESS Laboratory Work Order: 0806089

Notes and Definitions

U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution is present).
SD	Surrogate recovery(ies) diluted below the MRL.
P	Percent difference between primary and confirmation results exceeds 40%.
MM	Majority of matrix spike compounds are outside of criteria due to matrix interferences.
MD	Matrix Spike is diluted below the MRL.
M+	Matrix Spike recovery is above upper control limit.
E	Reported above the quantitation limit; Estimated value.
D+	Relative percent difference for duplicate is outside of criteria.
D	Diluted.
C-	Continuing Calibration recovery is below lower control limit.
B+	Blank Spike recovery is above upper control limit.
B-	Blank Spike recovery is below lower control limit.
ND	Analyte NOT DETECTED above the detection limit
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.

CERTIFICATE OF ANALYSIS

Client Name: EA Engineering, Science, and Technology
Client Project ID: Truck Away

ESS Laboratory Work Order: 0806089

ESS LABORATORY CERTIFICATIONS

U.S. Army Corps of Engineers
Soil and Water

Navy Installation Restoration QA Program
Soil and Water

Rhode Island: A-179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire (NELAP accredited): 242405
Potable Water
Non Potable Water

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

United States Department of Agriculture
Soil Permit: S-54210

New Jersey (NELAP accredited): RI002
Potable Water
Non Potable Water
Soil and Hazardous Waste

Maryland: 301
Potable Water

ESS Laboratory

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www.esslaboratory.com

CHAIN OF CUSTODY

Page 1 of 1

Turn Time ✓ Standard Other _____
If faster than 5 days, prior approval by laboratory is required # _____

State where samples were collected from:
MA (RI) CT NH NJ NY ME Other _____

Is this project for any of the following:
MA-MCP Navy USACE Other _____

Reporting Limits: GA

ESS LAB PROJECT ID: 0806089

Electronic Deliverable X Yes ___ No

Format: Excel ___ Access ___ PDF X Other _____

Co. Name	Project #	Project Name (20 Char. or less)
EA Engineering	62220.01	TRUK-AWAY

Contact Person	Address
Jill Parrett	

City	State	Zip	PO#
Warwick	RI	02886	

Telephone #	Fax #	Email Address
401-736-3440	401-736-3423	jparrett@eaest.com

ESS LAB Sample#	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	Number of Containers	Type of Containers	8260 VOA	624	524.2	8021 MTBE/BTEX	8015 GRO	VPH w/target	8100 TPH	8015 DRO	EPH w/PAHs	EPH 4 Diesel	8081 Pesticides	8082 PCB	608 Pesticides	608 PCB	8270 SVOA	625	PAH 8270	RCRA5	RCRA8	PP13	TAL23	TCLP-RCRA8	NBC?	MCP-METALS (13)	MCP-METALS (13) w/Hg
1	6/5/08	0937		X	GW	MW EA-2	2	3	V	X																									
2	↓	0950		X	GW	MW EA-1	2	3	V	X																									
3		1020		X	O	MW-3	1	1	G	X												X		X											
4		1218		X	GW	MW-8	2	3	V	X																									
5		1220		X	GW	MW-1	2	3	V	X																									
6		1442		X	GW	MW-6	2	3	V	X																									
7		1500		X	GW	MW-5	2	3	V	X																									
8	↓	1600		X	GW	MW-7	2	3	V	X																									
9		—				Trip Blank	2	1	V	X																									

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

Cooler Present ✓ Yes ___ No Internal Use Only

Seals Intact ___ Yes ___ No NA: ✓ [~~C~~ Pickup

Cooler Temp: 3.8° [ ] Technicians _____

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

Sampled by: Paul Theroux & Ron Mack

Comments:

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Paul Theroux	6/6/08 0958		6/6/08 0958		6/8/1019		6/6/08 10:19
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time

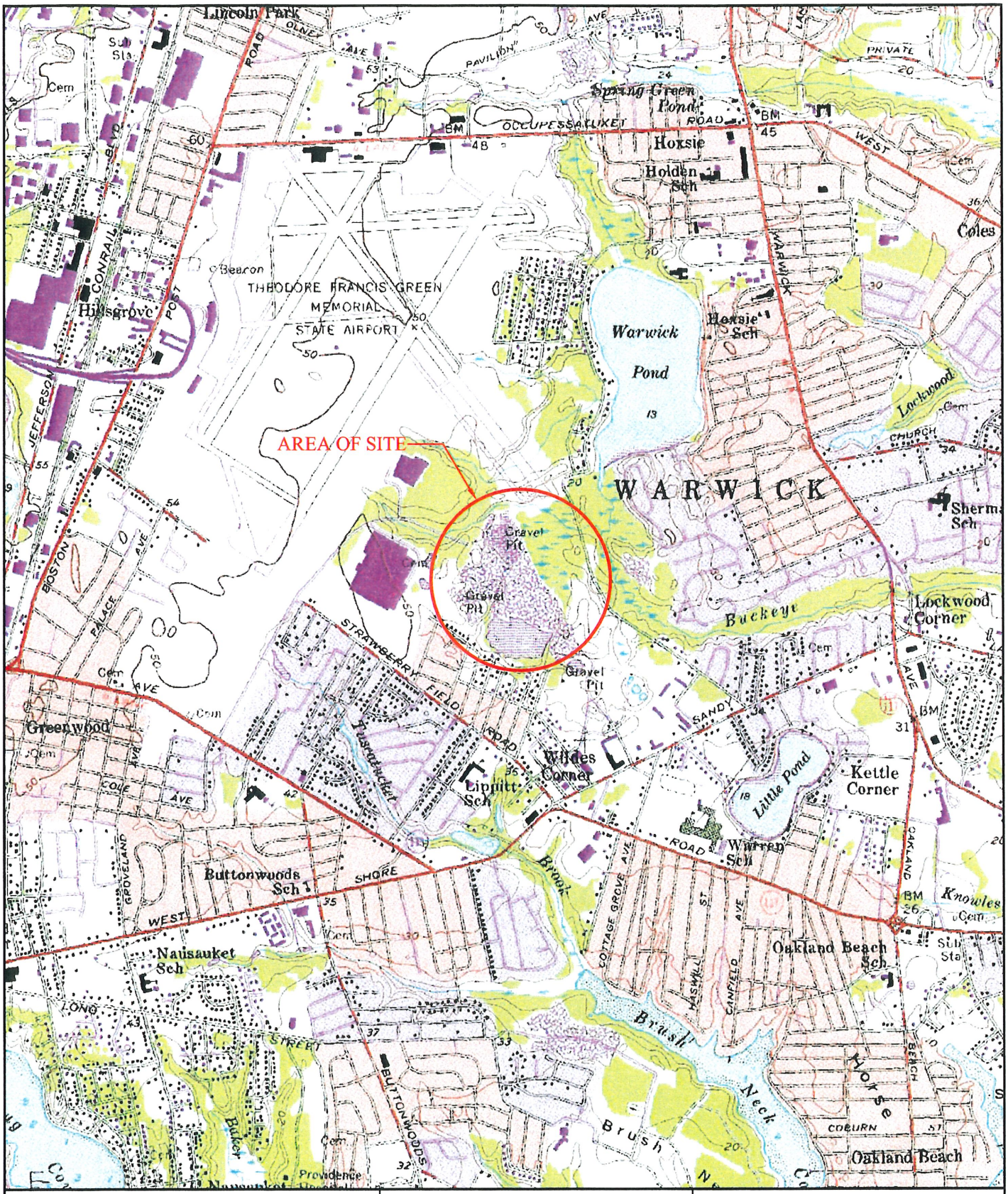
*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A

Please fax all changes to Chain of Custody in writing.

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

10/26/04 B

Figures

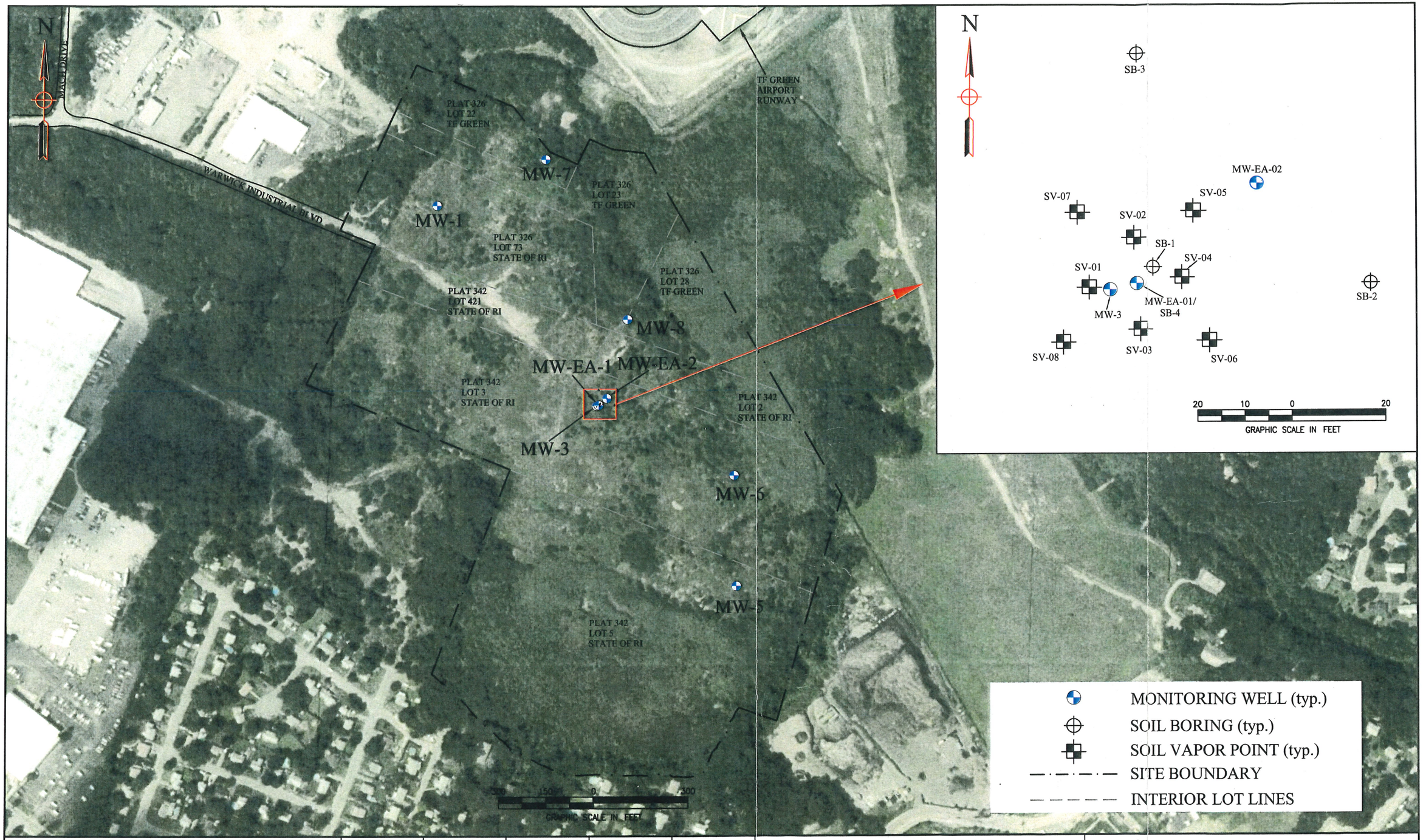


EA ENGINEERING, SCIENCE, AND TECHNOLOGY

SITE INVESTIGATION REPORT
FORMER TRUK-AWAY LANDFILL
WARWICK INDUSTRIAL DRIVE
WARWICK, RHODE ISLAND

LOCUS MAP
FIGURE 1
EAST GREENWICH QUADRANGLE
USGS 1957

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FIGURE
JAP	RGM	RGM	JAP	NONE	AUGUST 2008	62220.01	1



MONITORING WELL (typ.)
SOIL BORING (typ.)
SOIL VAPOR POINT (typ.)
SITE BOUNDARY
INTERIOR LOT LINES

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DESIGNED BY	DRAWN BY	DATE	PROJECT NO.	FILE NAME
RGM	RGM	AUGUST 2008	62220.01	SITE PLAN
CHECKED BY	**PROJECT MGR.**	**SCALE**	**DRAWING NO.**	**FIGURE**
JAP	JAP	AS NOTED	–	2

SITE INVESTIGATION REPORT
FORMER TRUK–AWAY LANDFILL
WARWICK INDUSTRIAL DRIVE
WARWICK, RHODE ISLAND

SITE INVESTIGATION PLAN
FIGURE 2

On 29 May 2008, EA installed a second groundwater monitoring well (MW-EA-02) downgradient of the previously encountered pressurized landfill gas at MW-EA-01. MW-EA-02 was installed to a total depth of 25 ft bgs, and was constructed with 15 ft of solid PVC riser and ten feet of 0.010 screened PVC at the bottom of the well. The annulus of bore hole was filled with No. 1 filter sand to two feet above the screened interval and a bentonite seal was placed above the sand pack. Native soils and fill were used to fill the remainder of the annulus.

3.2 SOIL GAS SURVEY

EA retained a Geoprobe contractor to install 1-in. soil vapor sampling points throughout the Site. On 29 May 2008, a total of nine soil vapor points were installed in the vicinity of the previously encountered pocket of landfill gas. Approximate locations are depicted on Figure 2. At each location, the 1-in. PVC point was installed to a depth of 6 ft. bgs. The bottom 1 ft of this PVC was screened with 0.010-in. slotted screen, and the remainder of the point was solid PVC riser. Polyethylene tubing was installed through a drilled hole in the top of the well to allow for subsequent monitoring with field equipment. Following the installation of each PVC point, the annular space was filled with No. 1 sand, a bentonite seal was installed above the screened portion, and the point was capped. Prior to recording soil gas concentrations, each point was purged for at least 2 minutes to remove residual vapor from previous points or ambient air in the PVC. Concentrations of VOCs were measured using a photo-ionization detector (PID), and concentrations of oxygen, methane, carbon dioxide, and hydrogen sulfide were measured using a portable landfill gas meter. Results are summarized in Table 1 below.

TABLE 1 SOIL GAS SCREENING RESULTS – 29 MAY 2008

SVE Point ID	% Methane (CH_4)	% Carbon Dioxide (CO_2)	% Oxygen (O_2)	VOCs (ppm)
SV-01	71.1	36.0	0.2	1.7
SV-02	71.3	35.2	0.5	2.0
SV-03	41.7	16.6	8.2	0.45
SV-04	34.8	14.7	10.5	1.3
SV-05	62.3	30.6	3.1	2.5
SV-06	41.2	8.2	18.6	1.5
SV-07	0.4	0.1	21.7	3.7
SV-08	59.2	28.7	04.6	1.7
SV-09	37.9	16.4	9.9	1.5
Note: The Lower Explosive Limit (LEL) for methane is 5% methane.				

Results of this soil gas survey indicate that the levels of soil gas present at the former landfill exceed the Lower Explosive Limit (LEL) for methane at all but one location in the vicinity of MW-3.

3.3 GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING

On 4 June 2008, EA performed one round of groundwater sampling at all Site wells. The wells were sampled using a peristaltic pump and dedicated polyethylene tubing in accordance with the Environmental Protection Agency's (EPA) Low-Flow Procedure. Data collected from each well

immediately prior to sampling are summarized in Table 2 below, and the complete groundwater monitoring data is included as Appendix B.

TABLE 2 GROUNDWATER MONITORING DATA – 5 JUNE 2008

	MW-EA1	MW-EA2	MW-1	MW-5	MW-6	MW-7	MW-8
Time	9:45	9:32	12:15	14:55	14:37	15:50	12:13
Water Level (ft bgs)	17.33	22.05	16.34	14.13	21.15	4.57	20.13
Temperature (°C)	12.73	12.61	10.93	12.34	14.82	12.09	12.97
pH	6.15	6.12	6.04	6.35	6.96	6.62	6.21
Conductivity (mS/cm)	1151	1098	695	1191	4660	748	1151
Oxidation/Reduction Potential (mV)	-101.9	-114.6	-92.1	-111.9	-162.2	-138.9	-99.7
Dissolved Oxygen (mg/L)	0.94	0.32	16.42	4.99	0.19	0.18	0.25
Turbidity (NTU)	3.76	7.6	8.67	0.49	3.8	4.47	9.0
Volume Purged (gallons)	2.5	1.4	1.25	1.25	1.5	1.0	1.2

Note: mS/cm = Milisiemens per centimeter.
mV = Milivolts.
NTU = Normal Turbidity Units.

As specified in the Site Investigation Work Plan, prepared by EA and approved by the RIDEM, all samples were placed in a cooler with ice and transported to a Rhode Island Certified Laboratory for analysis of VOCs via EPA method 8260. Analytical results indicate compliance with all RIDEM GB Groundwater Objectives. Concentrations of detected analytes are summarized in Table 3 below. Certificates of Analysis are included as Appendix C.

TABLE 3 GROUNDWATER ANALYTICAL RESULTS – 5 JUNE 2008

Analyte Detected	MW-EA1	MW-EA2	MW-1	MW-5	MW-6	MW-7	MW-8	RIDEM GB-LC
1,1,1-Trichloroethane	0.0243	ND	ND	ND	ND	ND	ND	3.1
1,1-Dichloroethane	0.128	0.0019	0.0112	ND	ND	ND	ND	--
1,1-Dichloroethene	ND	ND	0.0012	ND	ND	ND	ND	0.007
1,2,4-Trichlorobenzene	ND	ND	0.0010	ND	ND	ND	ND	--
1,2,4-Trimethylbenzene	0.684	0.0297	0.0164	0.0466	0.0428	ND	0.0395	--
1,2-Dichlorobenzene	0.0014	ND	0.0331	0.0017	ND	ND	0.0015	--
1,2-Dichloroethane	0.0019	0.0013	ND	ND	ND	ND	ND	0.11
1,3,5-Trimethylbenzene	0.175	0.0081	0.0042	0.0101	0.0011	ND	0.0088	--
1,3-Dichlorobenzene	ND	ND	0.0043	ND	ND	ND	ND	--
1,4-Dichlorobenzene	0.0139	0.0061	0.0212	0.0136	0.0098	ND	0.0076	--
1,4-Dioxane Screen	ND	ND	ND	1.39	6.72	ND	ND	--
4-Isopropyltoluene	0.0100	ND	0.0011	ND	ND	ND	0.0016	--
Benzene	0.0276	0.0376	0.0154	0.0130	0.0086	0.0027	0.0198	0.14
Chlorobenzene	0.0276	0.0384	0.196	0.0610	0.0239	ND	0.0308	3.2
Chloroethane	4.89	1.76	1.38	0.0241	0.0295	0.0091	0.252	--
cis-1,2-Dichloroethene	0.0029	0.0011	0.0402	0.0012	ND	ND	ND	2.4
Diethyl Ether	0.0131	0.0117	0.0333	0.0070	0.0387	0.0060	0.0048	--
Ethylbenzene	0.0665	0.0236	0.0133	0.0023	ND	ND	0.117	1.6
Isopropylbenzene	0.0455	0.0036	0.0048	0.0068	0.0042	ND	0.0089	--
Methylene Chloride	0.0069	0.0046	ND	ND	ND	ND	ND	--
Naphthalene	0.143	0.0216	0.0231	0.0715	0.0331	ND	0.0940	--
n-Propylbenzene	0.0641	0.0034	0.0033	0.0061	0.0047	ND	0.0065	--
Styrene	0.0020	ND	ND	ND	ND	ND	ND	2.2
Tetrahydrofuran	0.0149	0.0052	0.0065	0.0660	0.802	0.0102	0.0107	--
Toluene	1.25	0.0126	0.0022	0.0018	ND	ND	0.0040	1.7
trans-1,2-Dichloroethene	0.0014	ND	ND	ND	ND	ND	ND	2.8
Trichloroethene	0.0011	ND	0.0139	ND	ND	ND	ND	0.54
Vinyl Chloride	0.0016	ND	0.0130	ND	ND	ND	ND	--
Xylenes (Total)	0.196	0.243	0.438	0.151	0.0275	ND	1.46	--

Note: All results reported in mg/L.
ND = Not detected above the laboratory Method Detection Limit.
-- = No RIDEM GB Groundwater Objective established for this analyte.
RIDEM GB-LC: GB Leachability Criteria as defined in Section 8.02 of RIDEM Remediation Regulations.
Bold indicates an exceedances of the applicable RIDEM standards.

In addition to the groundwater sampling, one sample of free product was collected from MW-3 through the use of a polyethylene bailer. This sample was submitted for analysis of VOC, pesticides via EPA method 8081, PCB via EPA method 8082, and SVOCs via EPA method 8270. Concentrations of detected analytes are summarized in Table 4 below. Certificates of Analysis are included as Appendix D.

TABLE 4 FREE PRODUCT ANALYTICAL RESULTS – 5 JUNE 2008

Analyte Detected	MW-3 (Free Product)
Volatile Organic Compounds	
1,1,1-Trichloroethane	38.5
1,1-Dichloroethane	20.0
1,2,4-Trimethylbenzene	4520
1,3,5-Trimethylbenzene	1420
4-Isopropyltoluene	354
Chloroethane	110
Ethylbenzene	12,700
Isopropylbenzene	334
Naphthalene	942
n-Propylbenzene	660
sec-Butylbenzene	470
Toluene	1130
Xylenes (Total)	54,300
Pesticides	
4,4'-DDD	1.24
alpha-Chlordane	1.28
beta-BHC	0.900
delta-BHC	0.716
gamma-BHC (Lindane)	0.531
gamma-Chlordane	3.11
Heptachlor Epoxide	0.888
Hexachlorobenzene	2.50
Polychlorinated Biphenyls	
Aroclor 1260	25.8
Semi-Volatile Organic Compounds	
bis(2-Ethylhexyl)phthalate	2530
Naphthalene	778

Note: All results reported in mg/L.
ND = Not detected above the laboratory Method Detection Limit.

Buckeye Brook Warwick Pond Tribs Field Data for All Surveys

Dissolved Oxygen (mg/L)												
Survey Type	**DW1**			**DW2**	**WW1**			**WW2**				**Mean**
Station	7/16/2008	7/18/2008	7/21/2008	9/10/2008	12/9/2008*	12/10/2008	12/11/2008	2/1/2011*	2/3/2011	2/6/2011	2/8/2011	
Tributaries to Warwick Pond (RI0007024R-05)												
BB00	4.24	4.58	5.18	4.52	9.75	8.11	9.23	16.85	12.32	11.52	10.38	**8.79**
BB02	7.55	7.33	7.07	6.41	9.45	7.63	9.58	10.93	10.87	11.14	10.24	**8.93**
Buckeye Brook (RI0007024R-01)												
BB03	9.03	6.93	6.67	NS	9.37	12.17	12.12	14.84	14.87	14.55	12.44	**11.3**
TA01	3.41	2.55	3.05	NS	1.38	4.93	5.05	6.53	4.93	4.84	5.13	**4.18**
OF08	9.29	8.90	8.85	NS	7.20	9.02	10.45	13.00	9.94	12.03	10.91	**9.96**
AP01				3.68								**3.68**
BB04	4.95	2.95	2.70	4.83	8.71	7.41	7.55	11.42	11.47	9.78	9.67	**7.40**
BB05A	5.39	4.82	4.80	6.01	10.24	7.27	8.57	10.12	11.3	9.84	10.91	**8.12**

Temperature (°C)												
Survey Type	**DW1**			**DW2**	**WW1**			**WW2**				**Mean**
Station	7/16/2008	7/18/2008	7/21/2008	9/10/2008	12/9/2008*	12/10/2008	12/11/2008	2/1/2011*	2/3/2011	2/6/2011	2/8/2011	
Tributaries to Warwick Pond (RI0007024R-05)												
BB00	18.6	20.1	22.0	16.0	2.6	11.2	7.1	0.4	1.6	1.9	3.4	**9.5**
BB02	21.3	27.3	27.8	17.6	4.6	11.7	8.0	0.8	3.1	4.0	4.3	**11.9**
Buckeye Brook (RI0007024R-01)												
BB03	29.2	18.3	20.0	NS	2.8	5.2	5.0	2.1	2.2	2.6	2.6	**9.0**
TA01	17.5	17.9	18.9	NS	0.9	6.9	5.1	0.3	1.0	0.7	0.8	**7.0**
OF08	14.7	14.7	15.0	NS	11.2	13.0	8.0	7.8	7.5	4.7	6.1	**10.3**
AP01				16.7								**16.7**
BB04	26.5	23.2	24.5	21.0	2.7	8.7	6.4	0.9	2.5	2.3	2.9	**11.1**
BB05A	24.5	23.2	24.6	19.8	2.5	9.5	6.5	0.1	0.3	1.5	2.3	**10.4**

Specific Conductance (µS/cm)												
Survey Type	**DW1**			**DW2**	**WW1**			**WW2**				**Mean**
Station	7/16/2008	7/18/2008	7/21/2008	9/10/2008	12/9/2008*	12/10/2008	12/11/2008	2/1/2011*	2/3/2011	2/6/2011	2/8/2011	
Tributaries to Warwick Pond (RI0007024R-05)												
BB00	359	395	386	370	399	366	378	444	501	378	390	**397**
BB02	301	270	271	262	286	339	505	370	693	505	882	**426**
Buckeye Brook (RI0007024R-01)												
BB03	272	304	300	NS	218	218	214	219	210	214	195	**236**
TA01	416	417	415	NS	472	265	284	86	353	448	482	**364**
OF08	322	337	338	NS	268	207	91	333	624	456	1920	**490**
AP01				277								**277**
BB04	346	356	360	245	284	331	491	295	605	491	450	**387**
BB05A	344	343	349	241	279	292	688	308	760	688	498	**435**

TA01=Truk-Away station OF08=Outfall from airportoutfall 008 AP01=Downstream Combined flows of OF08 and TA01. Only sampled during DW2.

*The first samples collected for the wet weather surveys were prior to storm commencement and are considered dry survey days (12/9/2008, 2/1/2011).

Buckeye Brook Warwick Pond Tribs Chemistry Data for Dry Weather Surveys

Station	BOD_5 (mg/L)			Chloride (mg/L)			TSS (mg/L)			pH			Hardness (mg/L)			TP (mg/L)		
	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**
Tributaries to Warwick Pond (RI0007024R-05)																		
BB00	2	1	**1.5**	92.2	76.2	**84.2**	<1	1	**0.5**	7.66	6.55	**7.1**	50	40	**45.0**	0.03	0.03	**0.03**
BB02	1	1	**1.0**	56.1	46.9	**51.5**	1	4	**2.5**	7.39	6.9	**7.1**	48	41	**44.5**	0.02	<0.02	**0.01**
Buckeye Brook (RI0007024R-01)																		
BB03	4	NS	**4**	46.9	NS	**46.9**	3	NS	**3**	9.22	NS	**9.2**	47	NS	**47**	0.02	NS	**0.02**
TA01	4	NS	**4**	46.2	NS	**46.2**	39	NS	**39**	7.41	NS	**7.4**	91	NS	**91**	0.19	NS	**0.19**
OF08	4	NS	**4**	79	NS	**79**	<1	NS	**<1**	7.22	NS	**7.2**	50	NS	**50**	<0.02	NS	**<0.02**
AP01	NS	1	**1**	NS	39.7	**39.7**	NS	5	**5**	NS	7.06	**7.1**	NS	43	**43**	NS	0.09	**0.09**
BB04	4	1	**2.5**	62.1	39.2	**50.7**	1	4	**2.5**	7.33	7.01	**7.2**	66	45	**55.5**	0.03	0.03	**0.03**
BB05A	3	1	**2.0**	59.2	38.6	**48.9**	<1	**R**	**<1**	7.53	7.13	**7.3**	64	44	**54.0**	0.03	0.03	**0.03**

Station	TKN (mg/L)			Ammonia-N (mg/L)			Nitrate- N (mg/L)			Arsenic (µg/L)			Cadmium (µg/L)			Copper (µg/L)		
	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**
Tributaries to Warwick Pond (RI0007024R-05)																		
BB00	0.55	0.52	**0.54**	0.40	0.31	**0.36**	0.78	0.82	**0.80**	0.38	0.29	**0.34**	0.16	0.08	**0.10**	1.82	2.10	**1.96**
BB02	ND	0.43	**0.43**	0.13	0.16	**0.15**	1.90	1.16	**1.53**	0.27	0.42	**0.35**	0.10	0.11	**0.10**	3.53	1.19	**2.36**
Buckeye Brook (RI0007024R-01)																		
BB03	0.26	NS	**0.26**	0.13	NS	**0.13**	<0.05	NS	**<0.05**	0.66	NS	**0.66**	0.28	NS	**0.30**	2.35	NS	**2.35**
TA01	2.79	NS	**2.79**	2.72	NS	**2.72**	<0.05	NS	**<0.05**	1.87	NS	**1.87**	0.30	NS	**0.30**	1.40	NS	**1.40**
OF08	ND	NS	**ND**	0.13	NS	**ND**	0.67	NS	**0.67**	0.39	NS	**0.39**	0.16	NS	**0.20**	0.67	NS	**0.67**
AP01	NS	2.07	**2.07**	NS	1.71	**1.71**	NS	0.41	**0.41**	NS	0.97	**0.97**	NS	<0.06	**<0.06**	NS	1.08	**1.08**
BB04	0.88	0.71	**0.80**	0.85	0.30	**0.58**	0.24	<0.05	**0.12**	0.61	0.82	**0.72**	0.39	<0.06	**0.20**	5.73	1.24	**3.49**
BB05A	0.23	0.61	**0.42**	0.23	0.21	**0.22**	1.01	0.26	**0.64**	0.33	**R**	**0.49**	0.13	<0.06	**0.07**	1.62	1.68	**1.65**

Station	Lead (µg/L)			Manganese (µg/L)			Total Iron (µg/L)			Zinc (µg/L)			TOC (mg/L)		
	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**	7/16/2008	9/10/2008	**Mean**
Tributaries to Warwick Pond (RI0007024R-05)															
BB00	0.59	<0.07	**0.30**	637	732	**685**	732	522	**627**	35.7	28.2	**32**	NS	1,900	**1,900**
BB02	0.44	<0.07	**0.22**	469	448	**459**	648	824	**736**	57.9	13.9	**35.9**	NS	580	**580**
Buckeye Brook (RI0007024R-01)															
BB03	1.93	NS	**1.93**	12	NS	**12**	186	NS	**186**	137	NS	**137**	NS	NS	**NS**
TA01	0.90	NS	**0.90**	988	NS	**988**	11,586	NS	**11,586**	48.9	NS	**48.9**	NS	NS	**NS**
OF08	0.45	NS	**ND**	880	NS	**880**	2,844	NS	**2,844**	22.1	NS	**22.1**	NS	NS	**NS**
AP01	NS	<0.07	**<0.07**	NS	505	**505**	NS	3,008	**3,008**	NS	10.4	**10.4**	NS	17,000	**17,000**
BB04	1.62	0.18	**0.90**	335	142	**239**	2,078	1,258	**1,668**	30.2	7.1	**18.7**	NS	1,700	**1,700**
BB05A	0.51	<0.07	**0.26**	321	203	**262**	1,347	1,439	**1,393**	17.2	7.8	**12.5**	NS	2,500	**2,500**

NS = Not Sampled; ND = Non Detect; R=Rejected because data did not meet data quality objectives

OF08=Outfall from airport that drains passenger tarmac area TA01=Truk-Away station

AP01=Downstream from confluence of the combined flows from OF08 and TA01. Only sampled during DW2 (9/10/2008).

TOC was added only for the 2nd dry survey when biological sampling was conducted.

RIDEM Policy: For averages, a ND is treated as a NS (Not Sampled). If below Reporting Limit, a value of 0 is used for averages.

If the DOH lab had a value for a sample that was below the Reporting limit (RL) but above the detection limit (DL) the QAPP required that the lab report that value to RIDEM. The RIDEM staff would then evaluate the value and list it as below the RL (<0.XX) as you see above. However, if the constistuent was not present at all in the sample, a Non Detect (ND) was reported.

Buckeye Brook Warwick Pond Tribs Chemistry Data for Wet Weather 1 (December 9-11, 2008)

Station	BOD_5 (mg/L)				Chloride (mg/L)				TSS (mg/L)				pH			
	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean
Tributaries to Warwick Pond (RI0007024R-05)																
BB00	<1.0	2	2	**1.3**	80.4	77.8	54.6	**70.9**	<1.0	3	7	**3.3**	6.67	6.15	6.52	**6.45**
BB02	2	6	3	**3.7**	46.6	70.8	31.0	**49.5**	4	9	8	**7.0**	7.23	6.30	6.58	**6.70**
Buckeye Brook (RI0007024R-01)																
BB03	1	2	3	**2.0**	33.8	33.8	33.7	**33.8**	2	9	3	**4.7**	7.76	7.29	7.46	**7.50**
TA01	2	2	5	**3.0**	44.5	29.6	34.3	**36.1**	5	9	40	**18.0**	7.18	6.80	6.99	**6.99**
OF08	5	6	6	**5.7**	51.7	47.1	14.7	**37.8**	<1.0	9	8	**5.7**	7.21	6.47	6.72	**6.80**
BB04	6	5	9	**6.7**	44.0	22.7	38.5	**35.1**	6	10	6	**7.3**	7.05	6.60	6.89	**6.85**
BB05A	6	5	7	**6.0**	44.7	47.6	35.8	**42.7**	4	8	9	**7.0**	7.44	6.90	7.18	**7.17**

Station	Hardness (mg/L)				Total Phosphorus (mg/L)				TKN (mg/L)				Ammonia-N (mg/L)			
	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean
Tributaries to Warwick Pond (RI0007024R-05)																
BB00	51	44	37	**44.0**	<0.02	0.03	0.04	**0.02**	0.37	ND	ND	**0.37**	0.26	0.15	0.16	**0.16**
BB02	52	32	24	**36.0**	<0.02	0.05	0.03	**0.03**	ND	ND	ND	**ND**	0.14	0.14	0.11	**0.13**
Buckeye Brook (RI0007024R-01)																
BB03	51	42	52	**48.3**	<0.02	0.03	0.03	**0.02**	0.31	0.25	0.36	**0.31**	0.29	0.30	0.26	**0.28**
TA01	98	45	50	**64.3**	0.20	0.24	0.92	**0.45**	7.28	31.1	5.26	**14.55**	5.87	2.68	3.12	**2.90**
OF08	42	15	15	**24.0**	<0.02	0.11	0.07	**0.06**	ND	ND	ND	**ND**	ND	0.13	ND	**0.13**
BB04	58	53	45	**52.0**	<0.02	0.03	0.04	**0.02**	0.80	0.96	0.66	**0.81**	0.85	1.02	0.64	**0.83**
BB05A	57	52	44	**51.0**	0.03	0.04	0.04	**0.04**	0.82	0.75	0.49	**0.69**	0.75	0.66	0.44	**0.55**

Station	Nitrate-N (mg/L)				Arsenic (µg/L)				Cadmium (µg/L)				Copper (µg/L)			
	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean
Tributaries to Warwick Pond (RI0007024R-05)																
BB00	1.53	1.07	0.98	**1.19**	0.50	0.28	0.38	**0.39**	0.40	0.17	0.16	**0.24**	1.80	2.04	2.22	**2.02**
BB02	1.59	0.83	<0.05	**0.81**	0.46	0.24	0.53	**0.41**	0.18	0.22	0.39	**0.26**	1.03	3.37	2.19	**2.20**
Buckeye Brook (RI0007024R-01)																
BB03	0.34	0.34	0.36	**0.35**	0.67	0.96	0.81	**0.81**	0.15	<0.06	<0.06	**0.05**	0.98	0.89	0.72	**0.86**
TA01	<0.05	0.10	0.09	**0.06**	1.80	0.88	1.41	**1.36**	0.58	0.08	0.09	**0.25**	2.01	1.04	1.83	**1.63**
OF08	0.79	0.30	0.31	**0.47**	1.36	0.66	0.62	**0.88**	0.17	0.19	0.19	**0.18**	0.74	4.26	2.66	**2.55**
BB04	0.34	0.30	0.30	**0.31**	0.94	0.52	0.65	**0.70**	0.11	<0.06	<0.06	**0.04**	1.21	0.90	0.88	**1.00**
BB05A	0.64	0.56	0.46	**0.55**	0.62	0.62	0.40	**0.55**	0.31	0.29	<0.06	**0.20**	3.24	1.56	1.63	**2.14**

Station	Lead (µg/L)				Manganese (µg/L)				Total Iron (µg/L)				Zinc (µg/L)			
	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean	Run 1	Run 2	Run 3	Mean
Tributaries to Warwick Pond (RI0007024R-05)																
BB00	0.27	0.30	0.49	**0.35**	932	821	598	**784**	654	897	1,082	**878**	24.9	25.5	27.2	**25.9**
BB02	**R**	0.78	0.49	**0.64**	796	382	387	**522**	1,185	1,377	1,419	**1,327**	**R**	28.7	24.5	**26.6**
Buckeye Brook (RI0007024R-01)																
BB03	0.18	<0.07	0.18	**0.12**	220	199	176	**198**	308	296	470	**358**	6.93	<6.46	<6.46	**2.31**
TA01	1.51	0.94	1.70	**1.38**	1,197	489	389	**692**	19,180	4,725	18,912	**14,272**	27.2	9.18	21.8	**19.4**
OF08	0.08	1.08	0.20	**0.45**	962	228	176	**455**	4,334	2,049	1,726	**2,703**	10.5	33.5	26.2	**23.4**
BB04	0.61	<0.07	<0.07	**0.20**	621	634	528	**594**	3,112	2,385	3,287	**2,928**	12.2	7.09	8.25	**9.18**
BB05A	0.66	0.24	0.22	**0.37**	613	365	382	**453**	1,112	1,991	1,423	**1,509**	9.87	20.6	25.4	**18.7**

Station	Propylene Glycol (mg/L)			
	Run 1	Run 2	Run 3	Mean
Tributaries to Warwick Pond				
BB00	ND	ND	ND	**ND**
BB02	ND	ND	ND	**ND**
Buckeye Brook				
BB03	---	---	---	**---**
TA01	---	---	---	**---**
OF08	ND	ND	ND	**ND**
BB04	ND	ND	ND	**ND**
BB05A	ND	ND	ND	**ND**

Sampling Dates: Run 1-12/09/08; Run 2-12/10/08; Run 3- 12/11/08; ND = Non-Detect; R=Rejected because data did not meet data quality objectives

TA01=Truk-Away station OF08=Outfall from airport that drains passenger tarmac area

*The Run 1 sample collected for this survey was prior to storm commencement and is considered under dry weather conditions (12/9/2008).

RIDEM Policy: For averages, a ND is treated as a NS (Not Sampled). If below Reporting Limit (<0.XX), a value of 0 is used for averages.
If the DOH lab had a value for a sample that was below the Reporting limit (RL) but above the detection limit (DL) the QAPP required that the lab report that value to RIDEM. The RIDEM staff would then evaluate the value and list it as below the RL (<0.XX) as you see above. However, if the constistuent was not present at all in the sample, a Non Detect (ND) was reported.

Buckeye Brook Warwick Pond Tribs Chemistry Data for Wet Weather 2 (February 1-8, 2011)

Station	BOD_5 (mg/L)					Chloride (mg/L)					TSS (mg/L)					pH				
	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean
Tributaries to Warwick Pond (RI0007024R-05)																				
BB00	1	2	2	<1.0	**1.3**	98.9	136	91	88	**103.5**	3	13	8	28	**13.0**	6.08	6.38	6.18	6.58	**6.31**
BB02	3	15	15	14	**11.8**	81.4	175	119	233	**152.1**	4	2	3	12	**5.3**	6.48	6.62	6.52	7.21	**6.71**
Buckeye Brook (RI0007024R-01)																				
BB03	1	1	**R**	<1.0	**0.7**	40.4	39	29.8	33.8	**35.8**	1	2	**R**	<1.0	**1.0**	7.06	7.31	6.81	6.89	**7.02**
TA01	2	4	14	4	**6.0**	52.5	49.8	81	89.6	**68.2**	37	14	7	30	**22.0**	6.45	7.27	6.48	6.78	**6.75**
OF08	20	15	15	15	**16.3**	74.6	168	113	544	**224.9**	2	2	1	4	**2.3**	6.93	6.89	6.46	6.67	**6.74**
BB04	5	15	15	15	**12.5**	53.6	150	106	94.6	**101.1**	2	6	<1.0	**R**	**2.7**	6.76	6.8	6.66	7.13	**6.84**
BB05A	4	15	14	11	**11.0**	55.3	203	156	93.6	**127**	5	<1.0	7	4	**4.0**	6.81	7.07	6.72	6.98	**6.90**

Station	Hardness (mg/L)					Total Phosphorus (mg/L)					TKN (mg/L)					Ammonia-N (mg/L)				
	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean
Tributaries to Warwick Pond (RI0007024R-05)																				
BB00	59.4	52.2	32.3	43.4	**46.8**	0.03	0.09	0.06	0.03	**0.05**	1.19	1.03	1.06	1.15	**1.11**	0.28	0.21	0.26	0.25	**0.25**
BB02	49.9	41.0	28.4	34.4	**38.4**	0.03	0.04	0.04	0.05	**0.04**	1.07	1.33	1.34	1.42	**1.29**	0.22	0.20	0.18	0.18	**0.20**
Buckeye Brook (RI0007024R-01)																				
BB03	53.7	79.2	43.8	35.2	**53.0**	0.03	<0.02	<0.02	0.03	**0.02**	1.18	1.22	1.21	1.16	**1.19**	0.15	ND	0.16	0.20	**0.17**
TA01	96.6	42.7	62.2	77.4	**69.7**	0.23	0.18	0.22	0.45	**0.27**	2.8	2.47	2.33	3.07	**2.67**	1.99	1.14	1.44	1.38	**1.49**
OF08	45.3	33.0	16.2	24.2	**29.7**	0.02	0.03	0.02	0.04	**0.03**	0.87	1.10	1.05	1.22	**1.06**	0.13	ND	0.11	ND	**0.12**
BB04	59.1	56.8	40.4	50.7	**51.8**	0.04	0.03	0.03	0.03	**0.03**	1.63	2.21	1.57	1.57	**1.75**	0.74	0.64	0.62	0.53	**0.63**
BB05A	60.4	59.0	36.2	44.4	**50.0**	0.04	0.02	0.04	0.03	**0.03**	1.74	1.86	1.53	1.43	**1.64**	0.66	0.62	0.53	0.45	**0.57**

Station	Nitrate-N (mg/L)					Arsenic (µg/L)					Cadmium (µg/L)					Copper (µg/L)				
	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean
Tributaries to Warwick Pond (RI0007024R-05)																				
BB00	1.65	1.66	0.97	1.36	**1.41**	0.14	0.26	0.38	0.27	**0.26**	0.26	0.21	0.09	0.16	**0.18**	1.33	2.16	2.17	1.53	**1.8**
BB02	1.79	1.64	0.92	1.01	**1.34**	0.21	0.37	0.52	0.41	**0.38**	0.09	0.14	0.12	0.13	**0.12**	1.3	2.32	4.05	3.32	**2.75**
Buckeye Brook (RI0007024R-01)																				
BB03	0.35	0.36	0.32	0.33	**0.34**	0.27	0.35	0.57	0.44	**0.41**	<0.05	<0.05	<0.05	<0.05	**<0.05**	2.94	1.05	1.63	0.81	**1.61**
TA01	<0.05	<0.05	0.14	0.10	**0.06**	0.24	0.61	0.49	0.55	**0.47**	0.09	<0.05	<0.05	<0.05	**0.02**	1.4	1.48	1.34	1.36	**1.4**
OF08	0.53	0.51	0.39	0.43	**0.47**	0.67	0.37	0.64	0.48	**0.54**	0.06	0.10	<0.05	0.20	**0.09**	1.03	1.74	3.59	4.22	**2.65**
BB04	0.32	0.31	0.26	0.34	**0.31**	0.24	0.30	0.35	0.25	**0.29**	0.14	<0.05	<0.05	0.06	**0.05**	1.52	1.71	2.35	1.46	**1.76**
BB05A	0.42	0.39	0.30	0.38	**0.37**	0.17	0.27	0.24	0.62	**0.33**	0.05	0.06	<0.05	0.14	**0.08**	2.51	8.48	2.02	1.26	**3.57**

Station	Lead (µg/L)					Manganese (µg/L)					Total Iron (µg/L)					Zinc (µg/L)				
	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean	Run 1	Run 2	Run 3	Run 4	Mean
Tributaries to Warwick Pond (RI0007024R-05)																				
BB00	0.09	0.16	1.28	0.16	**0.42**	768	810	512	726	**704**	741	2,307	948	648	**1,161**	4.49	17.51	21.13	5.55	**12.17**
BB02	0.11	0.35	0.51	0.17	**0.29**	858	1,169	481	526	**759**	1,989	1,747	1,475	2,403	**1,904**	<1.12	13.6	22.6	<1.13	**9.05**
Buckeye Brook (RI0007024R-01)																				
BB03	0.29	0.10	0.33	<0.08	**0.18**	393	467	433	391	**421**	432	449	462	1,617	**740**	1.97	1.15	1.94	<1.13	**1.27**
TA01	0.73	0.19	0.22	0.37	**0.38**	1,247	1,012	689	835	**946**	9,088	4,976	1,250	3,693	**4,752**	3.36	1.44	1.91	<1.13	**1.68**
OF08	<0.08	2.62	0.22	0.11	**0.74**	1,599	945	383	494	**855**	3,954	2,454	1,928	2,441	**2,694**	2.86	10.29	15.4	9.26	**9.45**
BB04	1.5	0.13	0.38	<0.08	**0.50**	663	713	555	550	**620**	1,892	3,112	1,605	1,799	**2,102**	5.99	<1.13	3.3	<1.13	**2.32**
BB05A	0.37	0.53	0.15	0.20	**0.31**	724	723	713	398	**640**	1,010	1,168	981	1,172	**1,083**	4.13	14.86	2.68	<1.13	**5.42**

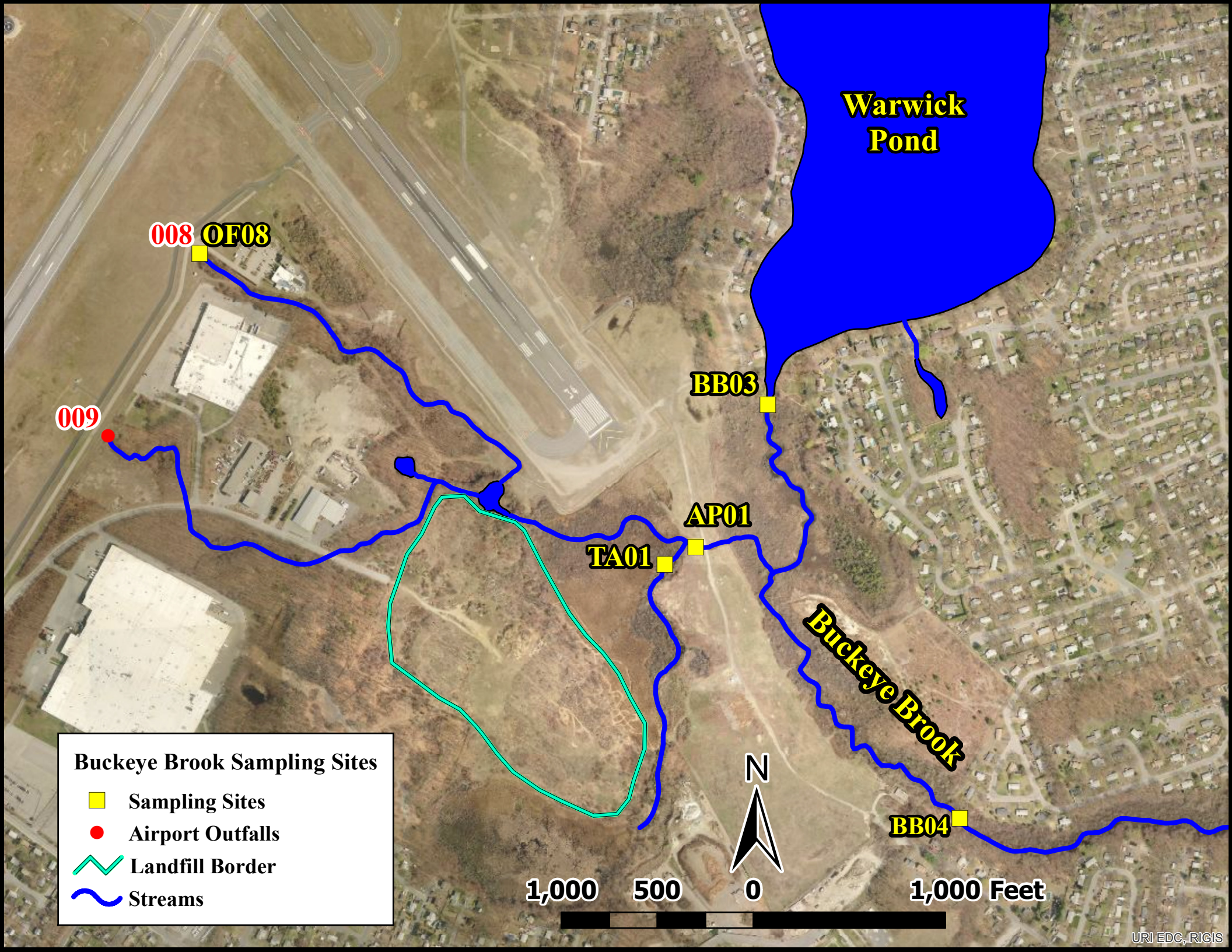
Station	Propylene Glycol (mg/L)				
	Run 1	Run 2	Run 3	Run 4	Mean
Tributaries to Warwick Pond					
BB00	ND	ND	ND	ND	**ND**
BB02	ND	45	44	45	**45**
Buckeye Brook					
BB03	ND	ND	ND	ND	**ND**
TA01	---	---	---	---	**ND**
OF08	ND	99	34	105	**79**
BB04	ND	23	ND	21	**22**
BB05A	---	---	---	---	

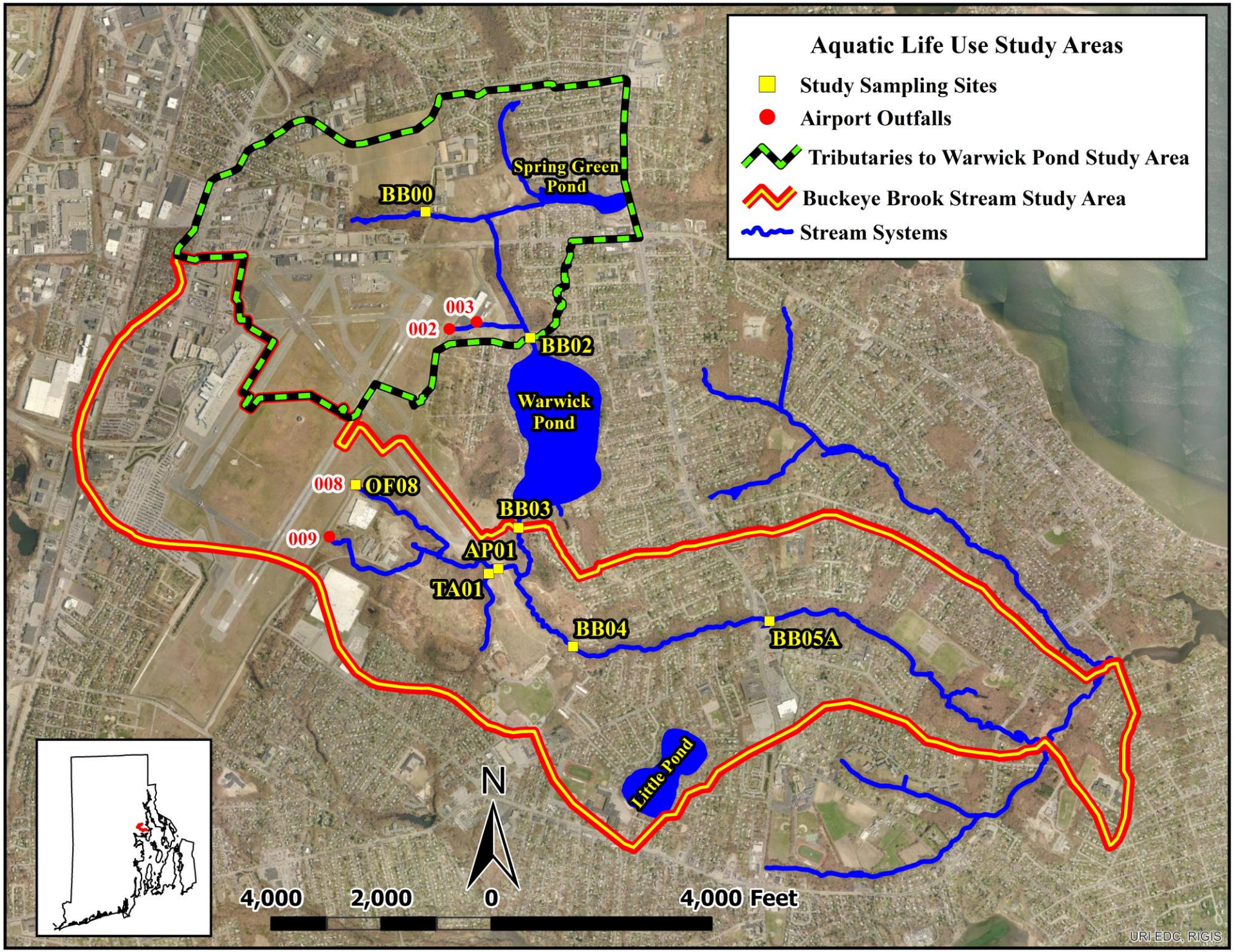
Sampling Dates: Run 1-02/01/11; Run 2-02/03/11; Run 3- 02/06/11; Run 4- 02/08/11; ND = Non-Detect; R=Rejected because data did not meet data quality objectives.

TA01=Truk-Away station OF08=Outfall from airport that drains passenger tarmac area

*The Run 1 sample collected for this survey was prior to storm commencement and is considered under dry weather conditions (2/1/2011).

RIDEM Policy: For averages, a ND is treated as a NS (Not Sampled). If below Reporting Limit, a value of 0 is used for averages.
If the DOH lab had a value for a sample that was below the Reporting limit (RL) but above the detection limit (DL) the QAPP required that the lab report that value to RIDEM. The RIDEM staff would then evaluate the value and list it as below the RL (<0.XX) as you see above. However, if the constistuent was not present at all in the sample, a Non Detect (ND) was reported.


Warwick Pond
008
OF08
009
BB03
AP01
TA01
Buckeye Brook
BB04
Buckeye Brook Sampling Sites
Sampling Sites
Airport Outfalls
Landfill Border
Streams
N
1,000
500
0
1,000 Feet
URI EDC, RIGIS


Aquatic Life Use Study Areas
Study Sampling Sites
Airport Outfalls
Tributaries to Warwick Pond Study Area
Buckeye Brook Stream Study Area
Stream Systems
Spring Green Pond
BB00
003
002
BB02
Warwick Pond
008
OF08
BB03
009
AP01
TA01
BB04
BB05A
Little Pond
N
4,000
2,000
0
4,000 Feet
URI EDC, RIGIS

APPENDIX D

SUBSURFACE EXPLORATION LOGS

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-101
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Sam Alernaz/ Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 12/31/2019 - 1/1/2020

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/31/2019	1500		3	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
5		S-1	0.0-5.0	60	48			S-1: Top 4": Brown topsoil S-1A (Next 17"): Dark gray, fine to coarse SAND, trace fine Gravel, trace Silt S-1B (Bottom 27"): Black, fine to coarse SAND, little fine Gravel, trace Silt, wet	1 2	ND ND	0.5	TOPSOIL		Standpipe
10		S-2	5.0-10.0	60	51			S-2: Gray, fine to coarse SAND, trace fine Gravel, trace Silt, wet		ND		SAND		Filter Sand Well Screen
								End of exploration at 10 feet.	3 4		10			

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ±3ft bgs.
3 - End of exploration at ±10ft bgs.
4 - Observation well (2"PVC) installed at 10ft bgs; screened from 10-0ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-101

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:17 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-102
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 15
Date Start - Finish: 12/31/2019 - 12/31/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/31/2019	1245		3.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
0		S-1	0.0-5.0	60	24			S-1: Top 4": Dark brown topsoil Next 4": Trash S-1A (Next 6"): Dark gray, fine to coarse SAND, trace fine Gravel, trace Silt Next 3": Trash S-1B (Next 5"): Gray, fine to coarse SAND, trace Silt, trace Debris, wet Bottom 6": Trash, wet	1 2	ND	0.5	TOPSOIL SAND AND TRASH		Standpipe
5		S-2	5.0-10.0	60	27			S-2: Wood, wet		3.0	5			Filter Sand Well Screen
10		S-3	10.0-15.0	60	24			S-3: Wood, trash, wet	4			WOOD AND TRASH		
15								End of exploration at 15 feet.	3		15			
20														
25														
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ±3.5ft bgs.
4 - End of exploration at ±15ft bgs.
3 - Observation well (2" PVC) installed at ±10ft bgs; screened from 10-0ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-102

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:18 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-103
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 20
Date Start - Finish: 12/29/2019 - 12/29/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/29/2019	1205		3	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
0		S-1	0.0-5.0	60	36			S-1: Top 2": Brown topsoil			0.5	TOPSOIL		Standpipe
								S-1A (Next 10") Gray, fine to coarse SAND, trace Silt		ND				
								S-1B (Next 12") Dark brown, fine to coarse SAND, trace Silt, trace Organics	1	ND		SAND		
									2		4.2			
5		S-2	5.0-10.0	60	32			S-1C (Next 15") Gray, fine to medium SAND, trace fine Gravel, trace Silt, orange Staining		ND	5	PEAT		Filter Sand
											6	SAND		Well Screen
								S-1B (Bottom 7") Dark brown-black, PEAT		0.2				
								S-2: S-2A (Top 10") Gray, fine to coarse SAND, trace fine Gravel, trace Silt, wet		0.0				
10		S-3	10.0-15.0	60	27			S-2B (Bottom 22") Dark brown-black, PEAT		0.2				
								S-3: Dark black-brown, PEAT		0.2				
												PEAT		
15		S-4	15.0-20.0	60	0			S-4: No recovery	4					
20											20			
								End of exploration at 20 feet.	3					
25														
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 3ft bgs.
4 - Observation well (2" PVC) installed at 10ft bgs; screened from 10-0 ft bgs.
3 - End of exploration at ± 20ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-103

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-104
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 12/29/2019 - 12/29/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/29/2019	1105		3	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
0		S-1	0.0-5.0	60	41			S-1: Top 5": Brown, topsoil			0.5	TOPSOIL		Standpipe
								S-1A (Next 18") Dark gray, fine to coarse SAND, trace fine Gravel, trace Silt, wet	1	ND				
								S-1B (Bottom 18") Gray, fine to medium SAND, little Silt, wet	2	ND		SAND		
5		S-2	5.0-10.0	60	48			S-2: S-2A (Top 20") Dark brown to black, PEAT		ND	5			Filter Sand
								Bottom 28": Grey, fine to coarse SAND, little fine Gravel, trace Silt, wet		ND		PEAT		Well Screen
								S-2B (Bottom 28") Gray, fine to coarse SAND, little fine Gravel, trace Silt, wet			7.5	SAND		
10											10			
								End of exploration at 10 feet.	3					
									4					
15														
20														
25														
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 3 ft bgs.
3 - End of exploration at ± 10ft bgs.
4 - Observation well (2" PVC) installed at 10ft bgs; screened from 10-0ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-104

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:19 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-105
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 12/29/2019 - 12/29/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/29/2019	1035		2	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
		S-1	0.0-5.0	60	48			S-1: S-1A (Top 7") Dark gray, fine to coarse SAND, trace Silt, debris	1	3.8		SAND AND TRASH		Standpipe
								S-1B (Next 10") Brown, fine to coarse SAND, trace Silt, debris	2	0.1	3			
								Next 6": Trash						
5								S-1B (Bottom 25") Gray, fine to medium SAND, some Silt, wet						
		S-2	5.0-10.0	60	48			S-2A (Top 10") Gray, fine to medium SAND, some Silt, wet		0.2				Filter Sand
								S-2B (Bottom 30") Gray-brown, fine to coarse SAND, trace fine Gravel, trace Silt, wet		0.2		SAND		Well Screen
10								S-2: S-2A (Top 10") Gray, fine to medium SAND, some Silt, wet			10			
								S-2B (Bottom 30') Gray-brown, fine to coarse SAND, trace fine Gravel, trace Silt, wet	3 4	0.1				
								End of exploration at 10 feet.						
15														
20														
25														
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 2ft bgs.
3 - End of exploration at ± 10ft bgs.
4 - Observation well (2" PVC) installed at 10ft bgs; screened from 10-0ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-105

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:20 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-106D
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 30
Date Start - Finish: 1/1/2020 - 1/1/2020

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								NO SOIL SAMPLING						Standpipe
5														
10														
15														Filter Sand
20														
25														Well Screen
30								End of exploration at 30 feet.	1 2					

REMARKS

1 - Driller drove 4" casing to 30ft bgs and installed an observation well (2" PVC) at 30 ft bgs; screened from 30-25ft bgs.
2 - Landfill gas odor present.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-106D

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:21 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-106S
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 12/29/2019 - 12/29/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/29/2019	933		2	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
				60	12			Top 4": Dark brown, topsoil S-1 (Next 2") Brown, fine to coarse SAND, trace Silt Next 6": Trash	1 2	ND 0.1	0.5	TOPSOIL		Standpipe
5		S-2	5.0-10.0	60	0			S-2: No soil recovery, plastic sleeve full of water				SAND AND TRASH		Filter Sand Well Screen
10								End of exploration at 10 feet.	3 4		10			
15														
20														
25														
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 2ft bgs.
3 - End of exploration at ± 10ft bgs.
4 - Observation well (2" PVC) installed at ± 10ft bgs; screened from 10-0 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-106S

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:22 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-107
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Sam Alernaz

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 12/31/2019 - 12/31/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/31/2019	1130		3.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
0		S-1	0.0-5.0	60	43			S-1: Top 3": Brown topsoil S-1A (Next 34") Gray, fine to medium SAND, some Silt, trace Organics S-1B (Bottom 6") Dark brown-black, fine to medium SAND, some Silt, trace coarse Sand, wet	1 2	ND ND	0.5	TOPSOIL		Roadbox
5				60	36			S-2A (Top 12") Gray, fine to medium SAND, some Silt, wet S-2B (Bottom 23") Dark gray-black, fine to medium SAND, some Silt, trace trash, wet		ND		SAND		Filter Sand Well Screen
10										1.0	10			
								End of exploration at 10 feet.	3 4					
15														
20														
25														
30														

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 3.5ft bgs.
3 - End of exploration ± 10ft bgs.
4 - Observation well (2" PVC) installed at 10ft bgs; screened from 10-0ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-107

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:23 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-107R
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Ben Ramos
Drilling Co.: Hoffman Environmental Services
Foreman: Sam Alernaz

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 20
Date Start - Finish: 2/14/2020 - 2/14/2020

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

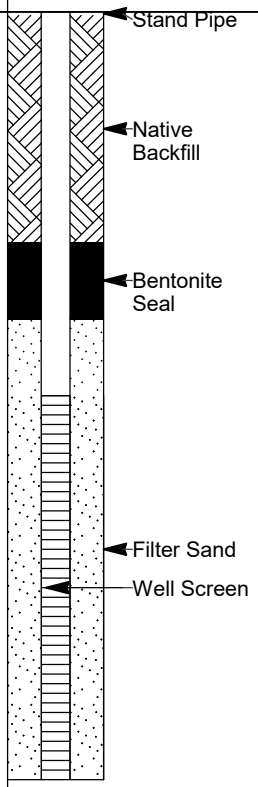
Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
2/14/2020	1000		14.1	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (RQD)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
								No Soil Sampling	1 2				
20								End of exploration at 20 feet.					

Equipment Installed



REMARKS

1 - Driller drove 4" casing to 20' bgs and installed OW (2"PVC) at 20ft bgs. Screened from 20-10 ft bgs.
2 - MW-107R was installed in the MW-107 borehole, after MW-107 well materials were removed because MW-107 was dry following installation.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-107R

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-109
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Sam Alernaz

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 25
Date Start - Finish: 12/2/2019 - 12/2/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/2/2019	1103		15	
12/4/2019	0907	DTB: 24.80	20.15	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
0		S-1	0.0-5.0	60	46			S-1: Top 2": Brown topsoil S-1A (Next 18") Brown, fine to coarse SAND, trace Silt S-1B (Next 7") tan-gray, fine to coarse SAND, little fine Gravel, trace Silt S-1C (Bottom 19") Gray, fine to coarse SAND, little Silt, trace fine Gravel	1	ND 0.1 0.4				Standpipe Native Sand
5		S-2	5.0-10.0	60	26			S-2: Next 16": Trash S-2B (Bottom 10") Black, fine to coarse SAND, trace fine Gravel, trace Silt		6.2				Bentonite Seal
10				60	27			S-3A (Top 9") Dark gray, fine to coarse SAND, trace Silt, trace Debris S-3B (Middle 6") Gray, fine to medium SAND, some Silt, wet Bottom 12": Trash, wet		1.3 1.4		SAND AND TRASH		
15		S-4	15.0-20.0	60	20			S-4: Gray, fine to coarse SAND, some fine Gravel, trace Silt, wet	2	0.7				Filter Sand Well Screen
20		S-5	20.0-25.0	60	0			S-5: No soil Sampling	3					
25											25			
30								End of exploration at 25 feet.	4 5					

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 15ft bgs.
3 - Refusal at ± 25ft bgs.
4 - Observation well (2" PVC) installed at 25ft bgs; screened from 25-10ft bgs.
5 - Landfill gas odor present.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-109

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:24 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-110
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 30
Date Start - Finish: 1/1/2020 - 1/1/2020

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
0								No soil sampling					
5													
10													
15													
20													
25													
30								End of exploration at 30 feet	1 2				

Equipment Installed: Standpipe; Filter Sand; Bentonite Seal; Filter Sand; Well Screen

REMARKS

1 - Driller drove 2" casing to 30ft bgs and installed observation well (2" PVC) at 3ft bgs, screened from 30-15ft bgs.
2 - LEL> 90% detected by 5-gas meter when removing equipment from ground. Stopped work to allow area to vent.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-110

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:25 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-111
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Kyle Hoffman

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Auger

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 30
Date Start - Finish: 1/1/2020 - 1/1/2020

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Split Spoon
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
01/01/2019	1100		2.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Pen. (in)	Rec. (in)	Blows (RQD)	SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
		S-1	0.0-2.0	24	4			S-1: Brown topsoil, fine to coarse SAND, trace Silt, trace Organics	1	ND				Standpipe
		S-2	2.0-4.0	24	16			S-2: Brown, fine to coarse SAND, trace fine Gravel, trace Silt, wet	2	ND		SAND		
5		S-3	4.0-6.0	24	4	4 4 6 2	10	S-3: Grey, fine to coarse SAND, trace Silt, wet, trash in tip of split spoon		3.6	5.5			
10		S-4	10.0-12.0	24	0	14 7 6 5	13	S-4: Trash in tip of split spoon, wet						Filter Sand
15		S-5	15.0-17.0	24	0	6 6 5 7	11	S-5: Trash and metal in tip of split spoon, wet				SAND AND TRASH		Well Screen
20		S-6	20.0-22.0	24	0	14 15 15 7	30	S-6: Trash in tip of Split Spoon, wet						
									4					
25									5					
		S-7	28.0-30.0	24	0	2 7 10 4	17	S-7: Wood in tip of split spoon, wet						
30								End of exploration at 30 feet.	3		30			

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at 2.5 ft. bags.
4 - Observation well (2" PVC) installed at 23ft bgs; screened from 23-8ft bgs.
5 - Landfill gas odor present.
3 - End of exploration at 30ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-111

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:26 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: MW-112
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Sam Alernaz

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 24
Date Start - Finish: 12/2/2019 - 12/4/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/4/2019	1100		14	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
				60	38			Top 4": Brown topsoil S-1A (Top 16") gray, fine to coarse SAND, trace fine Gravel, trace Silt. S-1B (Mid 8") gray, fine SAND, little Silt S-1C (Bottom 10") gray, fine to coarse SAND, trace fine Gravel, trace Silt	1	ND 0.1 0.4			
5		S-2	5.0-10.0	60	0			S-2: S-2: No soil sampling					
10		S-3	10.0-15.0	60	32			S-3: Gray-dark gray, fine to coarse SAND and Debris, trace fine Gravel, trace Silt, wet		3.7		SAND AND TRASH	
15		S-4	15.0-20.0	60	0			S-4: No soil sampling	2				
20		S-5	20.0-24.0	48	0			S-5: No soil sampling			24		
25								End of exploration at 24 feet.	3 4 5				
30													

Equipment Installed: Standpipe; Native Sand; Bentonite Seal; Filter Sand; Well Screen

REMARKS

1 - The headspace of soil samples was screened for Total Volatile Organic Compounds (TVOCs) using a MiniRae model 3000 Photoionization Detector (PID) equipped with a 10.6 cV lamp. ND indicates non-detected reading below the instrument's detection limit of approximately 0.1 ppm.
2 - Groundwater observed at ± 14ft bgs.
3 - Refusal at ± 24ft bgs
4 - Observation well (2" PVC) installed at 24ft bgs; screened from 24-9ft bgs.
5 - Landfill gas odor present.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: MW-112

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:27 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-01
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 2
Date Start - Finish: 12/14/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/18/2019	1300		0.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe
								End of exploration at 2 feet.	2					Native Backfill
									3					Well Screened from 4.5 to 3.5
									4					

5
10
15
20
25
30

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Groundwater observed at ±0.5 ft bgs.
3 - Hit refusal at ±2 ft bgs (moved locations 3 times due to presence of waste in explorations).
4 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-01

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:28 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-02
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 2
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/18/2019	1030		1.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe, Native Backfill, Well Screen
								End of exploration at 2 feet.	2					
									3					
5									4					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Soil gas probe adjacent to river, ground water observed at ±1.5 ft bgs.
3 - Hit refusal at ±2 ft bgs (relocated twice after refusal at 1 ft bgs, and trash encountered)
4 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 2 to 1 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-02

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:28 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-03
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Sam Alernaz

Type of Rig: Geoprobe
Rig Model: 7822DT
Drilling Method: Direct Push

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 10
Date Start - Finish: 12/4/2019 - 12/4/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

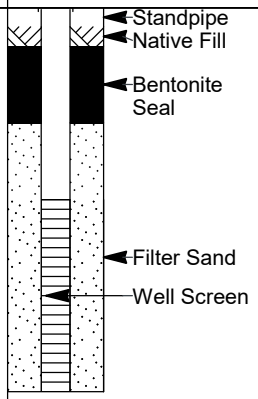
Sampler Type: Acetate Sleeve
Sampler O.D. (in.): 2.0
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)
0								No Soil Sampling	1				
10								End of exploration at 10 feet.	2 3				

Equipment Installed



REMARKS

1 - Shoveled 1.5 ft bgs to evaluate presence of debris, no debris present.
2 - End of exploration at ±10 ft bgs.
3 - Soil gas probe (1/2" PVC) installed at ± 10 ft bgs; screened at ± 10-5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-03

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:29 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-04
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4.5
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe; Native Backfill; Drilled Screen
5								End of exploration at 4.5 feet.	2					
									3					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - End of exploration at 4.5 ft bgs.
3 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-04

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:30 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-05
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4.5
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe; Native Backfill; Drilled Screen
5								End of exploration at 4.5 feet.	2					
									3					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - End of exploration at 4.5 ft bgs.
3 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-05

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:30 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-06
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 2
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/18/2019	1145		1.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe, Native Backfill, Well Screen
								End of exploration at 2 feet.	2					
									3					
5									4					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Soil gas probe adjacent to river, ground water observed at ±1.5 ft bgs.
3 - Hit refusal at ±2 ft bgs (relocated twice after refusal at 1 ft bgs, and trash encountered)
4 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 2 to 1 bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-06

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:31 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-07
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4.5
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/18/2019	0905		3	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1 2					Standpipe Native Backfill Drilled Screen
5								End of exploration at 4.5 feet.	3 4					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Soil gas probe location adjacent to wetland. Groundwater observed at 3 ft bgs.
3 - End of exploration at 4.5 ft bgs.
4 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-07

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:31 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-08
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4.5
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/18/2019	1105		2	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1 2					Standpipe Native Backfill Drilled Screen
5								End of exploration at 4.5 feet.	3 4					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Soil gas probe location adjacent to river/ wetland. Groundwater observed at 2 ft bgs.
3 - End of exploration at ±4.5 ft bgs.
4 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-08

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:32 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-09
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe; Native Backfill; Drilled Screen
5								End of exploration at 4 feet.	2 3					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Hit refusal at ± 4 ft bgs.
3 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4 to 3 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-09

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:33 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-10
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4.5
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe; Native Backfill; Drilled Screen
5								End of exploration at 4.5 feet.	2					
									3					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - End of exploration at 4.5 ft bgs.
3 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-10

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:33 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-11
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4.5
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe; Native Backfill; Drilled Screen
5								End of exploration at 4.5 feet.	2					
									3					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - End of exploration at 4.5 ft bgs.
3 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4.5 to 3.5 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-11

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:34 PM

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-12
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
Not Measured				

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe; Native backfill; Drilled Screen
5								End of exploration at 4 feet.	2					
									3					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Hit refusal at 4 ft bgs (moved locations 3 times due to presence of waste in explorations).
3 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4 to 3 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-12

TEST BORING LOG

GZA GeoEnvironmental, Inc.
Engineers and Scientists

Truk-Away Landfill Joint Defense Group
Truk-Away Landfill
Warwick Industrial Drive
Warwick, RI

EXPLORATION NO.: SG-13
SHEET: 1 of 1
PROJECT NO: 34648
REVIEWED BY: EAS

Logged By: Rowan Hayes
Drilling Co.: Hoffman Environmental Services
Foreman: Anthony Gomez

Type of Rig: N/A
Rig Model: N/A
Drilling Method: Hand Auger/ Post Driver

Boring Location: See Plan
Ground Surface Elev. (ft.):
Final Boring Depth (ft.): 4
Date Start - Finish: 12/18/2019 - 12/18/2019

H. Datum:
V. Datum:

Hammer Type: N/A
Hammer Weight (lb.): N/A
Hammer Fall (in.): N/A
Auger or Casing O.D./I.D Dia (in.): N/A

Sampler Type: N/A
Sampler O.D. (in.): N/A
Sampler Length (in.): N/A
Rock Core Size:

Groundwater Depth (ft.)

Date	Time	Stab. Time	Water	Casing
12/18/2019	0940		2.5	

Depth (ft)	Casing Blows/ (Core Rate)	Sample No.	Sample Depth (ft.)	Sample Pen. (in)	Sample Rec. (in)	Sample Blows (RQD)	Sample SPT Value	Sample Description Modified Burmister	Remark	Field Test Data	Stratum Depth (ft.)	Stratum Description	Stratum Elev. (ft.)	Equipment Installed
								No Soil Sampling	1					Standpipe
									2					Native Backfill
5								End of exploration at 4 feet.	3					Drilled Screen
									4					
10														
15														
20														
25														
30														

REMARKS

1 - Hand augered to 1.5ft bgs to evaluate presence of debris; no debris present.
2 - Soil gas probe location adjacent to wetland. Groundwater observed at ±2.5 ft bgs.
3 - Hit refusal at ±4 ft bgs.
4 - Soil gas probe (5 ft, 1/2" diameter, steel pipe with holes drilled into bottom 1ft of pipe) installed via post driver; screened from 4 to 3 ft bgs.

See Log Key for exploration of sample description and identification procedures. Stratification lines represent approximate boundaries between soil and bedrock types. Actual transitions may be gradual. Water level readings have been made at the times and under the conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the times the measurements were made.

Exploration No.: SG-13

GZA TEMPLATE TEST BORING W/ EQUIP.; 3/16/2020; 12:43:35 PM

APPENDIX E

FIELD SAMPLING LOGS

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 20s

Well ID: MW-1
Sample Date: 1/9/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/9/2020 14:10

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	23.40	Standing Water in Well (feet):	7.55
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	15.85	Sample Depth (feet BGS):	19
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	to	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [X] Yes [ ] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 8:12 **Stop time:** 9:22

Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	1 ORP (mvolts) (± 10)	2 pH (s.u.) (± 0.1)	3 Spec. Cond. (mS/cm) (±3%)	4 DO (mg/L) (±10% or 3 rdgs <0.5)	5 Temperature (ºC) (±3%)	6 Turbidity (ntu) (±10% or <5ntu)	7 Flow (ml/min) (<500 ml/min)	8 Notes
8:48	16.25	-15.4	6.30	1104	0.34	9.7	1.46	<500	
8:51	16.25	-16.6	6.30	1102	0.33	9.7	1.4	<500	
8:54	16.25	-18.2	6.30	1102	0.32	9.9	1.36	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 8:55

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Waste Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-3
Sample Date: 1/7/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 11:30

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	34.70	Standing Water in Well (feet):	14.22
Depth to LNAPL (feet):	20.48	Well Diameter (in.)	2
Depth to Water (feet):	21.29	Sample Depth (feet BGS):	28
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	to	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [X] Yes [ ] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Meter Type: Ysi Pro Dss No. Rental
Flow-Thru Cell Vol (mL): 500

INSTRUMENT MEASUREMENTS:

Start time: 13:10 **Stop time:** 15:20

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
14:32	20.66	-11.8	6.26	1393	0.07	11.3	4.83	<500	
14:37	20.66	-16.3	6.27	1390	0.02	11.3	4.3	<500	
14:40	20.66	-18.0	6.27	1393	0.02	11.3	4.69	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:41

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: Petroleum Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

1/4 gallons of product recovered before groundwater sampling.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Partly cloudy, 30s

Well ID: MW-5
Sample Date: 1/8/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 10:15

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	22.45	Standing Water in Well (feet):	9.78
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	12.67	Sample Depth (feet BGS):	17
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	to	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [ ] Yes [X] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500
Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 12:19 **Stop time:** 13:05

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
12:29	12.40	-21.6	6.33	893	0.49	12.2	2.09	<500	
12:32	12.37	-25.1	6.34	896	0.46	12.3	2.1	<500	
12:35	12.34	-28.6	6.34	898	0.40	12.4	2.19	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:36

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Partly cloudy, 30s

Well ID: MW-6
Sample Date: 1/8/2020
Sampler's Name: Ben Ramos

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 9:05

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	30.35	Standing Water in Well (feet):	10.00
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	20.35	Sample Depth (feet BGS):	25
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	to	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [ ] Yes [X] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [X] Poor [ ] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 10:18 **Stop time:** 11:05

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
10:18	20.31	100.3	7.13	4648	1.09	9.9	20.33	<500	
10:28	20.32	14.6	6.93	4512	0.29	11.2	89.8	<500	
10:31	20.33	1.4	6.90	4313	0.26	11.2	10.96	<500	
10:36	20.34	-10.4	6.89	4072	0.20	11.5	37.32	<500	
10:46	20.35	-28.4	6.87	3816	0.14	11.3	50.80	<500	
10:55	20.36	-40.2	6.86	3732	0.09	11.9	55.38	<500	
10:58	20.36	-42.7	6.85	3724	0.02	11.9	61.38	<500	
11:02	20.36	-45.9	6.85	3709	0.03	11.9	69.00	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:05

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: Slightly pink Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 20s

Well ID: MW-7
Sample Date: 1/9/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/9/2020 8:15

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	15.60	Standing Water in Well (feet):	11.75
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	3.85	Sample Depth (feet BGS):	9
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	to	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [ ] Yes [X] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [X] Poor [ ] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 8:30 **Stop time:** 9:57

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
9:05	3.85	-27.5	6.85	997	0.49	8.1	11.07	<500	
9:10	3.85	-30.3	6.66	996	0.31	7.4	9.7	<500	
9:15	3.85	-40.7	6.65	993	0.25	8.2	6.56	<500	
9:50	3.85	-39.4	6.60	994	0.24	8.3	4.73	<500	
9:54	3.85	-39.7	6.58	994	0.27	8.3	4.78	<500	
9:57	3.85	-39.7	6.57	993	0.23	8.3	4.37	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:57

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

No well lid or expansion cap.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-8
Sample Date: 1/8/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 8:40

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	27.90	Standing Water in Well (feet):	9.54
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	18.36	Sample Depth (feet BGS):	22
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	to	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 8:48 **Stop time:** 10:47

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
10:05	19.75	-49.7	6.25	1090	0.44	10.8	14.71	<500	
10:15	19.75	-49.8	6.25	1095	0.41	10.9	13.3	<500	
10:30	19.75	-52.5	6.26	1101	0.37	10.8	6.43	<500	
10:40	19.75	-52.0	6.25	1099	0.36	10.9	4.69	<500	
10:43	19.75	-51.9	6.25	1100	0.36	10.9	4.09	<500	
10:47	19.75	-51.8	6.25	1101	0.36	10.9	3.98	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 10:47

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-EA-01
Sample Date: 1/7/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 11:28

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	25.00	Standing Water in Well (feet):	6.65
Depth to LNAPL (feet):	17.65	Well Diameter (in.)	2
Depth to Water (feet):	18.35	Sample Depth (feet BGS):	20.5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	13 to 23	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [X] Poor [ ] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [ ] Yes [X] No **Well-** [X] Poor [ ] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 12:30 **Stop time:** 14:50

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
13:57	17.90	-14.9	6.18	1083	0.03	11.4	48.6	<500	
14:03	17.90	-16.3	6.18	1082	0.04	11.4	19.0	<500	
14:08	17.90	-17.5	6.18	1082	0.02	11.5	21.04	<500	
14:11	17.90	-17.9	6.18	1081	0.02	11.5	18.83	<500	
14:21	17.90	-19.1	6.18	1086	0.01	11.4	23.02	<500	
14:30	17.90	-19.2	6.17	1084	0.04	11.4	22.14	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:31

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: Product Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

No protective casing installed.

1/4 gallons of product recovered before groundwater sampling.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 20s

Well ID: MW-101
Sample Date: 1/9/2020
Sampler's Name: Ben Ramos

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 14:28

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	12.45	Standing Water in Well (feet):	7.25
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	5.20	Sample Depth (feet BGS):	5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	0 to 10	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 8:20 **Stop time:** 9:59

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
9:12	5.30	-20.3	6.40	561	2.47	7.3	60.11	<500	
9:15	5.31	-26.9	6.39	567	0.68	7.3	65.60	<500	
9:18	5.31	-29.7	6.39	569	0.53	7.6	69.06	<500	
9:21	5.31	-31.6	6.39	571	0.48	7.8	64.65	<500	
9:50	5.31	-37.5	6.37	568	0.39	7.5	22.14	<500	
9:53	5.31	-37.6	6.37	568	0.39	7.5	23.97	<500	
9:56	5.31	-37.7	6.37	572	0.38	7.7	22.12	<500	
9:59	5.31	-37.7	6.37	574	0.38	7.7	20.42	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:59

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: Slightly grey Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Partly cloudy, 30s

Well ID: MW-102
Sample Date: 1/8/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 13:03

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	12.35	Standing Water in Well (feet):	5.55
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	6.80	Sample Depth (feet BGS):	5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	0 to 10	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 13:22 **Stop time:** 14:12

Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	1 ORP (mvolts) (± 10)	2 pH (s.u.) (± 0.1)	3 Spec. Cond. (mS/cm) (±3%)	4 DO (mg/L) (±10% or 3 rdgs <0.5)	5 Temperature (ºC) (±3%)	6 Turbidity (ntu) (±10% or <5ntu)	7 Flow (ml/min) (<500 ml/min)	8 Notes
14:00	6.80	-34.7	6.27	1158	0.38	10.5	14.76	<500	
14:05	6.80	-37.1	6.26	1144	0.34	10.4	16.2	<500	
14:08	6.80	-38.6	6.26	1147	0.32	10.6	16.47	<500	
14:11	6.80	-39.9	6.26	1138	0.29	10.7	16.74	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:12

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: Waste Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-103
Sample Date: 1/8/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 8:55

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet): 11.60
Depth to LNAPL (feet): --
Depth to Water (feet): 4.72
Depth to DNAPL (feet): --
Well Screened Interval (feet BGS): 0 to 10

Standing Water in Well (feet): 6.88
Well Diameter (in.) 2
Sample Depth (feet BGS): 5
Standpipe: TPVC to Ground Surface (feet) --
Roadbox: TPVC to Ground Surface (feet) --

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Meter Type: Ysi Pro Dss No. Rental

Flow-Thru Cell Vol (mL): 500

INSTRUMENT MEASUREMENTS:

Start time: 11:40 **Stop time:** 12:53

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
12:05	5.03	33.8	6.11	154.5	3.73	6.8	25.83	<500	
12:25	5.13	30.3	6.17	191.4	2.12	6.7	11.60	<500	
12:35	5.13	26.6	6.19	200.1	2.04	6.7	7.65	<500	
12:45	5.13	24.7	6.21	208.5	1.93	6.7	4.83	<500	
12:50	5.13	24.6	6.21	209.3	1.95	6.7	4.12	<500	
12:53	5.13	24.5	6.21	209.5	1.96	6.7	4.07	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:53

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Cloudy, 30s

Well ID: MW-104
Sample Date: 1/8/2020
Sampler's Name: Ben Ramos

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 11:45

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	13.00	Standing Water in Well (feet):	6.46
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	6.54	Sample Depth (feet BGS):	5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	0 to 10	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 12:18 **Stop time:** 13:45

Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	1 ORP (mvolts) (± 10)	2 pH (s.u.) (± 0.1)	3 Spec. Cond. (mS/cm) (±3%)	4 DO (mg/L) (±10% or 3 rdgs <0.5)	5 Temperature (ºC) (±3%)	6 Turbidity (ntu) (±10% or <5ntu)	7 Flow (ml/min) (<500 ml/min)	8 Notes
12:18	7.07	85.0	8.40	308.5	6.45	8.7	193.73	<500	
12:24	7.06	74.9	7.82	282.9	4.26	8.7	270.5	<500	
12:33	7.05	60.6	7.26	269.4	2.48	9.1	450.31	<500	
12:44	7.05	58.6	6.74	258.7	2.03	8.4	23,72	<500	
12:47	7.04	59.2	6.76	258.8	1.94	8.4	20.48	<500	
12:50	7.04	60.4	6.70	258.3	1.75	8.2	19.34	<500	
13:16	7.03	59.7	6.48	266.3	0.47	8.7	582.20	<500	Sample became silty
13:19	7.03	57.2	6.46	262.9	0.28	8.7	583.33	<500	
13:40	7.03	54.1	6.44	266.3	0.14	8.7	541.74	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 13:45

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: Grey Odor: None Clarity: Cloudy

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

Sample was silty.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Partly cloudy, 30s

Well ID: MW-105
Sample Date: 1/8/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/8/2020 9:23

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	12.85	Standing Water in Well (feet):	8.21
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	4.64	Sample Depth (feet BGS):	5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	0 to 10	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 9:26 **Stop time:** 11:29

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
10:22	4.67	71.9	5.90	249.3	0.92	6.7	11.73	<500	
10:30	4.67	66.2	5.88	250.9	0.48	6.5	10.6	<500	
10:35	4.67	63.5	5.87	246.8	0.41	6.3	7.03	<500	
10:40	4.67	63.3	5.86	245.4	0.39	6.1	5.91	<500	
10:45	4.67	64.1	5.86	244.9	0.37	6.1	5.08	<500	
10:48	4.67	64.8	5.86	245.0	0.36	6.2	5.49	<500	
10:51	4.67	65.8	5.86	243.9	0.35	6.0	5.11	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:29

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-106S
Sample Date: 1/7/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 12:45

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	12.70	Standing Water in Well (feet):	8.55
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	4.15	Sample Depth (feet BGS):	5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	0 to 10	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 12:55 **Stop time:** 14:47

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
13:58	4.26	-21.9	5.95	562	0.30	9.1	15.57	<500	
14:10	4.26	-22.2	5.96	562	0.30	8.9	13.50	<500	
14:29	4.26	-24.1	5.95	562	0.33	9.2	13.80	<500	
14:35	4.26	-26.4	5.96	562	0.30	9.2	6.13	<500	
14:40	4.26	-27.0	5.96	563	0.28	9.1	4.89	<500	
14:43	4.26	-27.1	5.96	562	0.28	9.1	4.17	<500	
14:47	4.26	-27.3	5.96	562	0.27	9.1	4.23	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 14:47

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-106D
Sample Date: 1/7/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 12:50

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	30.20	Standing Water in Well (feet):	22.50
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	7.70	Sample Depth (feet BGS):	27.5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	25 to 30	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 13:03 **Stop time:** 15:07

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
14:50	14.75	-471.9	7.06	747	0.41	9.3	310.3	<500	
15:00	17.35	-464.5	7.07	757	0.39	9.4	244.6	<500	
15:03	17.40	-456.1	7.07	756	0.40	9.4	240.12	<500	
15:07	17.45	-454.3	7.07	757	0.39	9.4	237.37	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 15:07

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: Slightly black Odor: None Clarity: Cloudy

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

Well very silty when began pumping.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather:

Well ID: MW-107
Sample Date: 1/9/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/9/2020 14:10

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	23.40	Standing Water in Well (feet):	--
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	--	Sample Depth (feet BGS):	5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	0 to 10	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [X] Poor [ ] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [ ] Yes [X] No **Well-** [X] Poor [ ] Good

EQUIPMENT

Sample Method: [ ] Bail [ ] Pump / [ ] Low Flow

Pump Type: No.

Meter Type: No.

Flow-Thru Cell Vol (mL):

INSTRUMENT MEASUREMENTS:

Start time: **Stop time:**

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes

SAMPLE TESTING INFORMATION:

SAMPLE TIME: _____

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: Odor: Clarity:

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

Unable to collect sample. No water in well.

Protective casing not yet installed.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Cloudy, 35

Well ID: MW-107R
Sample Date: 2/14/2020
Sampler's Name: Ben Ramos

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 2/14/2020 12:00

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	21.23	Standing Water in Well (feet):	4.08
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	17.15	Sample Depth (feet BGS):	15
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	10 to 20	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 12:30 **Stop time:** 15:00

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
14:45	18.59	--	6.92	152.5	9.43	7.0	290.90	<500	
14:50	--	--	6.26	152.3	7.60	6.7	218.73	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 12:45

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice
15 Solid Waste Metals/Mercury	EPA Methods 6010/7470	1	Poly	250mL	HNO3	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

Well went dry before stabilizing and was allowed to recharge.

Sample taken before stabilization.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-109
Sample Date: 1/7/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 9:02

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet):	26.65	Standing Water in Well (feet):	6.30
Depth to LNAPL (feet):	--	Well Diameter (in.)	2
Depth to Water (feet):	20.35	Sample Depth (feet BGS):	17.5
Depth to DNAPL (feet):	--	Standpipe: TPVC to Ground Surface (feet)	--
Well Screened Interval (feet BGS):	10 to 25	Roadbox: TPVC to Ground Surface (feet)	--

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [X] Yes [ ] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Flow-Thru Cell Vol (mL): 500

Meter Type: Ysi Pro Dss No. Rental

INSTRUMENT MEASUREMENTS:

Start time: 9:10 **Stop time:** 11:11

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
10:28	20.45	-13.6	6.30	1101	1.24	10.4	321.47	<500	
10:46	20.45	-11.0	6.28	1098	1.27	10.8	62.3	<500	
10:56	20.45	-12.7	6.28	1104	1.18	10.6	32.38	<500	
11:07	20.45	-12.9	6.28	1104	1.12	10.7	32.17	<500	
11:11	20.45	-13.2	6.28	1106	1.10	10.8	32.07	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:11

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-110
Sample Date: 1/7/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 9:10

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet): 32.70
Depth to LNAPL (feet): --
Depth to Water (feet): 23.30
Depth to DNAPL (feet): --
Well Screened Interval (feet BGS): 15 to 30

Standing Water in Well (feet): 9.40
Well Diameter (in.) 1
Sample Depth (feet BGS): 22.5
Standpipe: TPVC to Ground Surface (feet) --
Roadbox: TPVC to Ground Surface (feet) --

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [ ] Yes [X] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Meter Type: Ysi Pro Dss No. Rental

Flow-Thru Cell Vol (mL): 500

INSTRUMENT MEASUREMENTS:

Start time: 9:23 **Stop time:** 11:52

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
10:22	23.75	-64.7	6.63	2274	0.44	10.7	168	<500	
10:33	23.75	-57.5	6.60	2102	0.43	10.0	35.7	<500	
10:37	23.75	-53.0	6.56	1967	0.44	10.0	21.51	<500	
10:43	23.75	-50.4	6.55	1956	0.43	10.3	16.04	<500	
10:53	23.75	-50.3	6.56	1988	0.44	10.6	10.86	<500	
11:03	23.75	-49.4	6.55	1983	0.41	10.6	10.21	<500	
11:06	23.75	-50.0	6.56	1996	0.41	10.7	10.15	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 11:07

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice

Sample observations:

Color: None Odor: Waste Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

Silty when began pumping.

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-111
Sample Date: 1/7/2020
Sampler's Name: Rowan Hayes

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 8:56

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet): 26.00
Depth to LNAPL (feet): --
Depth to Water (feet): 15.95
Depth to DNAPL (feet): --
Well Screened Interval (feet BGS): 8 to 23

Standing Water in Well (feet): 10.05
Well Diameter (in.) 2
Sample Depth (feet BGS): 15.5
Standpipe: TPVC to Ground Surface (feet) --
Roadbox: TPVC to Ground Surface (feet) --

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [X] Yes [ ] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Meter Type: Ysi Pro Dss No. Rental

Flow-Thru Cell Vol (mL): 500

INSTRUMENT MEASUREMENTS:

Start time: 9:04 **Stop time:** 10:05

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
9:51	15.90	-22.3	6.26	1196	0.42	10.7	2.86	<500	
9:58	15.90	-25.0	6.26	1225	0.25	11.1	2.4	<500	
10:01	15.90	-26.2	6.26	1229	0.20	11.1	2.51	<500	
10:05	15.90	-27.7	6.26	1238	0.15	11.1	2.35	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 10:05

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice

Sample observations:

Color: None Odor: None Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

GROUNDWATER SAMPLING DATA SHEET

File No. 34648
Project: Truk-Away Landfill
Location: City: Warwick State: RI
Weather: Sunny, 35

Well ID: MW-112
Sample Date: 1/7/2020
Sampler's Name: Marissa Kelly

WATER LEVEL OBSERVATIONS

Measurement Date/Time: 1/7/2020 9:05

Point of Measurement: PVC Riser [X] Steel Casing [ ] Ground [ ]

Total Well Depth (feet): 27.65
Depth to LNAPL (feet): --
Depth to Water (feet): 16.45
Depth to DNAPL (feet): --
Well Screened Interval (feet BGS): 8 to 23

Standing Water in Well (feet): 11.20
Well Diameter (in.) 2
Sample Depth (feet BGS): 15.5
Standpipe: TPVC to Ground Surface (feet) --
Roadbox: TPVC to Ground Surface (feet) --

Well Condition: **Protective Casing-** [ ] Poor [X] Good **Lock-** [ ] Yes [X] No **Expansion Cap-** [X] Yes [ ] No **Well ID-** [X] Yes [ ] No **Concrete Collar-** [X] Yes [ ] No **Well-** [ ] Poor [X] Good

EQUIPMENT

Sample Method: [ ] Bail [X] Pump / [X] Low Flow

Pump Type: Geotech GeoPump Model Ii No. Rental
Meter Type: Ysi Pro Dss No. Rental

Flow-Thru Cell Vol (mL): 500

INSTRUMENT MEASUREMENTS:

Start time: 9:16 **Stop time:** 10:30

		1	2	3	4	5	6	7	8
Time: _____ (start)	Depth to Water (ft) (drawdown <0.3 or stable)	ORP (mvolts) (± 10)	pH (s.u.) (± 0.1)	Spec. Cond. (mS/cm) (±3%)	DO (mg/L) (±10% or 3 rdgs <0.5)	Temperature (ºC) (±3%)	Turbidity (ntu) (±10% or <5ntu)	Flow (ml/min) (<500 ml/min)	Notes
9:52	16.68	-13.1	6.17	764	0.89	10.5	2.60	<500	
9:55	16.68	-13.1	6.16	766	0.87	10.4	3.49	<500	
9:58	16.68	-13.0	6.16	766	0.86	10.5	2.42	<500	

SAMPLE TESTING INFORMATION:

SAMPLE TIME: 9:59

Analysis	Method	No. Bottles	Bottle Type	Volume	Preservation	Handling
VOC	EPA Method 8260	3	VOA	40 mL	HCl	Ice
SVOC	EPA Method 8270	2	AG	1 L	NP	Ice
TPH	EPA Method 8100	1	AG	1L	NP	Ice
Pesticides	EPA Method 8081	1	AG	1L	NP	Ice
PCBs	EPA Method 8082	1	AG	1L	NP	Ice

Sample observations:

Color: None Odor: Waste Clarity: Clear

Total Purge Volume:

Tubing Volume:

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

Notes:

NM - Not Measured NP - No Product observed BGS - below ground surface FT - feet in - inches mL - milliliters GAL - gallons mvolts - millivolts s.u. - standard units
mS/cm - microsiemens per centimeter mg/L - milligrams per liter ºC - degrees Celcius ntu - Nephelometric Turbidity Unit mL/min - milliliters per minute

APPENDIX F

LABORATORY CERTIFICATES

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19L0038

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:57 pm, Dec 09, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

SAMPLE RECEIPT

The following samples were received on December 02, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19L0038-01	TP-7 0-2ft	Soil	6010C, 8260B, 8270D
19L0038-02	TP-9 0-2ft	Soil	6010C, 8260B, 8270D
19L0038-03	Trip Blank	Soil	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

CL90524-BSD1 **Blank Spike recovery is above upper control limit (B+).**
1,4-Dioxane - Screen (0% @ 44-241%)

8270D Semi-Volatile Organic Compounds

C9L0053-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (87% @ 80-120%), 4,6-Dinitro-2-Methylphenol (97% @ 80-120%), Benzoic Acid (112% @ 80-120%), Pentachlorophenol (89% @ 80-120%)

C9L0053-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzo(b)fluoranthene (22% @ 20%)

C9L0053-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (25% @ 20%)

C9L0053-TUN1 **Benzidine tailing factor >2.**

CL90405-BS1 **Blank Spike recovery is below lower control limit (B-).**
Hexachlorocyclopentadiene (37% @ 40-140%)

Total Metals

CL90443-SRM1 **Standard Reference Material is biased low (R-).**
Lead (71% @ 83-113%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.32)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Arsenic	**1.91** (1.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Barium	**10.9** (1.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Beryllium	**0.28** (0.07)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Cadmium	ND (0.33)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Chromium	**4.37** (0.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Cobalt	**2.25** (0.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Copper	**9.12** (1.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Lead	**5.29** (3.32)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Nickel	**5.03** (1.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Selenium	ND (3.32)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Silver	ND (0.33)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Thallium	ND (3.32)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Vanadium	**6.33** (0.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443
Zinc	**18.7** (1.66)		6010C		1	KJK	12/05/19 12:53	3.35	100	CL90443

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90
Initial Volume: 18.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,1,1-Trichloroethane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,1,2,2-Tetrachloroethane	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,1,2-Trichloroethane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,1-Dichloroethane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,1-Dichloroethene	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,1-Dichloropropene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2,3-Trichlorobenzene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2,3-Trichloropropane	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2,4-Trichlorobenzene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2,4-Trimethylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2-Dibromo-3-Chloropropane	ND (1.03)	0.206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2-Dibromoethane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2-Dichlorobenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2-Dichloroethane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,2-Dichloropropane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,3,5-Trimethylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,3-Dichlorobenzene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,3-Dichloropropane	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,4-Dichlorobenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
1,4-Dioxane - Screen	ND (41.2)	39.2	8260B		1	12/05/19 13:05	C9L0085	CL90524
1-Chlorohexane	ND (0.206)	0.0825	8260B		1	12/05/19 13:05	C9L0085	CL90524
2,2-Dichloropropane	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
2-Butanone	ND (1.03)	0.701	8260B		1	12/05/19 13:05	C9L0085	CL90524
2-Chlorotoluene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
2-Hexanone	ND (1.03)	0.309	8260B		1	12/05/19 13:05	C9L0085	CL90524
4-Chlorotoluene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
4-Isopropyltoluene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
4-Methyl-2-Pentanone	ND (1.03)	0.330	8260B		1	12/05/19 13:05	C9L0085	CL90524
Acetone	ND (1.03)	0.557	8260B		1	12/05/19 13:05	C9L0085	CL90524
Benzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Bromobenzene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90
Initial Volume: 18.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
Bromodichloromethane	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Bromoform	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Bromomethane	ND (0.206)	0.0825	8260B		1	12/05/19 13:05	C9L0085	CL90524
Carbon Disulfide	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Carbon Tetrachloride	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Chlorobenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Chloroethane	ND (0.206)	0.0825	8260B		1	12/05/19 13:05	C9L0085	CL90524
Chloroform	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Chloromethane	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
cis-1,2-Dichloroethene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
cis-1,3-Dichloropropene	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
Dibromochloromethane	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Dibromomethane	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
Dichlorodifluoromethane	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
Diethyl Ether	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
Di-isopropyl ether	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Ethyl tertiary-butyl ether	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Ethylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Hexachlorobutadiene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Isopropylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Methyl tert-Butyl Ether	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
Methylene Chloride	ND (0.412)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Naphthalene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
n-Butylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
n-Propylbenzene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
sec-Butylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Styrene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
tert-Butylbenzene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Tertiary-amyl methyl ether	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Tetrachloroethene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Tetrahydrofuran	ND (1.03)	0.330	8260B		1	12/05/19 13:05	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90
Initial Volume: 18.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
trans-1,2-Dichloroethene	ND (0.206)	0.0618	8260B		1	12/05/19 13:05	C9L0085	CL90524
trans-1,3-Dichloropropene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Trichloroethene	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Trichlorofluoromethane	ND (0.206)	0.0825	8260B		1	12/05/19 13:05	C9L0085	CL90524
Vinyl Acetate	ND (0.206)	0.103	8260B		1	12/05/19 13:05	C9L0085	CL90524
Vinyl Chloride	ND (0.206)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Xylene O	ND (0.206)	0.0206	8260B		1	12/05/19 13:05	C9L0085	CL90524
Xylene P,M	ND (0.412)	0.0412	8260B		1	12/05/19 13:05	C9L0085	CL90524
Xylenes (Total)	ND (0.412)		8260B		1	12/05/19 13:05		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*107 %*		*70-130*
Surrogate: Dibromofluoromethane	*108 %*		*70-130*
Surrogate: Toluene-d8	*106 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 11:18

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
1,2,4-Trichlorobenzene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
1,2-Dichlorobenzene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
1,3-Dichlorobenzene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
1,4-Dichlorobenzene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,3,4,6-Tetrachlorophenol	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,4,5-Trichlorophenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,4,6-Trichlorophenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,4-Dichlorophenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,4-Dimethylphenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,4-Dinitrophenol	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,4-Dinitrotoluene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2,6-Dinitrotoluene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2-Chloronaphthalene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2-Chlorophenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2-Methylnaphthalene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2-Methylphenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2-Nitroaniline	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
2-Nitrophenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
3,3′-Dichlorobenzidine	ND (0.700)		8270D		1	12/04/19 17:21	C9L0053	CL90405
3+4-Methylphenol	ND (0.700)		8270D		1	12/04/19 17:21	C9L0053	CL90405
3-Nitroaniline	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4,6-Dinitro-2-Methylphenol	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4-Bromophenyl-phenylether	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4-Chloro-3-Methylphenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4-Chloroaniline	ND (0.700)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4-Chloro-phenyl-phenyl ether	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4-Nitroaniline	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
4-Nitrophenol	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Acenaphthene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Acenaphthylene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Acetophenone	ND (0.700)		8270D		1	12/04/19 17:21	C9L0053	CL90405

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 11:18

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aniline	ND (0.700)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Anthracene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Azobenzene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzo(a)anthracene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzo(a)pyrene	ND (0.175)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzo(b)fluoranthene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzo(g,h,i)perylene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzo(k)fluoranthene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzoic Acid	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Benzyl Alcohol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
bis(2-Chloroethoxy)methane	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
bis(2-Chloroethyl)ether	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
bis(2-chloroisopropyl)Ether	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
bis(2-Ethylhexyl)phthalate	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Butylbenzylphthalate	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Carbazole	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Chrysene	ND (0.175)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Dibenzo(a,h)Anthracene	ND (0.175)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Dibenzofuran	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Diethylphthalate	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Dimethylphthalate	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Di-n-butylphthalate	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Di-n-octylphthalate	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Fluoranthene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Fluorene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Hexachlorobenzene	ND (0.175)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Hexachlorobutadiene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Hexachlorocyclopentadiene	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Hexachloroethane	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Indeno(1,2,3-cd)Pyrene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Isophorone	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Naphthalene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-7 0-2ft
Date Sampled: 12/02/19 15:00
Percent Solids: 90
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 11:18

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Nitrobenzene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
N-Nitrosodimethylamine	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
N-Nitroso-Di-n-Propylamine	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
N-nitrosodiphenylamine	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Pentachlorophenol	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Phenanthrene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Phenol	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Pyrene	ND (0.350)		8270D		1	12/04/19 17:21	C9L0053	CL90405
Pyridine	ND (1.75)		8270D		1	12/04/19 17:21	C9L0053	CL90405

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*84 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*90 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*96 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*84 %*		*30-130*
Surrogate: 2-Fluorophenol	*97 %*		*30-130*
Surrogate: Nitrobenzene-d5	*89 %*		*30-130*
Surrogate: Phenol-d6	*92 %*		*30-130*
Surrogate: p-Terphenyl-d14	*100 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.54)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Arsenic	**2.22** (1.77)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Barium	**6.38** (1.77)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Beryllium	**0.19** (0.08)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Cadmium	ND (0.35)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Chromium	**3.22** (0.71)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Cobalt	**2.11** (0.71)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Copper	**5.26** (1.77)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Lead	ND (3.54)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Nickel	**3.79** (1.77)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Selenium	ND (3.54)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Silver	ND (0.35)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Thallium	ND (3.54)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Vanadium	**4.21** (0.71)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443
Zinc	**13.1** (1.77)		6010C		1	KJK	12/05/19 13:24	3.05	100	CL90443

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93
Initial Volume: 16
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,1,1-Trichloroethane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,1,2,2-Tetrachloroethane	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,1,2-Trichloroethane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,1-Dichloroethane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,1-Dichloroethene	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,1-Dichloropropene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2,3-Trichlorobenzene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2,3-Trichloropropane	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2,4-Trichlorobenzene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2,4-Trimethylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2-Dibromo-3-Chloropropane	ND (1.09)	0.218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2-Dibromoethane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2-Dichlorobenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2-Dichloroethane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,2-Dichloropropane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,3,5-Trimethylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,3-Dichlorobenzene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,3-Dichloropropane	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,4-Dichlorobenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
1,4-Dioxane - Screen	ND (43.6)	41.5	8260B		1	12/05/19 13:31	C9L0085	CL90524
1-Chlorohexane	ND (0.218)	0.0873	8260B		1	12/05/19 13:31	C9L0085	CL90524
2,2-Dichloropropane	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
2-Butanone	ND (1.09)	0.742	8260B		1	12/05/19 13:31	C9L0085	CL90524
2-Chlorotoluene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
2-Hexanone	ND (1.09)	0.327	8260B		1	12/05/19 13:31	C9L0085	CL90524
4-Chlorotoluene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
4-Isopropyltoluene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
4-Methyl-2-Pentanone	ND (1.09)	0.349	8260B		1	12/05/19 13:31	C9L0085	CL90524
Acetone	ND (1.09)	0.589	8260B		1	12/05/19 13:31	C9L0085	CL90524
Benzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Bromobenzene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93
Initial Volume: 16
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
Bromodichloromethane	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Bromoform	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Bromomethane	ND (0.218)	0.0873	8260B		1	12/05/19 13:31	C9L0085	CL90524
Carbon Disulfide	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Carbon Tetrachloride	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Chlorobenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Chloroethane	ND (0.218)	0.0873	8260B		1	12/05/19 13:31	C9L0085	CL90524
Chloroform	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Chloromethane	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
cis-1,2-Dichloroethene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
cis-1,3-Dichloropropene	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
Dibromochloromethane	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Dibromomethane	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
Dichlorodifluoromethane	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
Diethyl Ether	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
Di-isopropyl ether	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Ethyl tertiary-butyl ether	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Ethylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Hexachlorobutadiene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Isopropylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Methyl tert-Butyl Ether	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
Methylene Chloride	ND (0.436)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Naphthalene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
n-Butylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
n-Propylbenzene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
sec-Butylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Styrene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
tert-Butylbenzene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Tertiary-amyl methyl ether	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Tetrachloroethene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Tetrahydrofuran	ND (1.09)	0.349	8260B		1	12/05/19 13:31	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93
Initial Volume: 16
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
trans-1,2-Dichloroethene	ND (0.218)	0.0655	8260B		1	12/05/19 13:31	C9L0085	CL90524
trans-1,3-Dichloropropene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Trichloroethene	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Trichlorofluoromethane	ND (0.218)	0.0873	8260B		1	12/05/19 13:31	C9L0085	CL90524
Vinyl Acetate	ND (0.218)	0.109	8260B		1	12/05/19 13:31	C9L0085	CL90524
Vinyl Chloride	ND (0.218)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Xylene O	ND (0.218)	0.0218	8260B		1	12/05/19 13:31	C9L0085	CL90524
Xylene P,M	ND (0.436)	0.0436	8260B		1	12/05/19 13:31	C9L0085	CL90524
Xylenes (Total)	ND (0.436)		8260B		1	12/05/19 13:31		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*121 %*		*70-130*
Surrogate: Dibromofluoromethane	*124 %*		*70-130*
Surrogate: Toluene-d8	*123 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 11:18

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
1,2,4-Trichlorobenzene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
1,2-Dichlorobenzene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
1,3-Dichlorobenzene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
1,4-Dichlorobenzene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,3,4,6-Tetrachlorophenol	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,4,5-Trichlorophenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,4,6-Trichlorophenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,4-Dichlorophenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,4-Dimethylphenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,4-Dinitrophenol	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,4-Dinitrotoluene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2,6-Dinitrotoluene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2-Chloronaphthalene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2-Chlorophenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2-Methylnaphthalene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2-Methylphenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2-Nitroaniline	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
2-Nitrophenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
3,3′-Dichlorobenzidine	ND (0.755)		8270D		1	12/04/19 17:48	C9L0053	CL90405
3+4-Methylphenol	ND (0.755)		8270D		1	12/04/19 17:48	C9L0053	CL90405
3-Nitroaniline	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4,6-Dinitro-2-Methylphenol	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4-Bromophenyl-phenylether	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4-Chloro-3-Methylphenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4-Chloroaniline	ND (0.755)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4-Chloro-phenyl-phenyl ether	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4-Nitroaniline	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
4-Nitrophenol	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Acenaphthene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Acenaphthylene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Acetophenone	ND (0.755)		8270D		1	12/04/19 17:48	C9L0053	CL90405

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 11:18

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aniline	ND (0.755)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Anthracene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Azobenzene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzo(a)anthracene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzo(a)pyrene	ND (0.189)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzo(b)fluoranthene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzo(g,h,i)perylene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzo(k)fluoranthene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzoic Acid	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Benzyl Alcohol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
bis(2-Chloroethoxy)methane	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
bis(2-Chloroethyl)ether	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
bis(2-chloroisopropyl)Ether	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
bis(2-Ethylhexyl)phthalate	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Butylbenzylphthalate	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Carbazole	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Chrysene	ND (0.189)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Dibenzo(a,h)Anthracene	ND (0.189)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Dibenzofuran	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Diethylphthalate	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Dimethylphthalate	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Di-n-butylphthalate	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Di-n-octylphthalate	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Fluoranthene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Fluorene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Hexachlorobenzene	ND (0.189)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Hexachlorobutadiene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Hexachlorocyclopentadiene	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Hexachloroethane	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Indeno(1,2,3-cd)Pyrene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Isophorone	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Naphthalene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-9 0-2ft
Date Sampled: 12/02/19 15:30
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 11:18

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Nitrobenzene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
N-Nitrosodimethylamine	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
N-Nitroso-Di-n-Propylamine	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
N-nitrosodiphenylamine	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Pentachlorophenol	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Phenanthrene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Phenol	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Pyrene	ND (0.377)		8270D		1	12/04/19 17:48	C9L0053	CL90405
Pyridine	ND (1.89)		8270D		1	12/04/19 17:48	C9L0053	CL90405

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*81 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*92 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: 2-Fluorophenol	*87 %*		*30-130*
Surrogate: Nitrobenzene-d5	*80 %*		*30-130*
Surrogate: Phenol-d6	*88 %*		*30-130*
Surrogate: p-Terphenyl-d14	*91 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 12/02/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-03
Sample Matrix: Soil
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,1,1-Trichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,1,2-Trichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,1-Dichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,1-Dichloroethene	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,1-Dichloropropene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2,3-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2,3-Trichloropropane	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2,4-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2-Dibromo-3-Chloropropane	ND (1.00)	0.200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2-Dibromoethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2-Dichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,2-Dichloropropane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,3-Dichlorobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
1,4-Dioxane - Screen	ND (40.0)	38.0	8260B		1	12/05/19 12:13	C9L0085	CL90524
1-Chlorohexane	ND (0.200)	0.0800	8260B		1	12/05/19 12:13	C9L0085	CL90524
2,2-Dichloropropane	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
2-Butanone	ND (1.00)	0.680	8260B		1	12/05/19 12:13	C9L0085	CL90524
2-Chlorotoluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
2-Hexanone	ND (1.00)	0.300	8260B		1	12/05/19 12:13	C9L0085	CL90524
4-Chlorotoluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
4-Methyl-2-Pentanone	ND (1.00)	0.320	8260B		1	12/05/19 12:13	C9L0085	CL90524
Acetone	ND (1.00)	0.540	8260B		1	12/05/19 12:13	C9L0085	CL90524
Benzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Bromobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 12/02/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-03
Sample Matrix: Soil
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Bromoform	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Bromomethane	ND (0.200)	0.0800	8260B		1	12/05/19 12:13	C9L0085	CL90524
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Chlorobenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Chloroethane	ND (0.200)	0.0800	8260B		1	12/05/19 12:13	C9L0085	CL90524
Chloroform	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Chloromethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
cis-1,2-Dichloroethene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
cis-1,3-Dichloropropene	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
Dibromochloromethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Dibromomethane	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
Dichlorodifluoromethane	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
Diethyl Ether	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
Di-isopropyl ether	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Ethylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Hexachlorobutadiene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Methyl tert-Butyl Ether	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
Methylene Chloride	ND (0.400)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Naphthalene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
n-Propylbenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Styrene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Tertiary-amyl methyl ether	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Tetrachloroethene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Tetrahydrofuran	ND (1.00)	0.320	8260B		1	12/05/19 12:13	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 12/02/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0038
ESS Laboratory Sample ID: 19L0038-03
Sample Matrix: Soil
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
trans-1,2-Dichloroethene	ND (0.200)	0.0600	8260B		1	12/05/19 12:13	C9L0085	CL90524
trans-1,3-Dichloropropene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Trichloroethene	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Trichlorofluoromethane	ND (0.200)	0.0800	8260B		1	12/05/19 12:13	C9L0085	CL90524
Vinyl Acetate	ND (0.200)	0.100	8260B		1	12/05/19 12:13	C9L0085	CL90524
Vinyl Chloride	ND (0.200)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Xylene O	ND (0.200)	0.0200	8260B		1	12/05/19 12:13	C9L0085	CL90524
Xylene P,M	ND (0.400)	0.0400	8260B		1	12/05/19 12:13	C9L0085	CL90524
Xylenes (Total)	ND (0.400)		8260B		1	12/05/19 12:13		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*116 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*116 %*		*70-130*
Surrogate: Dibromofluoromethane	*115 %*		*70-130*
Surrogate: Toluene-d8	*112 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Total Metals

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CL90443 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Cobalt	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	29.9	14.5	mg/kg wet	51.30		58	40-160			
Arsenic	185	7.25	mg/kg wet	202.0		91	80-120			
Barium	347	7.25	mg/kg wet	343.0		101	80-120			
Beryllium	47.3	0.32	mg/kg wet	52.10		91	80-120			
Cadmium	129	1.45	mg/kg wet	149.0		86	80-120			
Chromium	168	2.90	mg/kg wet	182.0		92	80-120			
Cobalt	153	2.90	mg/kg wet	171.0		89	80-120			
Copper	221	7.25	mg/kg wet	225.0		98	80-120			
Lead	301	14.5	mg/kg wet	333.0		90	80-120			
Nickel	155	7.25	mg/kg wet	167.0		93	80-120			
Selenium	156	14.5	mg/kg wet	169.0		93	80-120			
Silver	45.3	1.45	mg/kg wet	48.90		93	80-120			
Thallium	65.0	14.5	mg/kg wet	82.30		79	62-139			
Vanadium	217	2.90	mg/kg wet	227.0		95	80-120			
Vanadium	217	2.90	mg/kg wet	227.0		95	80-120			
Zinc	413	7.25	mg/kg wet	459.0		90	80-120			
LCS Dup										
Antimony	27.9	14.3	mg/kg wet	51.30		54	40-160	7	20	
Arsenic	186	7.14	mg/kg wet	202.0		92	80-120	0.8	20	
Barium	311	7.14	mg/kg wet	343.0		91	80-120	11	20	
Beryllium	47.4	0.31	mg/kg wet	52.10		91	80-120	0.06	20	
Cadmium	128	1.43	mg/kg wet	149.0		86	80-120	0.6	20	
Chromium	169	2.86	mg/kg wet	182.0		93	80-120	0.4	20	
Cobalt	153	2.86	mg/kg wet	171.0		90	80-120	0.2	20	
Copper	224	7.14	mg/kg wet	225.0		100	80-120	2	20	
Lead	302	14.3	mg/kg wet	333.0		91	80-120	0.2	20	
Nickel	155	7.14	mg/kg wet	167.0		93	80-120	0.2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL90443 - 3050B										
Selenium	159	14.3	mg/kg wet	169.0		94	80-120	2	20	
Silver	44.7	1.43	mg/kg wet	48.90		91	80-120	1	20	
Thallium	65.0	14.3	mg/kg wet	82.30		79	62-139	0.1	20	
Vanadium	218	2.86	mg/kg wet	227.0		96	80-120	0.6	20	
Vanadium	218	2.86	mg/kg wet	227.0		96	80-120	0.6	20	
Zinc	411	7.14	mg/kg wet	459.0		89	80-120	0.5	20	
Reference										
Lead	3170	19.6	mg/kg wet	4490		71	83-113			R-
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*5.27*		mg/kg wet	*5.000*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.17*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*5.14*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Toluene-d8	*4.96*		mg/kg wet	*5.000*		*99*	*70-130*			
LCS										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
1,1,1,2-Tetrachloroethane	1.72	0.200	mg/kg wet	2.000		86	70-130			
1,1,1-Trichloroethane	1.89	0.200	mg/kg wet	2.000		95	70-130			
1,1,2,2-Tetrachloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,1,2-Trichloroethane	1.81	0.200	mg/kg wet	2.000		91	70-130			
1,1-Dichloroethane	2.11	0.200	mg/kg wet	2.000		105	70-130			
1,1-Dichloroethene	2.11	0.200	mg/kg wet	2.000		105	70-130			
1,1-Dichloropropene	2.19	0.200	mg/kg wet	2.000		110	70-130			
1,2,3-Trichlorobenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
1,2,3-Trichloropropane	1.83	0.200	mg/kg wet	2.000		91	70-130			
1,2,4-Trichlorobenzene	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,2,4-Trimethylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130			
1,2-Dibromo-3-Chloropropane	1.71	1.00	mg/kg wet	2.000		85	70-130			
1,2-Dibromoethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
1,2-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
1,2-Dichloroethane	2.05	0.200	mg/kg wet	2.000		102	70-130			
1,2-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,3,5-Trimethylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130			
1,3-Dichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
1,3-Dichloropropane	2.17	0.200	mg/kg wet	2.000		108	70-130			
1,4-Dichlorobenzene	1.97	0.200	mg/kg wet	2.000		98	70-130			
1,4-Dioxane - Screen	38.3	40.0	mg/kg wet	40.00		96	44-241			J
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130			
2,2-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130			
2-Butanone	9.81	1.00	mg/kg wet	10.00		98	70-130			
2-Chlorotoluene	1.99	0.200	mg/kg wet	2.000		99	70-130			
2-Hexanone	9.36	1.00	mg/kg wet	10.00		94	70-130			
4-Chlorotoluene	2.08	0.200	mg/kg wet	2.000		104	70-130			
4-Isopropyltoluene	1.97	0.200	mg/kg wet	2.000		98	70-130			
4-Methyl-2-Pentanone	8.76	1.00	mg/kg wet	10.00		88	70-130			
Acetone	9.69	1.00	mg/kg wet	10.00		97	70-130			
Benzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
Bromobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130			
Bromochloromethane	1.93	0.200	mg/kg wet	2.000		96	70-130			
Bromodichloromethane	1.80	0.200	mg/kg wet	2.000		90	70-130			
Bromoform	1.57	0.200	mg/kg wet	2.000		78	70-130			
Bromomethane	2.34	0.200	mg/kg wet	2.000		117	70-130			
Carbon Disulfide	2.10	0.200	mg/kg wet	2.000		105	70-130			
Carbon Tetrachloride	1.98	0.200	mg/kg wet	2.000		99	70-130			
Chlorobenzene	1.95	0.200	mg/kg wet	2.000		98	70-130			
Chloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
Chloroform	2.16	0.200	mg/kg wet	2.000		108	70-130			
Chloromethane	1.75	0.200	mg/kg wet	2.000		88	70-130			
cis-1,2-Dichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130			
cis-1,3-Dichloropropene	2.04	0.200	mg/kg wet	2.000		102	70-130			
Dibromochloromethane	1.79	0.200	mg/kg wet	2.000		89	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Dibromomethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
Dichlorodifluoromethane	1.71	0.200	mg/kg wet	2.000		86	70-130			
Diethyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Di-isopropyl ether	2.10	0.200	mg/kg wet	2.000		105	70-130			
Ethyl tertiary-butyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130			
Ethylbenzene	1.99	0.200	mg/kg wet	2.000		99	70-130			
Hexachlorobutadiene	2.15	0.200	mg/kg wet	2.000		108	70-130			
Isopropylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Methyl tert-Butyl Ether	2.03	0.200	mg/kg wet	2.000		102	70-130			
Methylene Chloride	2.06	0.400	mg/kg wet	2.000		103	70-130			
Naphthalene	1.79	0.200	mg/kg wet	2.000		90	70-130			
n-Butylbenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
n-Propylbenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
sec-Butylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
Styrene	1.84	0.200	mg/kg wet	2.000		92	70-130			
tert-Butylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Tertiary-amyl methyl ether	2.12	0.200	mg/kg wet	2.000		106	70-130			
Tetrachloroethene	1.78	0.200	mg/kg wet	2.000		89	70-130			
Tetrahydrofuran	1.64	1.00	mg/kg wet	2.000		82	70-130			
Toluene	2.08	0.200	mg/kg wet	2.000		104	70-130			
trans-1,2-Dichloroethene	2.09	0.200	mg/kg wet	2.000		104	70-130			
trans-1,3-Dichloropropene	2.03	0.200	mg/kg wet	2.000		101	70-130			
Trichloroethene	2.05	0.200	mg/kg wet	2.000		103	70-130			
Trichlorofluoromethane	2.10	0.200	mg/kg wet	2.000		105	70-130			
Vinyl Acetate	1.99	0.200	mg/kg wet	2.000		99	70-130			
Vinyl Chloride	1.68	0.200	mg/kg wet	2.000		84	70-130			
Xylene O	1.97	0.200	mg/kg wet	2.000		99	70-130			
Xylene P,M	3.97	0.400	mg/kg wet	4.000		99	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.00*		mg/kg wet	*5.000*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.92*		mg/kg wet	*5.000*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*5.00*		mg/kg wet	*5.000*		*100*	*70-130*			
Surrogate: Toluene-d8	*4.99*		mg/kg wet	*5.000*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130	1	25	
1,1,1-Trichloroethane	1.96	0.200	mg/kg wet	2.000		98	70-130	3	25	
1,1,2,2-Tetrachloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	2	25	
1,1,2-Trichloroethane	1.93	0.200	mg/kg wet	2.000		97	70-130	6	25	
1,1-Dichloroethane	2.15	0.200	mg/kg wet	2.000		107	70-130	2	25	
1,1-Dichloroethene	2.14	0.200	mg/kg wet	2.000		107	70-130	2	25	
1,1-Dichloropropene	2.19	0.200	mg/kg wet	2.000		109	70-130	0.2	25	
1,2,3-Trichlorobenzene	1.91	0.200	mg/kg wet	2.000		96	70-130	6	25	
1,2,3-Trichloropropane	1.67	0.200	mg/kg wet	2.000		83	70-130	9	25	
1,2,4-Trichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	1	25	
1,2,4-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	0.7	25	
1,2-Dibromo-3-Chloropropane	1.82	1.00	mg/kg wet	2.000		91	70-130	6	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
1,2-Dibromoethane	1.90	0.200	mg/kg wet	2.000		95	70-130	0.6	25	
1,2-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	0.4	25	
1,2-Dichloroethane	2.05	0.200	mg/kg wet	2.000		102	70-130	0	25	
1,2-Dichloropropane	2.08	0.200	mg/kg wet	2.000		104	70-130	1	25	
1,3,5-Trimethylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130	2	25	
1,3-Dichlorobenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	1	25	
1,3-Dichloropropane	2.07	0.200	mg/kg wet	2.000		104	70-130	5	25	
1,4-Dichlorobenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	2	25	
1,4-Dioxane - Screen	ND	40.0	mg/kg wet	40.00		0	44-241	200	200	B+
1-Chlorohexane	1.80	0.200	mg/kg wet	2.000		90	70-130	2	25	
2,2-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130	0.1	25	
2-Butanone	10.1	1.00	mg/kg wet	10.00		101	70-130	3	25	
2-Chlorotoluene	1.95	0.200	mg/kg wet	2.000		97	70-130	2	25	
2-Hexanone	8.31	1.00	mg/kg wet	10.00		83	70-130	12	25	
4-Chlorotoluene	1.99	0.200	mg/kg wet	2.000		100	70-130	4	25	
4-Isopropyltoluene	1.89	0.200	mg/kg wet	2.000		95	70-130	4	25	
4-Methyl-2-Pentanone	8.65	1.00	mg/kg wet	10.00		86	70-130	1	25	
Acetone	8.67	1.00	mg/kg wet	10.00		87	70-130	11	25	
Benzene	2.03	0.200	mg/kg wet	2.000		102	70-130	3	25	
Bromobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Bromochloromethane	1.99	0.200	mg/kg wet	2.000		100	70-130	3	25	
Bromodichloromethane	1.85	0.200	mg/kg wet	2.000		93	70-130	3	25	
Bromoform	1.54	0.200	mg/kg wet	2.000		77	70-130	2	25	
Bromomethane	2.44	0.200	mg/kg wet	2.000		122	70-130	5	25	
Carbon Disulfide	2.16	0.200	mg/kg wet	2.000		108	70-130	3	25	
Carbon Tetrachloride	1.96	0.200	mg/kg wet	2.000		98	70-130	1	25	
Chlorobenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	4	25	
Chloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130	7	25	
Chloroform	2.13	0.200	mg/kg wet	2.000		107	70-130	1	25	
Chloromethane	1.77	0.200	mg/kg wet	2.000		88	70-130	0.9	25	
cis-1,2-Dichloroethene	2.10	0.200	mg/kg wet	2.000		105	70-130	4	25	
cis-1,3-Dichloropropene	1.99	0.200	mg/kg wet	2.000		100	70-130	2	25	
Dibromochloromethane	1.71	0.200	mg/kg wet	2.000		86	70-130	4	25	
Dibromomethane	2.06	0.200	mg/kg wet	2.000		103	70-130	1	25	
Dichlorodifluoromethane	1.70	0.200	mg/kg wet	2.000		85	70-130	0.6	25	
Diethyl Ether	1.99	0.200	mg/kg wet	2.000		99	70-130	2	25	
Di-isopropyl ether	2.11	0.200	mg/kg wet	2.000		106	70-130	0.5	25	
Ethyl tertiary-butyl ether	2.00	0.200	mg/kg wet	2.000		100	70-130	3	25	
Ethylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	1	25	
Hexachlorobutadiene	1.94	0.200	mg/kg wet	2.000		97	70-130	10	25	
Isopropylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130	3	25	
Methyl tert-Butyl Ether	2.08	0.200	mg/kg wet	2.000		104	70-130	2	25	
Methylene Chloride	2.01	0.400	mg/kg wet	2.000		101	70-130	2	25	
Naphthalene	1.80	0.200	mg/kg wet	2.000		90	70-130	0.8	25	
n-Butylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
n-Propylbenzene	1.95	0.200	mg/kg wet	2.000		98	70-130	4	25	
sec-Butylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	3	25	
Styrene	1.87	0.200	mg/kg wet	2.000		93	70-130	1	25	
tert-Butylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	1	25	
Tertiary-amyl methyl ether	2.03	0.200	mg/kg wet	2.000		102	70-130	4	25	
Tetrachloroethene	1.76	0.200	mg/kg wet	2.000		88	70-130	1	25	
Tetrahydrofuran	1.93	1.00	mg/kg wet	2.000		97	70-130	17	25	
Toluene	2.11	0.200	mg/kg wet	2.000		106	70-130	2	25	
trans-1,2-Dichloroethene	2.10	0.200	mg/kg wet	2.000		105	70-130	0.9	25	
trans-1,3-Dichloropropene	2.01	0.200	mg/kg wet	2.000		100	70-130	0.8	25	
Trichloroethene	2.03	0.200	mg/kg wet	2.000		102	70-130	1	25	
Trichlorofluoromethane	2.19	0.200	mg/kg wet	2.000		110	70-130	4	25	
Vinyl Acetate	2.16	0.200	mg/kg wet	2.000		108	70-130	8	25	
Vinyl Chloride	1.64	0.200	mg/kg wet	2.000		82	70-130	3	25	
Xylene O	1.93	0.200	mg/kg wet	2.000		97	70-130	2	25	
Xylene P,M	4.00	0.400	mg/kg wet	4.000		100	70-130	0.8	25	
Surrogate: 1,2-Dichloroethane-d4	*5.06*		mg/kg wet	*5.000*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.91*		mg/kg wet	*5.000*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*5.17*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Toluene-d8	*4.93*		mg/kg wet	*5.000*		*99*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.15*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.79*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.64*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.01*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: 2-Fluorophenol	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.05*		mg/kg wet	*3.333*		*62*	*30-130*			
Surrogate: Phenol-d6	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.30*		mg/kg wet	*3.333*		*99*	*30-130*			
LCS										
1,1-Biphenyl	2.16	0.333	mg/kg wet	3.333		65	40-140			
1,2,4-Trichlorobenzene	1.92	0.333	mg/kg wet	3.333		57	40-140			
1,2-Dichlorobenzene	1.91	0.333	mg/kg wet	3.333		57	40-140			
1,3-Dichlorobenzene	1.84	0.333	mg/kg wet	3.333		55	40-140			
1,4-Dichlorobenzene	1.83	0.333	mg/kg wet	3.333		55	40-140			
2,3,4,6-Tetrachlorophenol	2.54	1.67	mg/kg wet	3.333		76	30-130			
2,4,5-Trichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dichlorophenol	2.29	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dimethylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dinitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130			
2,4-Dinitrotoluene	2.97	0.333	mg/kg wet	3.333		89	40-140			
2,6-Dinitrotoluene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Chloronaphthalene	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Chlorophenol	2.12	0.333	mg/kg wet	3.333		64	30-130			
2-Methylnaphthalene	2.14	0.333	mg/kg wet	3.333		64	40-140			
2-Methylphenol	2.35	0.333	mg/kg wet	3.333		70	30-130			
2-Nitroaniline	2.80	0.333	mg/kg wet	3.333		84	40-140			
2-Nitrophenol	1.91	0.333	mg/kg wet	3.333		57	30-130			
3,3´-Dichlorobenzidine	2.48	0.667	mg/kg wet	3.333		74	40-140			
3+4-Methylphenol	5.16	0.667	mg/kg wet	6.667		77	30-130			
3-Nitroaniline	2.68	0.333	mg/kg wet	3.333		80	40-140			
4,6-Dinitro-2-Methylphenol	2.85	1.67	mg/kg wet	3.333		85	30-130			
4-Bromophenyl-phenylether	2.49	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		84	30-130			
4-Chloroaniline	1.61	0.667	mg/kg wet	3.333		48	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	2.65	0.333	mg/kg wet	3.333		79	40-140			
4-Nitrophenol	2.46	1.67	mg/kg wet	3.333		74	30-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Acenaphthene	2.35	0.333	mg/kg wet	3.333		70	40-140			
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		71	40-140			
Acetophenone	2.19	0.667	mg/kg wet	3.333		66	40-140			
Aniline	1.37	0.667	mg/kg wet	3.333		41	40-140			
Anthracene	2.81	0.333	mg/kg wet	3.333		84	40-140			
Azobenzene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Benzo(a)pyrene	2.83	0.167	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Benzo(g,h,i)perylene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Benzo(k)fluoranthene	3.08	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.39	1.67	mg/kg wet	3.333		72	40-140			
Benzyl Alcohol	1.56	0.333	mg/kg wet	3.333		47	40-140			
bis(2-Chloroethoxy)methane	2.06	0.333	mg/kg wet	3.333		62	40-140			
bis(2-Chloroethyl)ether	2.00	0.333	mg/kg wet	3.333		60	40-140			
bis(2-chloroisopropyl)Ether	2.04	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Ethylhexyl)phthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140			
Carbazole	3.00	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	2.79	0.167	mg/kg wet	3.333		84	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140			
Dimethylphthalate	2.72	0.333	mg/kg wet	3.333		82	40-140			
Di-n-butylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140			
Di-n-octylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Fluoranthene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorobenzene	2.54	0.167	mg/kg wet	3.333		76	40-140			
Hexachlorobutadiene	1.82	0.333	mg/kg wet	3.333		55	40-140			
Hexachlorocyclopentadiene	1.23	1.67	mg/kg wet	3.333		37	40-140			B-
Hexachloroethane	1.87	0.333	mg/kg wet	3.333		56	40-140			
Indeno(1,2,3-cd)Pyrene	2.76	0.333	mg/kg wet	3.333		83	40-140			
Isophorone	1.94	0.333	mg/kg wet	3.333		58	40-140			
Naphthalene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Nitrobenzene	2.06	0.333	mg/kg wet	3.333		62	40-140			
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.23	0.333	mg/kg wet	3.333		67	40-140			
N-nitrosodiphenylamine	2.72	0.333	mg/kg wet	3.333		82	40-140			
Pentachlorophenol	2.61	1.67	mg/kg wet	3.333		78	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Phenol	2.21	0.333	mg/kg wet	3.333		66	30-130			
Pyrene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	1.41	1.67	mg/kg wet	3.333		42	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*1.95*		mg/kg wet	*3.333*		*59*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Surrogate: 2,4,6-Tribromophenol	*4.18*		mg/kg wet	*5.000*		*84*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.43*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.34*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2-Fluorophenol	*3.14*		mg/kg wet	*5.000*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.18*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
LCS Dup										
1,1-Biphenyl	2.20	0.333	mg/kg wet	3.333		66	40-140	2	30	
1,2,4-Trichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	8	30	
1,2-Dichlorobenzene	2.17	0.333	mg/kg wet	3.333		65	40-140	13	30	
1,3-Dichlorobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	15	30	
1,4-Dichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	13	30	
2,3,4,6-Tetrachlorophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	1	30	
2,4,5-Trichlorophenol	2.58	0.333	mg/kg wet	3.333		77	30-130	2	30	
2,4,6-Trichlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130	1	30	
2,4-Dichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130	3	30	
2,4-Dimethylphenol	2.29	0.333	mg/kg wet	3.333		69	30-130	3	30	
2,4-Dinitrophenol	2.80	1.67	mg/kg wet	3.333		84	30-130	3	30	
2,4-Dinitrotoluene	2.95	0.333	mg/kg wet	3.333		89	40-140	0.6	30	
2,6-Dinitrotoluene	2.69	0.333	mg/kg wet	3.333		81	40-140	0.8	30	
2-Chloronaphthalene	2.33	0.333	mg/kg wet	3.333		70	40-140	2	30	
2-Chlorophenol	2.35	0.333	mg/kg wet	3.333		70	30-130	10	30	
2-Methylnaphthalene	2.26	0.333	mg/kg wet	3.333		68	40-140	5	30	
2-Methylphenol	2.53	0.333	mg/kg wet	3.333		76	30-130	7	30	
2-Nitroaniline	2.78	0.333	mg/kg wet	3.333		83	40-140	0.8	30	
2-Nitrophenol	2.06	0.333	mg/kg wet	3.333		62	30-130	7	30	
3,3´-Dichlorobenzidine	2.33	0.667	mg/kg wet	3.333		70	40-140	6	30	
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130	8	30	
3-Nitroaniline	2.58	0.333	mg/kg wet	3.333		77	40-140	4	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	0.3	30	
4-Bromophenyl-phenylether	2.50	0.333	mg/kg wet	3.333		75	40-140	0.1	30	
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		83	30-130	0.1	30	
4-Chloroaniline	1.50	0.667	mg/kg wet	3.333		45	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.58	0.333	mg/kg wet	3.333		77	40-140	0.2	30	
4-Nitroaniline	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
4-Nitrophenol	2.46	1.67	mg/kg wet	3.333		74	30-130	0.1	30	
Acenaphthene	2.35	0.333	mg/kg wet	3.333		70	40-140	0.07	30	
Acenaphthylene	2.37	0.333	mg/kg wet	3.333		71	40-140	0.4	30	
Acetophenone	2.44	0.667	mg/kg wet	3.333		73	40-140	11	30	
Aniline	1.53	0.667	mg/kg wet	3.333		46	40-140	11	30	
Anthracene	2.82	0.333	mg/kg wet	3.333		85	40-140	0.4	30	
Azobenzene	2.70	0.333	mg/kg wet	3.333		81	40-140	2	30	
Benzo(a)anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	2	30	
Benzo(a)pyrene	2.74	0.167	mg/kg wet	3.333		82	40-140	3	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Benzo(b)fluoranthene	2.98	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(g,h,i)perylene	2.63	0.333	mg/kg wet	3.333		79	40-140	1	30	
Benzo(k)fluoranthene	2.59	0.333	mg/kg wet	3.333		78	40-140	17	30	
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140	2	30	
Benzyl Alcohol	1.69	0.333	mg/kg wet	3.333		51	40-140	8	30	
bis(2-Chloroethoxy)methane	2.16	0.333	mg/kg wet	3.333		65	40-140	5	30	
bis(2-Chloroethyl)ether	2.32	0.333	mg/kg wet	3.333		70	40-140	15	30	
bis(2-chloroisopropyl)Ether	2.27	0.333	mg/kg wet	3.333		68	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.05	0.333	mg/kg wet	3.333		92	40-140	0.6	30	
Butylbenzylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	0.2	30	
Carbazole	2.93	0.333	mg/kg wet	3.333		88	40-140	2	30	
Chrysene	2.88	0.167	mg/kg wet	3.333		87	40-140	0.7	30	
Dibenzo(a,h)Anthracene	2.80	0.167	mg/kg wet	3.333		84	40-140	0.2	30	
Dibenzofuran	2.45	0.333	mg/kg wet	3.333		74	40-140	1	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	0.8	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	0.4	30	
Di-n-butylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140	2	30	
Di-n-octylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140	2	30	
Fluoranthene	2.90	0.333	mg/kg wet	3.333		87	40-140	4	30	
Fluorene	2.70	0.333	mg/kg wet	3.333		81	40-140	0.7	30	
Hexachlorobenzene	2.48	0.167	mg/kg wet	3.333		74	40-140	2	30	
Hexachlorobutadiene	2.02	0.333	mg/kg wet	3.333		60	40-140	10	30	
Hexachlorocyclopentadiene	1.32	1.67	mg/kg wet	3.333		40	40-140	7	30	
Hexachloroethane	2.16	0.333	mg/kg wet	3.333		65	40-140	14	30	
Indeno(1,2,3-cd)Pyrene	2.76	0.333	mg/kg wet	3.333		83	40-140	0.05	30	
Isophorone	2.03	0.333	mg/kg wet	3.333		61	40-140	5	30	
Naphthalene	2.12	0.333	mg/kg wet	3.333		64	40-140	8	30	
Nitrobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	7	30	
N-Nitrosodimethylamine	2.00	0.333	mg/kg wet	3.333		60	40-140	14	30	
N-Nitroso-Di-n-Propylamine	2.45	0.333	mg/kg wet	3.333		73	40-140	9	30	
N-nitrosodiphenylamine	2.69	0.333	mg/kg wet	3.333		81	40-140	1	30	
Pentachlorophenol	2.58	1.67	mg/kg wet	3.333		77	30-130	1	30	
Phenanthrene	2.71	0.333	mg/kg wet	3.333		81	40-140	3	30	
Phenol	2.43	0.333	mg/kg wet	3.333		73	30-130	9	30	
Pyrene	2.86	0.333	mg/kg wet	3.333		86	40-140	0.2	30	
Pyridine	1.58	1.67	mg/kg wet	3.333		48	40-140	12	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.17*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.93*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.72*		mg/kg wet	*5.000*		*74*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.27*		mg/kg wet	*3.333*		*68*	*30-130*			
Surrogate: 2-Fluorophenol	*3.43*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.32*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: Phenol-d6	*3.56*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.93*		mg/kg wet	*3.333*		*88*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19L0038

Notes and Definitions

U	Analyte included in the analysis, but not detected
R-	Standard Reference Material is biased low (R-).
Q	Calibration required quadratic regression (Q).
J	Reported between MDL and MRL
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
BT	Benzidine tailing factor >2.
B+	Blank Spike recovery is above upper control limit (B+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0038

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: Client

ESS Project ID: 19L0038
Date Received: 12/2/2019
Project Due Date: 12/9/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.6 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA
13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	417596	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	417598	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	417595	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	417597	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	417594	Yes	NA	Yes	VOA Vial - Methanol	MeOH	

2nd Review
Were all containers scanned into storage/lab? Initials
Are barcode labels on correct containers? Yes / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 12/2/19 1649
Reviewed By: Date & Time: 12/2/19 1703
Delivered By: 12/2/19 1703

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 19L0038

Turn Time	5	Days
Regulatory State	RI	

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits

Electonic Deliverables: ☐ Data Checker ☐ Other (Please Specify →) ☒ Excel

Company Name	GZA
Project #	34648
Project Name	Truk Away
Contact Person	Rick Carlone
Address	188 Valley St Ste 300
City	Providence
State	RI
Zip Code	02909
PO #	
Telephone Number	401-427-2776
FAX Number	
Email Address	richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	SVOC	Metals 15 solid waste	% Solid	VOC High
1	12/2/19	1500	Grab	S	TP-7 0'-2'	X	X	X	X
2	↓	1530	↓	↓	TP-9 0'-2	X	X	X	X
3					Trip Blank				X

	SVOC	Metals 15 solid waste	% Solid	VOC High
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial	AG	AG	AG	V
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	10	10	10	7
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*	1	1	1	6
Number of Containers per Sample:	1			1

Laboratory Use Only

Cooler Present: [signature] ○ Drop Off
Seals Intact: [signature] ○ Pickup
Cooler Temperature: 1.6 °C

Sampled by: Marissa Kelly

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/2/19 1629	[signature] 12/2/19 1629		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19L0120

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:54 pm, Dec 11, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

SAMPLE RECEIPT

The following samples were received on December 04, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19L0120-01	TP-4 0-2ft	Sediment	6010C, 8260B, 8270D
19L0120-02	TB	Solid	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19L0120

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

CL90524-BSD1 **Blank Spike recovery is above upper control limit (B+).**
1,4-Dioxane - Screen (0% @ 44-241%)

8270D Semi-Volatile Organic Compounds

C9L0053-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (87% @ 80-120%), 4,6-Dinitro-2-Methylphenol (97% @ 80-120%), Benzoic Acid (112% @ 80-120%), Pentachlorophenol (89% @ 80-120%)

C9L0053-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzo(b)fluoranthene (22% @ 20%)

C9L0053-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (25% @ 20%)

C9L0053-TUN1 **Benzidine tailing factor >2.**

C9L0074-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (77% @ 80-120%), 4,6-Dinitro-2-Methylphenol (86% @ 80-120%), Benzoic Acid (97% @ 80-120%)

C9L0074-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (23% @ 20%), 4-Nitrophenol (34% @ 20%), Hexachlorocyclopentadiene (26% @ 20%)

C9L0074-TUN1 **Benzidine tailing factor >2.**

CL90405-BS1 **Blank Spike recovery is below lower control limit (B-).**
Hexachlorocyclopentadiene (37% @ 40-140%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.87)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Arsenic	**2.63** (2.43)		6010C		1	KJK	12/06/19 16:12	2.36	100	CL90541
Barium	**15.7** (2.43)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Beryllium	**0.18** (0.11)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Cadmium	ND (0.49)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Chromium	**7.82** (0.97)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Cobalt	**1.42** (0.97)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Copper	**5.82** (2.43)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Lead	**18.4** (4.87)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Nickel	**3.06** (2.43)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Selenium	ND (4.87)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Silver	ND (0.49)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Thallium	ND (4.87)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Vanadium	**11.1** (0.97)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541
Zinc	**14.2** (2.43)		6010C		1	KJK	12/06/19 0:23	2.36	100	CL90541

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87
Initial Volume: 13.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,1,1-Trichloroethane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,1,2,2-Tetrachloroethane	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,1,2-Trichloroethane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,1-Dichloroethane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,1-Dichloroethene	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,1-Dichloropropene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2,3-Trichlorobenzene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2,3-Trichloropropane	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2,4-Trichlorobenzene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2,4-Trimethylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2-Dibromo-3-Chloropropane	ND (1.40)	0.280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2-Dibromoethane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2-Dichlorobenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2-Dichloroethane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,2-Dichloropropane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,3,5-Trimethylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,3-Dichlorobenzene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,3-Dichloropropane	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,4-Dichlorobenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
1,4-Dioxane - Screen	ND (55.9)	53.1	8260B		1	12/05/19 13:57	C9L0085	CL90524
1-Chlorohexane	ND (0.280)	0.112	8260B		1	12/05/19 13:57	C9L0085	CL90524
2,2-Dichloropropane	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
2-Butanone	ND (1.40)	0.950	8260B		1	12/05/19 13:57	C9L0085	CL90524
2-Chlorotoluene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
2-Hexanone	ND (1.40)	0.419	8260B		1	12/05/19 13:57	C9L0085	CL90524
4-Chlorotoluene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
4-Isopropyltoluene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
4-Methyl-2-Pentanone	ND (1.40)	0.447	8260B		1	12/05/19 13:57	C9L0085	CL90524
Acetone	ND (1.40)	0.755	8260B		1	12/05/19 13:57	C9L0085	CL90524
Benzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Bromobenzene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87
Initial Volume: 13.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
Bromodichloromethane	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Bromoform	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Bromomethane	ND (0.280)	0.112	8260B		1	12/05/19 13:57	C9L0085	CL90524
Carbon Disulfide	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Carbon Tetrachloride	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Chlorobenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Chloroethane	ND (0.280)	0.112	8260B		1	12/05/19 13:57	C9L0085	CL90524
Chloroform	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Chloromethane	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
cis-1,2-Dichloroethene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
cis-1,3-Dichloropropene	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
Dibromochloromethane	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Dibromomethane	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
Dichlorodifluoromethane	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
Diethyl Ether	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
Di-isopropyl ether	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Ethyl tertiary-butyl ether	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Ethylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Hexachlorobutadiene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Isopropylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Methyl tert-Butyl Ether	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
Methylene Chloride	ND (0.559)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Naphthalene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
n-Butylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
n-Propylbenzene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
sec-Butylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Styrene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
tert-Butylbenzene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Tertiary-amyl methyl ether	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Tetrachloroethene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Tetrahydrofuran	ND (1.40)	0.447	8260B		1	12/05/19 13:57	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87
Initial Volume: 13.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
trans-1,2-Dichloroethene	ND (0.280)	0.0839	8260B		1	12/05/19 13:57	C9L0085	CL90524
trans-1,3-Dichloropropene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Trichloroethene	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Trichlorofluoromethane	ND (0.280)	0.112	8260B		1	12/05/19 13:57	C9L0085	CL90524
Vinyl Acetate	ND (0.280)	0.140	8260B		1	12/05/19 13:57	C9L0085	CL90524
Vinyl Chloride	ND (0.280)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Xylene O	ND (0.280)	0.0280	8260B		1	12/05/19 13:57	C9L0085	CL90524
Xylene P,M	ND (0.559)	0.0559	8260B		1	12/05/19 13:57	C9L0085	CL90524
Xylenes (Total)	ND (0.559)		8260B		1	12/05/19 13:57		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*123 %*		*70-130*
Surrogate: Dibromofluoromethane	*127 %*		*70-130*
Surrogate: Toluene-d8	*123 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 19:59

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
1,2,4-Trichlorobenzene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
1,2-Dichlorobenzene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
1,3-Dichlorobenzene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
1,4-Dichlorobenzene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,3,4,6-Tetrachlorophenol	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,4,5-Trichlorophenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,4,6-Trichlorophenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,4-Dichlorophenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,4-Dimethylphenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,4-Dinitrophenol	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,4-Dinitrotoluene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2,6-Dinitrotoluene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2-Chloronaphthalene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2-Chlorophenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2-Methylnaphthalene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2-Methylphenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2-Nitroaniline	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
2-Nitrophenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
3,3´-Dichlorobenzidine	ND (0.756)		8270D		1	12/05/19 18:22	C9L0074	CL90405
3+4-Methylphenol	ND (0.756)		8270D		1	12/05/19 18:22	C9L0074	CL90405
3-Nitroaniline	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4,6-Dinitro-2-Methylphenol	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4-Bromophenyl-phenylether	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4-Chloro-3-Methylphenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4-Chloroaniline	ND (0.756)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4-Chloro-phenyl-phenyl ether	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4-Nitroaniline	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
4-Nitrophenol	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Acenaphthene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Acenaphthylene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Acetophenone	ND (0.756)		8270D		1	12/05/19 18:22	C9L0074	CL90405

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 19:59

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aniline	ND (0.756)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Anthracene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Azobenzene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzo(a)anthracene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzo(a)pyrene	ND (0.189)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzo(b)fluoranthene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzo(g,h,i)perylene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzo(k)fluoranthene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzoic Acid	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Benzyl Alcohol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
bis(2-Chloroethoxy)methane	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
bis(2-Chloroethyl)ether	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
bis(2-chloroisopropyl)Ether	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
bis(2-Ethylhexyl)phthalate	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Butylbenzylphthalate	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Carbazole	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Chrysene	ND (0.189)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Dibenzo(a,h)Anthracene	ND (0.189)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Dibenzofuran	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Diethylphthalate	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Dimethylphthalate	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Di-n-butylphthalate	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Di-n-octylphthalate	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Fluoranthene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Fluorene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Hexachlorobenzene	ND (0.189)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Hexachlorobutadiene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Hexachlorocyclopentadiene	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Hexachloroethane	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Indeno(1,2,3-cd)Pyrene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Isophorone	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Naphthalene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TP-4 0-2ft
Date Sampled: 12/04/19 13:00
Percent Solids: 87
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/19 19:59

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Nitrobenzene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
N-Nitrosodimethylamine	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
N-Nitroso-Di-n-Propylamine	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
N-nitrosodiphenylamine	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Pentachlorophenol	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Phenanthrene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Phenol	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Pyrene	ND (0.378)		8270D		1	12/05/19 18:22	C9L0074	CL90405
Pyridine	ND (1.89)		8270D		1	12/05/19 18:22	C9L0074	CL90405

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*70 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*67 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*67 %*		*30-130*
Surrogate: 2-Fluorophenol	*74 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*
Surrogate: Phenol-d6	*71 %*		*30-130*
Surrogate: p-Terphenyl-d14	*67 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TB
Date Sampled: 12/04/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-02
Sample Matrix: Solid
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,1,1-Trichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,1,2-Trichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,1-Dichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,1-Dichloroethene	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,1-Dichloropropene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2,3-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2,3-Trichloropropane	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2,4-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2-Dibromo-3-Chloropropane	ND (1.00)	0.200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2-Dibromoethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2-Dichloroethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,2-Dichloropropane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,3-Dichlorobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
1,4-Dioxane - Screen	ND (40.0)	38.0	8260B		1	12/05/19 12:39	C9L0085	CL90524
1-Chlorohexane	ND (0.200)	0.0800	8260B		1	12/05/19 12:39	C9L0085	CL90524
2,2-Dichloropropane	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
2-Butanone	ND (1.00)	0.680	8260B		1	12/05/19 12:39	C9L0085	CL90524
2-Chlorotoluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
2-Hexanone	ND (1.00)	0.300	8260B		1	12/05/19 12:39	C9L0085	CL90524
4-Chlorotoluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
4-Methyl-2-Pentanone	ND (1.00)	0.320	8260B		1	12/05/19 12:39	C9L0085	CL90524
Acetone	ND (1.00)	0.540	8260B		1	12/05/19 12:39	C9L0085	CL90524
Benzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Bromobenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TB
Date Sampled: 12/04/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-02
Sample Matrix: Solid
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Bromoform	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Bromomethane	ND (0.200)	0.0800	8260B		1	12/05/19 12:39	C9L0085	CL90524
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Chlorobenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Chloroethane	ND (0.200)	0.0800	8260B		1	12/05/19 12:39	C9L0085	CL90524
Chloroform	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Chloromethane	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
cis-1,2-Dichloroethene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
cis-1,3-Dichloropropene	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
Dibromochloromethane	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Dibromomethane	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
Dichlorodifluoromethane	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
Diethyl Ether	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
Di-isopropyl ether	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Ethylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Hexachlorobutadiene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Methyl tert-Butyl Ether	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
Methylene Chloride	ND (0.400)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Naphthalene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
n-Propylbenzene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Styrene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Tertiary-amyl methyl ether	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Tetrachloroethene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Tetrahydrofuran	ND (1.00)	0.320	8260B		1	12/05/19 12:39	C9L0085	CL90524

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: TB
Date Sampled: 12/04/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19L0120
ESS Laboratory Sample ID: 19L0120-02
Sample Matrix: Solid
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
trans-1,2-Dichloroethene	ND (0.200)	0.0600	8260B		1	12/05/19 12:39	C9L0085	CL90524
trans-1,3-Dichloropropene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Trichloroethene	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Trichlorofluoromethane	ND (0.200)	0.0800	8260B		1	12/05/19 12:39	C9L0085	CL90524
Vinyl Acetate	ND (0.200)	0.100	8260B		1	12/05/19 12:39	C9L0085	CL90524
Vinyl Chloride	ND (0.200)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Xylene O	ND (0.200)	0.0200	8260B		1	12/05/19 12:39	C9L0085	CL90524
Xylene P,M	ND (0.400)	0.0400	8260B		1	12/05/19 12:39	C9L0085	CL90524
Xylenes (Total)	ND (0.400)		8260B		1	12/05/19 12:39		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*122 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*120 %*		*70-130*
Surrogate: Dibromofluoromethane	*123 %*		*70-130*
Surrogate: Toluene-d8	*120 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL90541 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Cobalt	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	43.5	16.4	mg/kg wet	51.30		85	80-120			
Arsenic	184	8.20	mg/kg wet	202.0		91	80-120			
Barium	310	8.20	mg/kg wet	343.0		90	80-120			
Beryllium	48.4	0.36	mg/kg wet	52.10		93	80-120			
Cadmium	130	1.64	mg/kg wet	149.0		87	80-120			
Chromium	167	3.28	mg/kg wet	182.0		92	80-120			
Cobalt	155	3.28	mg/kg wet	171.0		91	80-120			
Copper	227	8.20	mg/kg wet	225.0		101	80-120			
Lead	322	16.4	mg/kg wet	333.0		97	80-120			
Nickel	154	8.20	mg/kg wet	167.0		92	80-120			
Selenium	161	16.4	mg/kg wet	169.0		95	80-120			
Silver	45.6	1.64	mg/kg wet	48.90		93	80-120			
Thallium	66.0	16.4	mg/kg wet	82.30		80	80-120			
Vanadium	218	3.28	mg/kg wet	227.0		96	80-120			
Zinc	412	8.20	mg/kg wet	459.0		90	80-120			
LCS Dup										
Antimony	37.4	16.1	mg/kg wet	51.30		73	80-120	15	20	
Arsenic	185	8.06	mg/kg wet	202.0		92	80-120	0.6	20	
Barium	316	8.06	mg/kg wet	343.0		92	80-120	2	20	
Beryllium	48.5	0.35	mg/kg wet	52.10		93	80-120	0.2	20	
Cadmium	130	1.61	mg/kg wet	149.0		87	80-120	0.2	20	
Chromium	168	3.23	mg/kg wet	182.0		92	80-120	0.4	20	
Cobalt	155	3.23	mg/kg wet	171.0		91	80-120	0.2	20	
Copper	229	8.06	mg/kg wet	225.0		102	80-120	0.8	20	
Lead	321	16.1	mg/kg wet	333.0		97	80-120	0.2	20	
Nickel	155	8.06	mg/kg wet	167.0		93	80-120	0.5	20	
Selenium	160	16.1	mg/kg wet	169.0		95	80-120	0.6	20	
Silver	46.2	1.61	mg/kg wet	48.90		94	80-120	1	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CL90541 - 3050B										
Thallium	68.2	16.1	mg/kg wet	82.30		83	80-120	3	20	
Vanadium	219	3.23	mg/kg wet	227.0		96	80-120	0.1	20	
Zinc	413	8.06	mg/kg wet	459.0		90	80-120	0.2	20	
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*5.27*		mg/kg wet	*5.000*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.17*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*5.14*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Toluene-d8	*4.96*		mg/kg wet	*5.000*		*99*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.72	0.200	mg/kg wet	2.000		86	70-130			
1,1,1-Trichloroethane	1.89	0.200	mg/kg wet	2.000		95	70-130			
1,1,2,2-Tetrachloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,1,2-Trichloroethane	1.81	0.200	mg/kg wet	2.000		91	70-130			
1,1-Dichloroethane	2.11	0.200	mg/kg wet	2.000		105	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
1,1-Dichloroethene	2.11	0.200	mg/kg wet	2.000		105	70-130			
1,1-Dichloropropene	2.19	0.200	mg/kg wet	2.000		110	70-130			
1,2,3-Trichlorobenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
1,2,3-Trichloropropane	1.83	0.200	mg/kg wet	2.000		91	70-130			
1,2,4-Trichlorobenzene	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,2,4-Trimethylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130			
1,2-Dibromo-3-Chloropropane	1.71	1.00	mg/kg wet	2.000		85	70-130			
1,2-Dibromoethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
1,2-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
1,2-Dichloroethane	2.05	0.200	mg/kg wet	2.000		102	70-130			
1,2-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,3,5-Trimethylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130			
1,3-Dichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
1,3-Dichloropropane	2.17	0.200	mg/kg wet	2.000		108	70-130			
1,4-Dichlorobenzene	1.97	0.200	mg/kg wet	2.000		98	70-130			
1,4-Dioxane - Screen	38.3	40.0	mg/kg wet	40.00		96	44-241			J
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130			
2,2-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130			
2-Butanone	9.81	1.00	mg/kg wet	10.00		98	70-130			
2-Chlorotoluene	1.99	0.200	mg/kg wet	2.000		99	70-130			
2-Hexanone	9.36	1.00	mg/kg wet	10.00		94	70-130			
4-Chlorotoluene	2.08	0.200	mg/kg wet	2.000		104	70-130			
4-Isopropyltoluene	1.97	0.200	mg/kg wet	2.000		98	70-130			
4-Methyl-2-Pentanone	8.76	1.00	mg/kg wet	10.00		88	70-130			
Acetone	9.69	1.00	mg/kg wet	10.00		97	70-130			
Benzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
Bromobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130			
Bromochloromethane	1.93	0.200	mg/kg wet	2.000		96	70-130			
Bromodichloromethane	1.80	0.200	mg/kg wet	2.000		90	70-130			
Bromoform	1.57	0.200	mg/kg wet	2.000		78	70-130			
Bromomethane	2.34	0.200	mg/kg wet	2.000		117	70-130			
Carbon Disulfide	2.10	0.200	mg/kg wet	2.000		105	70-130			
Carbon Tetrachloride	1.98	0.200	mg/kg wet	2.000		99	70-130			
Chlorobenzene	1.95	0.200	mg/kg wet	2.000		98	70-130			
Chloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
Chloroform	2.16	0.200	mg/kg wet	2.000		108	70-130			
Chloromethane	1.75	0.200	mg/kg wet	2.000		88	70-130			
cis-1,2-Dichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130			
cis-1,3-Dichloropropene	2.04	0.200	mg/kg wet	2.000		102	70-130			
Dibromochloromethane	1.79	0.200	mg/kg wet	2.000		89	70-130			
Dibromomethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
Dichlorodifluoromethane	1.71	0.200	mg/kg wet	2.000		86	70-130			
Diethyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Di-isopropyl ether	2.10	0.200	mg/kg wet	2.000		105	70-130			
Ethyl tertiary-butyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Ethylbenzene	1.99	0.200	mg/kg wet	2.000		99	70-130			
Hexachlorobutadiene	2.15	0.200	mg/kg wet	2.000		108	70-130			
Isopropylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Methyl tert-Butyl Ether	2.03	0.200	mg/kg wet	2.000		102	70-130			
Methylene Chloride	2.06	0.400	mg/kg wet	2.000		103	70-130			
Naphthalene	1.79	0.200	mg/kg wet	2.000		90	70-130			
n-Butylbenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
n-Propylbenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
sec-Butylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
Styrene	1.84	0.200	mg/kg wet	2.000		92	70-130			
tert-Butylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Tertiary-amyl methyl ether	2.12	0.200	mg/kg wet	2.000		106	70-130			
Tetrachloroethene	1.78	0.200	mg/kg wet	2.000		89	70-130			
Tetrahydrofuran	1.64	1.00	mg/kg wet	2.000		82	70-130			
Toluene	2.08	0.200	mg/kg wet	2.000		104	70-130			
trans-1,2-Dichloroethene	2.09	0.200	mg/kg wet	2.000		104	70-130			
trans-1,3-Dichloropropene	2.03	0.200	mg/kg wet	2.000		101	70-130			
Trichloroethene	2.05	0.200	mg/kg wet	2.000		103	70-130			
Trichlorofluoromethane	2.10	0.200	mg/kg wet	2.000		105	70-130			
Vinyl Acetate	1.99	0.200	mg/kg wet	2.000		99	70-130			
Vinyl Chloride	1.68	0.200	mg/kg wet	2.000		84	70-130			
Xylene O	1.97	0.200	mg/kg wet	2.000		99	70-130			
Xylene P,M	3.97	0.400	mg/kg wet	4.000		99	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.00*		mg/kg wet	*5.000*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.92*		mg/kg wet	*5.000*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*5.00*		mg/kg wet	*5.000*		*100*	*70-130*			
Surrogate: Toluene-d8	*4.99*		mg/kg wet	*5.000*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130	1	25	
1,1,1-Trichloroethane	1.96	0.200	mg/kg wet	2.000		98	70-130	3	25	
1,1,2,2-Tetrachloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	2	25	
1,1,2-Trichloroethane	1.93	0.200	mg/kg wet	2.000		97	70-130	6	25	
1,1-Dichloroethane	2.15	0.200	mg/kg wet	2.000		107	70-130	2	25	
1,1-Dichloroethene	2.14	0.200	mg/kg wet	2.000		107	70-130	2	25	
1,1-Dichloropropene	2.19	0.200	mg/kg wet	2.000		109	70-130	0.2	25	
1,2,3-Trichlorobenzene	1.91	0.200	mg/kg wet	2.000		96	70-130	6	25	
1,2,3-Trichloropropane	1.67	0.200	mg/kg wet	2.000		83	70-130	9	25	
1,2,4-Trichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	1	25	
1,2,4-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	0.7	25	
1,2-Dibromo-3-Chloropropane	1.82	1.00	mg/kg wet	2.000		91	70-130	6	25	
1,2-Dibromoethane	1.90	0.200	mg/kg wet	2.000		95	70-130	0.6	25	
1,2-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	0.4	25	
1,2-Dichloroethane	2.05	0.200	mg/kg wet	2.000		102	70-130	0	25	
1,2-Dichloropropane	2.08	0.200	mg/kg wet	2.000		104	70-130	1	25	
1,3,5-Trimethylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130	2	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
1,3-Dichlorobenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	1	25	
1,3-Dichloropropane	2.07	0.200	mg/kg wet	2.000		104	70-130	5	25	
1,4-Dichlorobenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	2	25	
1,4-Dioxane - Screen	ND	40.0	mg/kg wet	40.00		0	44-241	200	200	B+
1-Chlorohexane	1.80	0.200	mg/kg wet	2.000		90	70-130	2	25	
2,2-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130	0.1	25	
2-Butanone	10.1	1.00	mg/kg wet	10.00		101	70-130	3	25	
2-Chlorotoluene	1.95	0.200	mg/kg wet	2.000		97	70-130	2	25	
2-Hexanone	8.31	1.00	mg/kg wet	10.00		83	70-130	12	25	
4-Chlorotoluene	1.99	0.200	mg/kg wet	2.000		100	70-130	4	25	
4-Isopropyltoluene	1.89	0.200	mg/kg wet	2.000		95	70-130	4	25	
4-Methyl-2-Pentanone	8.65	1.00	mg/kg wet	10.00		86	70-130	1	25	
Acetone	8.67	1.00	mg/kg wet	10.00		87	70-130	11	25	
Benzene	2.03	0.200	mg/kg wet	2.000		102	70-130	3	25	
Bromobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Bromochloromethane	1.99	0.200	mg/kg wet	2.000		100	70-130	3	25	
Bromodichloromethane	1.85	0.200	mg/kg wet	2.000		93	70-130	3	25	
Bromoform	1.54	0.200	mg/kg wet	2.000		77	70-130	2	25	
Bromomethane	2.44	0.200	mg/kg wet	2.000		122	70-130	5	25	
Carbon Disulfide	2.16	0.200	mg/kg wet	2.000		108	70-130	3	25	
Carbon Tetrachloride	1.96	0.200	mg/kg wet	2.000		98	70-130	1	25	
Chlorobenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	4	25	
Chloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130	7	25	
Chloroform	2.13	0.200	mg/kg wet	2.000		107	70-130	1	25	
Chloromethane	1.77	0.200	mg/kg wet	2.000		88	70-130	0.9	25	
cis-1,2-Dichloroethene	2.10	0.200	mg/kg wet	2.000		105	70-130	4	25	
cis-1,3-Dichloropropene	1.99	0.200	mg/kg wet	2.000		100	70-130	2	25	
Dibromochloromethane	1.71	0.200	mg/kg wet	2.000		86	70-130	4	25	
Dibromomethane	2.06	0.200	mg/kg wet	2.000		103	70-130	1	25	
Dichlorodifluoromethane	1.70	0.200	mg/kg wet	2.000		85	70-130	0.6	25	
Diethyl Ether	1.99	0.200	mg/kg wet	2.000		99	70-130	2	25	
Di-isopropyl ether	2.11	0.200	mg/kg wet	2.000		106	70-130	0.5	25	
Ethyl tertiary-butyl ether	2.00	0.200	mg/kg wet	2.000		100	70-130	3	25	
Ethylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	1	25	
Hexachlorobutadiene	1.94	0.200	mg/kg wet	2.000		97	70-130	10	25	
Isopropylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130	3	25	
Methyl tert-Butyl Ether	2.08	0.200	mg/kg wet	2.000		104	70-130	2	25	
Methylene Chloride	2.01	0.400	mg/kg wet	2.000		101	70-130	2	25	
Naphthalene	1.80	0.200	mg/kg wet	2.000		90	70-130	0.8	25	
n-Butylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	
n-Propylbenzene	1.95	0.200	mg/kg wet	2.000		98	70-130	4	25	
sec-Butylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	3	25	
Styrene	1.87	0.200	mg/kg wet	2.000		93	70-130	1	25	
tert-Butylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	1	25	
Tertiary-amyl methyl ether	2.03	0.200	mg/kg wet	2.000		102	70-130	4	25	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CL90524 - 5035										
Tetrachloroethene	1.76	0.200	mg/kg wet	2.000		88	70-130	1	25	
Tetrahydrofuran	1.93	1.00	mg/kg wet	2.000		97	70-130	17	25	
Toluene	2.11	0.200	mg/kg wet	2.000		106	70-130	2	25	
trans-1,2-Dichloroethene	2.10	0.200	mg/kg wet	2.000		105	70-130	0.9	25	
trans-1,3-Dichloropropene	2.01	0.200	mg/kg wet	2.000		100	70-130	0.8	25	
Trichloroethene	2.03	0.200	mg/kg wet	2.000		102	70-130	1	25	
Trichlorofluoromethane	2.19	0.200	mg/kg wet	2.000		110	70-130	4	25	
Vinyl Acetate	2.16	0.200	mg/kg wet	2.000		108	70-130	8	25	
Vinyl Chloride	1.64	0.200	mg/kg wet	2.000		82	70-130	3	25	
Xylene O	1.93	0.200	mg/kg wet	2.000		97	70-130	2	25	
Xylene P,M	4.00	0.400	mg/kg wet	4.000		100	70-130	0.8	25	
Surrogate: 1,2-Dichloroethane-d4	*5.06*		mg/kg wet	*5.000*		*101*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.91*		mg/kg wet	*5.000*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*5.17*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Toluene-d8	*4.93*		mg/kg wet	*5.000*		*99*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylnaphthalene	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							

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ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acenaphthene	ND	0.333	mg/kg wet							
Acenaphthylene	ND	0.333	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Anthracene	ND	0.333	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzo(a)anthracene	ND	0.333	mg/kg wet							
Benzo(a)pyrene	ND	0.167	mg/kg wet							
Benzo(b)fluoranthene	ND	0.333	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.333	mg/kg wet							
Benzo(k)fluoranthene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Chrysene	ND	0.167	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.167	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Naphthalene	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenanthrene	ND	0.333	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Pyrene	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.15*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.79*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.64*		mg/kg wet	*5.000*		*73*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.01*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: 2-Fluorophenol	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.05*		mg/kg wet	*3.333*		*62*	*30-130*			
Surrogate: Phenol-d6	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.30*		mg/kg wet	*3.333*		*99*	*30-130*			
LCS										
1,1-Biphenyl	2.16	0.333	mg/kg wet	3.333		65	40-140			
1,2,4-Trichlorobenzene	1.92	0.333	mg/kg wet	3.333		57	40-140			
1,2-Dichlorobenzene	1.91	0.333	mg/kg wet	3.333		57	40-140			
1,3-Dichlorobenzene	1.84	0.333	mg/kg wet	3.333		55	40-140			
1,4-Dichlorobenzene	1.83	0.333	mg/kg wet	3.333		55	40-140			
2,3,4,6-Tetrachlorophenol	2.54	1.67	mg/kg wet	3.333		76	30-130			
2,4,5-Trichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4,6-Trichlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dichlorophenol	2.29	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dimethylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dinitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130			
2,4-Dinitrotoluene	2.97	0.333	mg/kg wet	3.333		89	40-140			
2,6-Dinitrotoluene	2.67	0.333	mg/kg wet	3.333		80	40-140			
2-Chloronaphthalene	2.29	0.333	mg/kg wet	3.333		69	40-140			
2-Chlorophenol	2.12	0.333	mg/kg wet	3.333		64	30-130			
2-Methylnaphthalene	2.14	0.333	mg/kg wet	3.333		64	40-140			
2-Methylphenol	2.35	0.333	mg/kg wet	3.333		70	30-130			
2-Nitroaniline	2.80	0.333	mg/kg wet	3.333		84	40-140			
2-Nitrophenol	1.91	0.333	mg/kg wet	3.333		57	30-130			
3,3´-Dichlorobenzidine	2.48	0.667	mg/kg wet	3.333		74	40-140			
3+4-Methylphenol	5.16	0.667	mg/kg wet	6.667		77	30-130			
3-Nitroaniline	2.68	0.333	mg/kg wet	3.333		80	40-140			
4,6-Dinitro-2-Methylphenol	2.85	1.67	mg/kg wet	3.333		85	30-130			
4-Bromophenyl-phenylether	2.49	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		84	30-130			
4-Chloroaniline	1.61	0.667	mg/kg wet	3.333		48	40-140			
4-Chloro-phenyl-phenyl ether	2.57	0.333	mg/kg wet	3.333		77	40-140			
4-Nitroaniline	2.65	0.333	mg/kg wet	3.333		79	40-140			
4-Nitrophenol	2.46	1.67	mg/kg wet	3.333		74	30-130			
Acenaphthene	2.35	0.333	mg/kg wet	3.333		70	40-140			
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		71	40-140			
Acetophenone	2.19	0.667	mg/kg wet	3.333		66	40-140			
Aniline	1.37	0.667	mg/kg wet	3.333		41	40-140			
Anthracene	2.81	0.333	mg/kg wet	3.333		84	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Azobenzene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Benzo(a)anthracene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Benzo(a)pyrene	2.83	0.167	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Benzo(g,h,i)perylene	2.65	0.333	mg/kg wet	3.333		80	40-140			
Benzo(k)fluoranthene	3.08	0.333	mg/kg wet	3.333		92	40-140			
Benzoic Acid	2.39	1.67	mg/kg wet	3.333		72	40-140			
Benzyl Alcohol	1.56	0.333	mg/kg wet	3.333		47	40-140			
bis(2-Chloroethoxy)methane	2.06	0.333	mg/kg wet	3.333		62	40-140			
bis(2-Chloroethyl)ether	2.00	0.333	mg/kg wet	3.333		60	40-140			
bis(2-chloroisopropyl)Ether	2.04	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Ethylhexyl)phthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Butylbenzylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140			
Carbazole	3.00	0.333	mg/kg wet	3.333		90	40-140			
Chrysene	2.91	0.167	mg/kg wet	3.333		87	40-140			
Dibenzo(a,h)Anthracene	2.79	0.167	mg/kg wet	3.333		84	40-140			
Dibenzofuran	2.48	0.333	mg/kg wet	3.333		74	40-140			
Diethylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140			
Dimethylphthalate	2.72	0.333	mg/kg wet	3.333		82	40-140			
Di-n-butylphthalate	3.09	0.333	mg/kg wet	3.333		93	40-140			
Di-n-octylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Fluoranthene	3.02	0.333	mg/kg wet	3.333		91	40-140			
Fluorene	2.72	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorobenzene	2.54	0.167	mg/kg wet	3.333		76	40-140			
Hexachlorobutadiene	1.82	0.333	mg/kg wet	3.333		55	40-140			
Hexachlorocyclopentadiene	1.23	1.67	mg/kg wet	3.333		37	40-140			B-
Hexachloroethane	1.87	0.333	mg/kg wet	3.333		56	40-140			
Indeno(1,2,3-cd)Pyrene	2.76	0.333	mg/kg wet	3.333		83	40-140			
Isophorone	1.94	0.333	mg/kg wet	3.333		58	40-140			
Naphthalene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Nitrobenzene	2.06	0.333	mg/kg wet	3.333		62	40-140			
N-Nitrosodimethylamine	1.74	0.333	mg/kg wet	3.333		52	40-140			
N-Nitroso-Di-n-Propylamine	2.23	0.333	mg/kg wet	3.333		67	40-140			
N-nitrosodiphenylamine	2.72	0.333	mg/kg wet	3.333		82	40-140			
Pentachlorophenol	2.61	1.67	mg/kg wet	3.333		78	30-130			
Phenanthrene	2.78	0.333	mg/kg wet	3.333		83	40-140			
Phenol	2.21	0.333	mg/kg wet	3.333		66	30-130			
Pyrene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	1.41	1.67	mg/kg wet	3.333		42	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*1.95*		mg/kg wet	*3.333*		*59*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.18*		mg/kg wet	*5.000*		*84*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.43*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.34*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: 2-Fluorophenol	*3.14*		mg/kg wet	*5.000*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.18*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.47*		mg/kg wet	*5.000*		*69*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
Surrogate: p-Terphenyl-d14	*3.03*		mg/kg wet	*3.333*		*91*	*30-130*			
LCS Dup										
1,1-Biphenyl	2.20	0.333	mg/kg wet	3.333		66	40-140	2	30	
1,2,4-Trichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	8	30	
1,2-Dichlorobenzene	2.17	0.333	mg/kg wet	3.333		65	40-140	13	30	
1,3-Dichlorobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	15	30	
1,4-Dichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140	13	30	
2,3,4,6-Tetrachlorophenol	2.56	1.67	mg/kg wet	3.333		77	30-130	1	30	
2,4,5-Trichlorophenol	2.58	0.333	mg/kg wet	3.333		77	30-130	2	30	
2,4,6-Trichlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130	1	30	
2,4-Dichlorophenol	2.37	0.333	mg/kg wet	3.333		71	30-130	3	30	
2,4-Dimethylphenol	2.29	0.333	mg/kg wet	3.333		69	30-130	3	30	
2,4-Dinitrophenol	2.80	1.67	mg/kg wet	3.333		84	30-130	3	30	
2,4-Dinitrotoluene	2.95	0.333	mg/kg wet	3.333		89	40-140	0.6	30	
2,6-Dinitrotoluene	2.69	0.333	mg/kg wet	3.333		81	40-140	0.8	30	
2-Chloronaphthalene	2.33	0.333	mg/kg wet	3.333		70	40-140	2	30	
2-Chlorophenol	2.35	0.333	mg/kg wet	3.333		70	30-130	10	30	
2-Methylnaphthalene	2.26	0.333	mg/kg wet	3.333		68	40-140	5	30	
2-Methylphenol	2.53	0.333	mg/kg wet	3.333		76	30-130	7	30	
2-Nitroaniline	2.78	0.333	mg/kg wet	3.333		83	40-140	0.8	30	
2-Nitrophenol	2.06	0.333	mg/kg wet	3.333		62	30-130	7	30	
3,3´-Dichlorobenzidine	2.33	0.667	mg/kg wet	3.333		70	40-140	6	30	
3+4-Methylphenol	5.60	0.667	mg/kg wet	6.667		84	30-130	8	30	
3-Nitroaniline	2.58	0.333	mg/kg wet	3.333		77	40-140	4	30	
4,6-Dinitro-2-Methylphenol	2.84	1.67	mg/kg wet	3.333		85	30-130	0.3	30	
4-Bromophenyl-phenylether	2.50	0.333	mg/kg wet	3.333		75	40-140	0.1	30	
4-Chloro-3-Methylphenol	2.78	0.333	mg/kg wet	3.333		83	30-130	0.1	30	
4-Chloroaniline	1.50	0.667	mg/kg wet	3.333		45	40-140	7	30	
4-Chloro-phenyl-phenyl ether	2.58	0.333	mg/kg wet	3.333		77	40-140	0.2	30	
4-Nitroaniline	2.55	0.333	mg/kg wet	3.333		76	40-140	4	30	
4-Nitrophenol	2.46	1.67	mg/kg wet	3.333		74	30-130	0.1	30	
Acenaphthene	2.35	0.333	mg/kg wet	3.333		70	40-140	0.07	30	
Acenaphthylene	2.37	0.333	mg/kg wet	3.333		71	40-140	0.4	30	
Acetophenone	2.44	0.667	mg/kg wet	3.333		73	40-140	11	30	
Aniline	1.53	0.667	mg/kg wet	3.333		46	40-140	11	30	
Anthracene	2.82	0.333	mg/kg wet	3.333		85	40-140	0.4	30	
Azobenzene	2.70	0.333	mg/kg wet	3.333		81	40-140	2	30	
Benzo(a)anthracene	2.90	0.333	mg/kg wet	3.333		87	40-140	2	30	
Benzo(a)pyrene	2.74	0.167	mg/kg wet	3.333		82	40-140	3	30	
Benzo(b)fluoranthene	2.98	0.333	mg/kg wet	3.333		89	40-140	7	30	
Benzo(g,h,i)perylene	2.63	0.333	mg/kg wet	3.333		79	40-140	1	30	
Benzo(k)fluoranthene	2.59	0.333	mg/kg wet	3.333		78	40-140	17	30	
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140	2	30	
Benzyl Alcohol	1.69	0.333	mg/kg wet	3.333		51	40-140	8	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL90405 - 3546										
bis(2-Chloroethoxy)methane	2.16	0.333	mg/kg wet	3.333		65	40-140	5	30	
bis(2-Chloroethyl)ether	2.32	0.333	mg/kg wet	3.333		70	40-140	15	30	
bis(2-chloroisopropyl)Ether	2.27	0.333	mg/kg wet	3.333		68	40-140	11	30	
bis(2-Ethylhexyl)phthalate	3.05	0.333	mg/kg wet	3.333		92	40-140	0.6	30	
Butylbenzylphthalate	3.06	0.333	mg/kg wet	3.333		92	40-140	0.2	30	
Carbazole	2.93	0.333	mg/kg wet	3.333		88	40-140	2	30	
Chrysene	2.88	0.167	mg/kg wet	3.333		87	40-140	0.7	30	
Dibenzo(a,h)Anthracene	2.80	0.167	mg/kg wet	3.333		84	40-140	0.2	30	
Dibenzofuran	2.45	0.333	mg/kg wet	3.333		74	40-140	1	30	
Diethylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	0.8	30	
Dimethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140	0.4	30	
Di-n-butylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140	2	30	
Di-n-octylphthalate	2.97	0.333	mg/kg wet	3.333		89	40-140	2	30	
Fluoranthene	2.90	0.333	mg/kg wet	3.333		87	40-140	4	30	
Fluorene	2.70	0.333	mg/kg wet	3.333		81	40-140	0.7	30	
Hexachlorobenzene	2.48	0.167	mg/kg wet	3.333		74	40-140	2	30	
Hexachlorobutadiene	2.02	0.333	mg/kg wet	3.333		60	40-140	10	30	
Hexachlorocyclopentadiene	1.32	1.67	mg/kg wet	3.333		40	40-140	7	30	
Hexachloroethane	2.16	0.333	mg/kg wet	3.333		65	40-140	14	30	
Indeno(1,2,3-cd)Pyrene	2.76	0.333	mg/kg wet	3.333		83	40-140	0.05	30	
Isophorone	2.03	0.333	mg/kg wet	3.333		61	40-140	5	30	
Naphthalene	2.12	0.333	mg/kg wet	3.333		64	40-140	8	30	
Nitrobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140	7	30	
N-Nitrosodimethylamine	2.00	0.333	mg/kg wet	3.333		60	40-140	14	30	
N-Nitroso-Di-n-Propylamine	2.45	0.333	mg/kg wet	3.333		73	40-140	9	30	
N-nitrosodiphenylamine	2.69	0.333	mg/kg wet	3.333		81	40-140	1	30	
Pentachlorophenol	2.58	1.67	mg/kg wet	3.333		77	30-130	1	30	
Phenanthrene	2.71	0.333	mg/kg wet	3.333		81	40-140	3	30	
Phenol	2.43	0.333	mg/kg wet	3.333		73	30-130	9	30	
Pyrene	2.86	0.333	mg/kg wet	3.333		86	40-140	0.2	30	
Pyridine	1.58	1.67	mg/kg wet	3.333		48	40-140	12	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.17*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.93*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.72*		mg/kg wet	*5.000*		*74*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.27*		mg/kg wet	*3.333*		*68*	*30-130*			
Surrogate: 2-Fluorophenol	*3.43*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.32*		mg/kg wet	*3.333*		*70*	*30-130*			
Surrogate: Phenol-d6	*3.56*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.93*		mg/kg wet	*3.333*		*88*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19L0120

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
J	Reported between MDL and MRL
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
BT	Benzidine tailing factor >2.
B+	Blank Spike recovery is above upper control limit (B+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0120

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: Client

ESS Project ID: 19L0120
Date Received: 12/4/2019
Project Due Date: 12/11/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA
13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	418286	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	418287	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	418285	Yes	NA	Yes	VOA Vial - Methanol	MeOH	

2nd Review

Were all containers scanned into storage/lab? Initials
Are barcode labels on correct containers? (Yes) / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 12/4/19 1723
Reviewed By: Date & Time: 12/4/19 1800
Delivered By: 12/4/19 1800

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 19L0120

Turn Time	5 Days
Regulatory State	RI
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Reporting Limits	
Electonic Deliverables	☐ Data Checker ☐ Excel ☒ Other (Please Specify →)

Company Name	GZA
Contact Person	Rick Carlone
City	Providence
State	RI
Telephone Number	401-427-2776
FAX Number	
Project #	34648.00
Project Name	Truk Away
Address	188 Valley St Ste 300
Zip Code	02909
PO #	
Email Address	richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	SVOC	Metals 15 solid waste	% solid	VOC high
1	12/4/19	1300	Grab	S	TP-4 0'-2'	X	X	X	X
2	↓				Trip Blank				X
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial						AG	AG	AG	V
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*						10	10	10	7
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*						1	1	1	6
Number of Containers per Sample:						1			1

Laboratory Use Only

Cooler Present: ✓ ○ Drop Off
Seals Intact: ○ Pickup
Cooler Temperature: 5.4 °C Ice

Sampled by: Marissa Kelly

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12/4/19 1645	[signature] 12/4/19 1645		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 20A0135

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:36 pm, Jan 21, 2020

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

SAMPLE RECEIPT

The following samples were received on January 07, 2020 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
20A0135-01	MW-109	Ground Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-02	MW-110	Ground Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-03	MW-111	Ground Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-04	MW-112	Ground Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-05	MW-106S	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-06	MW-106D	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-07	MW-3	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-08	MW-EA-01	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM PAH
20A0135-09	Trip Blank	Ground Water	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20A0135

PROJECT NARRATIVE

8081B Organochlorine Pesticides

20A0135-06 **Lower value is used due to matrix interferences (LC).**
Chlordane (Total)

20A0135-06 **Percent difference between primary and confirmation results exceeds 40% (P).**
Chlordane (Total)

8270D Semi-Volatile Organic Compounds

C0A0123-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (118% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (132% @ 80-120%), Pentachlorophenol (104% @ 80-120%)

C0A0123-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzoic Acid (32% @ 20%)

C0A0151-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (110% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (129% @ 80-120%), Pentachlorophenol (96% @ 80-120%)

C0A0151-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzoic Acid (29% @ 20%)

C0A0151-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Hexachlorobutadiene (21% @ 20%)

8270D(SIM) Polynuclear Aromatic Hydrocarbons

20A0135-01 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (381% @ 50-200%), Perylene-d12 (399% @ 50-200%)

20A0135-02 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (226% @ 50-200%), Perylene-d12 (238% @ 50-200%)

20A0135-03 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (320% @ 50-200%), Perylene-d12 (312% @ 50-200%)

20A0135-04 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (366% @ 50-200%), Perylene-d12 (361% @ 50-200%)

20A0135-06 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (307% @ 50-200%), Perylene-d12 (294% @ 50-200%)

20A0135-07 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (161% @ 50-200%), Perylene-d12 (149% @ 50-200%)

20A0135-08 **Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
Chrysene-d12 (53% @ 50-200%), Perylene-d12 (28% @ 50-200%), Phenanthrene-d10 (333% @ 50-200%)

C0A0163-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Nitrobenzene-d5 (26% @ 20%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20A0135

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/09/20 22:46	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Heptachlor [2C]	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/09/20 22:46	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/09/20 22:46	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*46 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*71 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 18:28		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 18:28		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*44 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*44 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*63 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*45 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**2.38** (0.19)		8100M		1	01/08/20 22:26	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*92 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,1,1-Trichloroethane	**0.0059** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,1-Dichloroethane	**0.0166** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.0396** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,3,5-Trimethylbenzene	**0.0053** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0029** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 15:13	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 15:13	C0A0114	CA00859
2-Chlorotoluene	**0.0017** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 15:13	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
4-Isopropyltoluene	**0.0013** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Benzene	**0.0160** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Chlorobenzene	**0.0114** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Chloroethane	**0.577** (0.0200)		8260B		10	01/10/20 13:07	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Diethyl Ether	**0.0014** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Ethylbenzene	**0.0102** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Isopropylbenzene	**0.0112** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Naphthalene	**0.0463** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
n-Butylbenzene	**0.0015** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
n-Propylbenzene	**0.0071** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0102** (0.0050)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Toluene	**0.0260** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Xylene O	**0.0082** (0.0010)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Xylene P,M	**0.0291** (0.0020)		8260B		1	01/08/20 15:13	C0A0114	CA00859
Xylenes (Total)	**0.0373** (0.00200)		8260B		1	01/08/20 15:13		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 20:18	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 20:18	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 20:18	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	ND (0.0056)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Naphthalene	**0.0238** (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 20:18	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 20:18	C0A0123	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*58 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*79 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*68 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*61 %*		*30-130*
Surrogate: 2-Fluorophenol	*65 %*		*15-110*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Nitrobenzene-d5		*71 %*		*30-130*				
Surrogate: Phenol-d6		*77 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*47 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-109
Date Sampled: 01/07/20 11:11
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0044** (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Acenaphthene	**0.0006** (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Anthracene	ND (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Chrysene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Fluoranthene	ND (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Fluorene	**0.0007** (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Phenanthrene	**0.0006** (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829
Pyrene	ND (0.0002)		8270D SIM PAH		1	01/17/20 21:18	D0A0032	CA00829

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/09/20 23:17	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Dieldrin [2C]	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/09/20 23:17	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/09/20 23:17	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*40 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1242	**0.18** (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 18:47		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 18:47		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*30 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*30 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**4.82** (0.19)		8100M		1	01/08/20 22:58	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*90 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.0290** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2-Dichlorobenzene	**0.0016** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,3,5-Trimethylbenzene	**0.0031** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0082** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1,4-Dioxane - Screen	**1.28** (0.500)		8260B		1	01/08/20 15:39	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 15:39	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 15:39	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Benzene	**0.0080** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Chlorobenzene	**0.0155** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Chloroethane	**0.0886** (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Diethyl Ether	**0.0040** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Ethylbenzene	**0.0035** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Isopropylbenzene	**0.0121** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Naphthalene	**0.0188** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
n-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
n-Propylbenzene	**0.0034** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0409** (0.0050)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Toluene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Xylene O	**0.0025** (0.0010)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Xylene P,M	**0.0148** (0.0020)		8260B		1	01/08/20 15:39	C0A0114	CA00859
Xylenes (Total)	**0.0173** (0.00200)		8260B		1	01/08/20 15:39		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 20:45	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 20:45	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 20:45	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	**0.0100** (0.0056)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 20:45	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 20:45	C0A0123	CA00829

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*57 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*76 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*73 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: 2-Fluorophenol	*69 %*		*15-110*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*82 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*45 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-110
Date Sampled: 01/07/20 11:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0018** (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Acenaphthene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Anthracene	**0.0006** (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Benzo(a)anthracene	**0.00007** (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Chrysene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Fluoranthene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Fluorene	**0.0004** (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Naphthalene	**0.0109** (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Phenanthrene	**0.0002** (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829
Pyrene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:04	D0A0032	CA00829

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/09/20 23:48	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Hexachlorobenzene [2C]	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/09/20 23:48	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/09/20 23:48	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*55 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1242	**0.15** (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 19:06		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 19:06		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*44 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*48 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**2.11** (0.19)		8100M		1	01/08/20 23:30	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*91 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.0246** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0046** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 16:05	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 16:05	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 16:05	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Benzene	**0.0148** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Chlorobenzene	**0.0202** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Chloroethane	**0.0598** (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Diethyl Ether	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Ethylbenzene	**0.0016** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Isopropylbenzene	**0.0048** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Naphthalene	**0.0080** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
n-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
n-Propylbenzene	**0.0056** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Toluene	**0.0011** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Xylene O	**0.0014** (0.0010)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Xylene P,M	**0.0093** (0.0020)		8260B		1	01/08/20 16:05	C0A0114	CA00859
Xylenes (Total)	**0.0108** (0.00200)		8260B		1	01/08/20 16:05		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 21:12	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 21:12	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 21:12	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	**0.0082** (0.0056)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 21:12	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 21:12	C0A0123	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*75 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*66 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*56 %*		*30-130*
Surrogate: 2-Fluorophenol	*61 %*		*15-110*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*73 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*43 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-111
Date Sampled: 01/07/20 10:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0013** (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Acenaphthene	**0.0003** (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Anthracene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Chrysene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Fluoranthene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Fluorene	**0.0002** (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Naphthalene	**0.0045** (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Phenanthrene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829
Pyrene	ND (0.0002)		8270D SIM PAH		1	01/17/20 22:51	D0A0032	CA00829

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 0:18	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 0:18	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 0:18	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*38 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*37 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 19:25		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 19:25		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*48 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*48 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1.65** (0.19)		8100M		1	01/09/20 0:02	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*95 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,1-Dichloroethane	**0.0025** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.0184** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,3,5-Trimethylbenzene	**0.0011** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0036** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 16:31	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 16:31	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 16:31	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Benzene	**0.0069** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Chlorobenzene	**0.0079** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Chloroethane	**0.0508** (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Diethyl Ether	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Ethylbenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Isopropylbenzene	**0.0101** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Naphthalene	**0.0374** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
n-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
n-Propylbenzene	**0.0036** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0054** (0.0050)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Toluene	**0.0012** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Xylene O	**0.0020** (0.0010)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Xylene P,M	**0.0046** (0.0020)		8260B		1	01/08/20 16:31	C0A0114	CA00859
Xylenes (Total)	**0.00660** (0.00200)		8260B		1	01/08/20 16:31		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*95 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 21:40	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 21:40	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 21:40	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	**0.0210** (0.0056)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 21:40	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 21:40	C0A0123	CA00829

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*73 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*63 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*57 %*		*30-130*
Surrogate: 2-Fluorophenol	*60 %*		*15-110*
Surrogate: Nitrobenzene-d5	*67 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*66 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*58 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-112
Date Sampled: 01/07/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0053** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Acenaphthene	**0.0027** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Anthracene	**0.0003** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Chrysene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Fluoranthene	**0.0003** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Fluorene	**0.0026** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Naphthalene	**0.0175** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Phenanthrene	**0.0024** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829
Pyrene	**0.0002** (0.0002)		8270D SIM PAH		1	01/17/20 23:38	D0A0032	CA00829

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	KJK	01/09/20 12:52	50	25	CA00861
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 14:26	50	25	CA00861
Barium	**0.317** (0.025)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Beryllium	ND (0.0005)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Cadmium	ND (0.0025)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Chromium	ND (0.010)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Cobalt	ND (0.010)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Copper	ND (0.010)		6010C		1	KJK	01/09/20 12:26	50	25	CA00861
Lead	ND (0.010)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Mercury	ND (0.00020)		7470A		1	KJK	01/09/20 17:05	20	40	CA00780
Nickel	**0.025** (0.025)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Selenium	ND (0.025)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Silver	ND (0.005)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Thallium	ND (0.001)		6020A		1	KJK	01/09/20 12:52	50	25	CA00861
Vanadium	ND (0.010)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861
Zinc	ND (0.025)		6010C		1	KJK	01/08/20 22:35	50	25	CA00861

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 0:49	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 0:49	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 0:49	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*47 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*70 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 19:44		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 19:44		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*47 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1.11** (0.19)		8100M		1	01/09/20 0:34	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*100 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.0090** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0073** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 16:57	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 16:57	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 16:57	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Benzene	**0.0169** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Chlorobenzene	**0.125** (0.0100)		8260B		10	01/10/20 13:33	C0A0114	CA00859
Chloroethane	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Diethyl Ether	**0.0014** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Ethylbenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Isopropylbenzene	**0.0158** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Naphthalene	**0.0212** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
n-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
n-Propylbenzene	**0.0020** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Toluene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Xylene O	**0.0013** (0.0010)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Xylene P,M	**0.0056** (0.0020)		8260B		1	01/08/20 16:57	C0A0114	CA00859
Xylenes (Total)	**0.00690** (0.00200)		8260B		1	01/08/20 16:57		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*94 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 22:07	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 22:07	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 22:07	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	ND (0.0056)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Naphthalene	**0.0141** (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 22:07	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 22:07	C0A0123	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*80 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*78 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*
Surrogate: 2-Fluorophenol	*76 %*		*15-110*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Nitrobenzene-d5		*84 %*		*30-130*				
Surrogate: Phenol-d6		*84 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*52 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106S
Date Sampled: 01/07/20 14:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0013** (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Acenaphthene	**0.0005** (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Anthracene	ND (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Benzo(b)fluoranthene	**0.00005** (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Chrysene	ND (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Fluoranthene	ND (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Fluorene	**0.0003** (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Phenanthrene	**0.0003** (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829
Pyrene	ND (0.0002)		8270D SIM PAH		1	01/18/20 0:25	D0A0032	CA00829

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**0.003** (0.001)		6020A		1	KJK	01/09/20 13:49	50	25	CA00861
Arsenic	**0.006** (0.002)		7010		1	KJK	01/10/20 14:57	50	25	CA00861
Barium	**0.190** (0.025)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Beryllium	**0.0005** (0.0005)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Cadmium	**0.0062** (0.0025)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Chromium	**0.073** (0.010)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Cobalt	**0.011** (0.010)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Copper	**0.114** (0.010)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Lead	**0.454** (0.010)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Mercury	**0.00138** (0.00020)		7470A		1	KJK	01/09/20 17:07	20	40	CA00780
Nickel	**0.067** (0.025)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Selenium	ND (0.025)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Silver	ND (0.005)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Thallium	ND (0.001)		6020A		1	KJK	01/09/20 13:49	50	25	CA00861
Vanadium	**0.037** (0.010)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861
Zinc	**0.660** (0.025)		6010C		1	KJK	01/08/20 23:06	50	25	CA00861

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD [2C]	**0.000078** (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Chlordane (Total)	**P, LC 0.000706** (0.000467)		8081B		1	01/10/20 1:20	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
gamma-Chlordane [2C]	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 1:20	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 1:20	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*34 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*37 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*64 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1242	**0.70** (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1254 [2C]	**0.45** (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 21:58		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 21:58		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*33 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*33 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*53 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*47 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**5.31** (0.19)		8100M		1	01/09/20 1:06	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*84 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.0096** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0011** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 17:23	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 17:23	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 17:23	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Benzene	**0.0034** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Chlorobenzene	**0.0080** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Chloroethane	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Diethyl Ether	**0.0016** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Ethylbenzene	**0.0040** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Isopropylbenzene	**0.0026** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Naphthalene	**0.0081** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
n-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
n-Propylbenzene	**0.0014** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0501** (0.0050)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Toluene	**0.0046** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Xylene O	**0.0011** (0.0010)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Xylene P,M	**0.0259** (0.0020)		8260B		1	01/08/20 17:23	C0A0114	CA00859
Xylenes (Total)	**0.0270** (0.00200)		8260B		1	01/08/20 17:23		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*95 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 22:34	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 22:34	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 22:34	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	**0.0081** (0.0056)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 22:34	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 22:34	C0A0123	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*59 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*69 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*71 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*44 %*		*30-130*
Surrogate: 2-Fluorophenol	*64 %*		*15-110*
Surrogate: Nitrobenzene-d5	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*77 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*38 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-106D
Date Sampled: 01/07/20 15:07
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0012** (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Acenaphthene	ND (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Anthracene	ND (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Benzo(a)anthracene	**0.0002** (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Benzo(a)pyrene	**0.0002** (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Benzo(b)fluoranthene	**0.0002** (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Benzo(k)fluoranthene	**0.00008** (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Chrysene	**0.0002** (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Fluoranthene	**0.0003** (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Fluorene	**0.0002** (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	**0.0001** (0.00005)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Naphthalene	**0.0055** (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Phenanthrene	**0.0006** (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829
Pyrene	**0.0005** (0.0002)		8270D SIM PAH		1	01/18/20 1:11	D0A0032	CA00829

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	KJK	01/09/20 13:54	50	25	CA00861
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 15:02	50	25	CA00861
Barium	**0.487** (0.025)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Beryllium	ND (0.0005)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Cadmium	ND (0.0025)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Chromium	ND (0.010)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Cobalt	ND (0.010)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Copper	ND (0.010)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Lead	ND (0.010)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Mercury	ND (0.00020)		7470A		1	KJK	01/09/20 17:10	20	40	CA00780
Nickel	ND (0.025)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Selenium	ND (0.025)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Silver	ND (0.005)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Thallium	ND (0.001)		6020A		1	KJK	01/09/20 13:54	50	25	CA00861
Vanadium	ND (0.010)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861
Zinc	**0.070** (0.025)		6010C		1	KJK	01/08/20 23:10	50	25	CA00861

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Chlordane (Total)	**0.000649** (0.000467)		8081B		1	01/10/20 1:50	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
gamma-Chlordane [2C]	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 1:50	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 1:50	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*55 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*98 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1242	**0.30** (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1254 [2C]	**0.16** (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 22:17		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 22:17		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*31 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*32 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**5.34** (0.19)		8100M		1	01/09/20 1:38	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*102 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,1,1-Trichloroethane	**0.0015** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,1-Dichloroethane	**0.0180** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.173** (0.0500)		8260B		50	01/10/20 13:59	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2-Dichlorobenzene	**0.0013** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,3,5-Trimethylbenzene	**0.0434** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0127** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 17:49	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 17:49	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 17:49	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
4-Isopropyltoluene	**0.0057** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Benzene	**0.0192** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 17:49	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Chlorobenzene	**0.0197** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Chloroethane	**2.04** (0.100)		8260B		50	01/10/20 13:59	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 17:49	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Diethyl Ether	**0.0034** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Ethylbenzene	**0.372** (0.0500)		8260B		50	01/10/20 13:59	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Isopropylbenzene	**0.0150** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Naphthalene	**0.0438** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
n-Butylbenzene	**0.0180** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
n-Propylbenzene	**0.0213** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
sec-Butylbenzene	**0.0081** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0110** (0.0050)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Toluene	**0.0445** (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 17:49	C0A0114	CA00859
Xylene O	**0.280** (0.0500)		8260B		50	01/10/20 13:59	C0A0114	CA00859
Xylene P,M	**1.51** (0.100)		8260B		50	01/10/20 13:59	C0A0114	CA00859
Xylenes (Total)	**1.79** (0.100)		8260B		50	01/10/20 13:59		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*94 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/09/20 23:02	C0A0123	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/09/20 23:02	C0A0123	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Aniline	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/09/20 23:02	C0A0123	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
bis(2-Ethylhexyl)phthalate	**0.0481** (0.0056)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Carbazole	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Di-n-octylphthalate	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Isophorone	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Naphthalene	**0.0240** (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Phenol	ND (0.0093)		8270D		1	01/09/20 23:02	C0A0123	CA00829
Pyridine	ND (0.0935)		8270D		1	01/09/20 23:02	C0A0123	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*76 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*62 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: 2-Fluorophenol	*58 %*		*15-110*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/8/20 16:30

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Nitrobenzene-d5		*65 %*		*30-130*				
Surrogate: Phenol-d6		*68 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*69 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-3
Date Sampled: 01/07/20 14:41
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/8/20 16:30

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0038** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Acenaphthene	**0.0007** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Anthracene	**0.0002** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Chrysene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Fluoranthene	**0.0003** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Fluorene	**0.0007** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Phenanthrene	**0.0009** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829
Pyrene	**0.0005** (0.0002)		8270D SIM PAH		1	01/18/20 1:58	D0A0032	CA00829

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	KJK	01/09/20 13:59	50	25	CA00861
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 15:08	50	25	CA00861
Barium	**0.385** (0.025)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Beryllium	ND (0.0005)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Cadmium	ND (0.0025)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Chromium	ND (0.010)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Cobalt	ND (0.010)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Copper	**0.013** (0.010)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Lead	ND (0.010)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Mercury	ND (0.00020)		7470A		1	KJK	01/09/20 17:12	20	40	CA00780
Nickel	**0.026** (0.025)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Selenium	ND (0.025)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Silver	ND (0.005)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Thallium	ND (0.001)		6020A		1	KJK	01/09/20 13:59	50	25	CA00861
Vanadium	ND (0.010)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861
Zinc	**0.026** (0.025)		6010C		1	KJK	01/08/20 23:14	50	25	CA00861

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/8/20 14:03

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
alpha-Chlordane	**0.000097** (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Chlordane (Total) [2C]	**0.00139** (0.000467)		8081B		1	01/10/20 2:21	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
gamma-Chlordane	**0.000107** (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 2:21	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 2:21	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*42 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*67 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/8/20 10:05

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1242 [2C]	**2.52** (0.47)		8082A		5	01/13/20 15:23		CA00742
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1260	**1.31** (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 22:36		CA00742
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 22:36		CA00742

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*42 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/8/20 10:05

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**20.3** (0.19)		8100M		1	01/09/20 2:10	C0A0061	CA00743

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*111 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,1,1-Trichloroethane	**0.0225** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,1-Dichloroethane	**0.289** (0.100)		8260B		100	01/10/20 14:24	C0A0114	CA00859
1,1-Dichloroethene	**0.0013** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2,4-Trimethylbenzene	**0.295** (0.100)		8260B		100	01/10/20 14:24	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2-Dichlorobenzene	**0.0011** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2-Dichloroethane	**0.0030** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,3,5-Trimethylbenzene	**0.0861** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,4-Dichlorobenzene	**0.0110** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 18:14	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 18:14	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 18:14	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
4-Isopropyltoluene	**0.0087** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Benzene	**0.0213** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 18:14	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Chlorobenzene	**0.0150** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Chloroethane	**4.77** (0.200)		8260B		100	01/10/20 14:24	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 18:14	C0A0114	CA00859
cis-1,2-Dichloroethene	**0.0022** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Diethyl Ether	**0.0027** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Ethylbenzene	**1.62** (0.100)		8260B		100	01/10/20 14:24	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Isopropylbenzene	**0.0265** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Naphthalene	**0.0764** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
n-Butylbenzene	**0.0252** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
n-Propylbenzene	**0.0404** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
sec-Butylbenzene	**0.0100** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
tert-Butylbenzene	**0.0012** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0111** (0.0050)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Toluene	**0.351** (0.100)		8260B		100	01/10/20 14:24	C0A0114	CA00859
trans-1,2-Dichloroethene	**0.0021** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Vinyl Chloride	**0.0010** (0.0010)		8260B		1	01/08/20 18:14	C0A0114	CA00859
Xylene O	**1.22** (0.100)		8260B		100	01/10/20 14:24	C0A0114	CA00859
Xylene P,M	**5.18** (0.200)		8260B		100	01/10/20 14:24	C0A0114	CA00859
Xylenes (Total)	**6.40** (0.200)		8260B		100	01/10/20 14:24		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*93 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
1,2,4-Trichlorobenzene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
1,2-Dichlorobenzene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
1,3-Dichlorobenzene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
1,4-Dichlorobenzene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.0467)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,4,5-Trichlorophenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,4,6-Trichlorophenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,4-Dichlorophenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,4-Dimethylphenol	ND (0.0467)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,4-Dinitrophenol	ND (0.0467)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,4-Dinitrotoluene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2,6-Dinitrotoluene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2-Chloronaphthalene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2-Chlorophenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2-Methylphenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2-Nitroaniline	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
2-Nitrophenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
3,3´-Dichlorobenzidine	ND (0.0187)		8270D		1	01/10/20 16:31	C0A0151	CA00829
3+4-Methylphenol	ND (0.0187)		8270D		1	01/10/20 16:31	C0A0151	CA00829
3-Nitroaniline	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.0467)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4-Bromophenyl-phenylether	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4-Chloro-3-Methylphenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4-Chloroaniline	ND (0.0187)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4-Nitroaniline	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
4-Nitrophenol	ND (0.0467)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Acetophenone	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Aniline	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Azobenzene	ND (0.0187)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Benzoic Acid	ND (0.0935)		8270D		1	01/10/20 16:31	C0A0151	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
bis(2-Chloroethoxy)methane	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
bis(2-Chloroethyl)ether	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
bis(2-chloroisopropyl)Ether	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
bis(2-Ethylhexyl)phthalate	**0.171** (0.0056)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Butylbenzylphthalate	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Carbazole	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Dibenzofuran	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Diethylphthalate	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Dimethylphthalate	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Di-n-butylphthalate	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Di-n-octylphthalate	**0.0158** (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Hexachlorobenzene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Hexachlorobutadiene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Hexachlorocyclopentadiene	ND (0.0234)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Hexachloroethane	ND (0.0047)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Isophorone	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Naphthalene	**0.0463** (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Nitrobenzene	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
N-Nitrosodimethylamine	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
N-nitrosodiphenylamine	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Pentachlorophenol	ND (0.0467)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Phenol	ND (0.0093)		8270D		1	01/10/20 16:31	C0A0151	CA00829
Pyridine	ND (0.0935)		8270D		1	01/10/20 16:31	C0A0151	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*63 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*56 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*68 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*65 %*		*30-130*
Surrogate: 2-Fluorophenol	*58 %*		*15-110*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Nitrobenzene-d5		*75 %*		*30-130*				
Surrogate: Phenol-d6		*73 %*		*15-110*				
Surrogate: p-Terphenyl-d14		*57 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-EA-01
Date Sampled: 01/07/20 14:31
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/9/20 12:00

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.0036** (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Acenaphthene	**0.0003** (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Acenaphthylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Anthracene	**0.0009** (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Benzo(a)anthracene	**0.0007** (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Benzo(g,h,i)perylene	ND (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Chrysene	**0.0004** (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Fluoranthene	**0.0003** (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Fluorene	ND (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Phenanthrene	ND (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829
Pyrene	**0.0005** (0.0002)		8270D SIM PAH		1	01/18/20 2:45	D0A0032	CA00829

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/07/20 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/08/20 13:27	C0A0114	CA00859
1-Chlorohexane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
2-Butanone	ND (0.0100)		8260B		1	01/08/20 13:27	C0A0114	CA00859
2-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
2-Hexanone	ND (0.0100)		8260B		1	01/08/20 13:27	C0A0114	CA00859
4-Chlorotoluene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Acetone	ND (0.0100)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Benzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Bromobenzene	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/07/20 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Bromodichloromethane	ND (0.0006)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Bromoform	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Bromomethane	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Carbon Disulfide	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Chlorobenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Chloroethane	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Chloroform	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Chloromethane	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Dibromochloromethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Dibromomethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Diethyl Ether	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Di-isopropyl ether	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Ethylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Hexachloroethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Isopropylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Methylene Chloride	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Naphthalene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
n-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
n-Propylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
sec-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Styrene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
tert-Butylbenzene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Tetrachloroethene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/07/20 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0135
ESS Laboratory Sample ID: 20A0135-09
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Toluene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Trichloroethene	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Vinyl Acetate	ND (0.0050)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Vinyl Chloride	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Xylene O	ND (0.0010)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Xylene P,M	ND (0.0020)		8260B		1	01/08/20 13:27	C0A0114	CA00859
Xylenes (Total)	ND (0.00200)		8260B		1	01/08/20 13:27		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CA00780 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00495	0.00020	mg/L	0.006042		82	80-120			
LCS Dup										
Mercury	0.00491	0.00020	mg/L	0.006042		81	80-120	0.7	20	
Batch CA00861 - 3005A/200.7										
Blank										
Barium	ND	0.025	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0025	mg/L							
Chromium	ND	0.010	mg/L							
Cobalt	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
Nickel	ND	0.025	mg/L							
Selenium	ND	0.025	mg/L							
Silver	ND	0.005	mg/L							
Vanadium	ND	0.010	mg/L							
Zinc	ND	0.025	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Thallium	ND	0.001	mg/L							
Blank										
Arsenic	ND	0.002	mg/L							
LCS										
Barium	0.227	0.025	mg/L	0.2500		91	80-120			
Beryllium	0.0227	0.0005	mg/L	0.02500		91	80-120			
Cadmium	0.111	0.0025	mg/L	0.1250		89	80-120			
Chromium	0.228	0.010	mg/L	0.2500		91	80-120			
Cobalt	0.229	0.010	mg/L	0.2500		92	80-120			
Copper	0.251	0.010	mg/L	0.2500		100	80-120			
Lead	0.231	0.010	mg/L	0.2500		92	80-120			
Nickel	0.230	0.025	mg/L	0.2500		92	80-120			
Selenium	0.445	0.025	mg/L	0.5000		89	80-120			
Silver	0.117	0.005	mg/L	0.1250		94	80-120			
Vanadium	0.229	0.010	mg/L	0.2500		91	80-120			
Zinc	0.232	0.025	mg/L	0.2500		93	80-120			
LCS										
Antimony	0.225	0.005	mg/L	0.2500		90	80-120			
Thallium	0.213	0.005	mg/L	0.2500		85	80-120			
LCS										
Arsenic	0.214	0.062	mg/L	0.2500		86	80-120			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CA00861 - 3005A/200.7										
LCS Dup										
Barium	0.243	0.025	mg/L	0.2500		97	80-120	7	20	
Beryllium	0.0242	0.0005	mg/L	0.02500		97	80-120	6	20	
Cadmium	0.117	0.0025	mg/L	0.1250		93	80-120	5	20	
Chromium	0.243	0.010	mg/L	0.2500		97	80-120	6	20	
Cobalt	0.243	0.010	mg/L	0.2500		97	80-120	6	20	
Copper	0.265	0.010	mg/L	0.2500		106	80-120	5	20	
Lead	0.245	0.010	mg/L	0.2500		98	80-120	6	20	
Nickel	0.246	0.025	mg/L	0.2500		98	80-120	7	20	
Selenium	0.464	0.025	mg/L	0.5000		93	80-120	4	20	
Silver	0.125	0.005	mg/L	0.1250		100	80-120	6	20	
Vanadium	0.245	0.010	mg/L	0.2500		98	80-120	7	20	
Zinc	0.248	0.025	mg/L	0.2500		99	80-120	6	20	
LCS Dup										
Antimony	0.240	0.005	mg/L	0.2500		96	80-120	7	20	
Thallium	0.222	0.005	mg/L	0.2500		89	80-120	4	20	
LCS Dup										
Arsenic	0.221	0.062	mg/L	0.2500		89	80-120	3	20	
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
Chlordane (Total)	ND	0.000500	mg/L							
Chlordane (Total) [2C]	ND	0.000500	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							
Endosulfan I [2C]	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Toxaphene	ND	0.00130	mg/L							
Toxaphene [2C]	ND	0.00130	mg/L							
Surrogate: Decachlorobiphenyl	*0.000232*		mg/L	*0.0002500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000225*		mg/L	*0.0002500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000223*		mg/L	*0.0002500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000208*		mg/L	*0.0002500*		*83*	*30-150*			
LCS										
4,4´-DDD	0.000270	0.000050	mg/L	0.0002500		108	40-140			
4,4´-DDD [2C]	0.000259	0.000050	mg/L	0.0002500		104	40-140			
4,4´-DDE	0.000267	0.000050	mg/L	0.0002500		107	40-140			
4,4´-DDE [2C]	0.000263	0.000050	mg/L	0.0002500		105	40-140			
4,4´-DDT	0.000285	0.000050	mg/L	0.0002500		114	40-140			
4,4´-DDT [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140			
Aldrin	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Aldrin [2C]	0.000219	0.000050	mg/L	0.0002500		88	40-140			
alpha-BHC	0.000240	0.000050	mg/L	0.0002500		96	40-140			
alpha-BHC [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140			
alpha-Chlordane	0.000227	0.000050	mg/L	0.0002500		91	40-140			
alpha-Chlordane [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
beta-BHC	0.000244	0.000050	mg/L	0.0002500		98	40-140			
beta-BHC [2C]	0.000240	0.000050	mg/L	0.0002500		96	40-140			
delta-BHC	0.000199	0.000050	mg/L	0.0002500		80	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
delta-BHC [2C]	0.000193	0.000050	mg/L	0.0002500		77	40-140			
Dieldrin	0.000251	0.000050	mg/L	0.0002500		100	40-140			
Dieldrin [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140			
Endosulfan I	0.000225	0.000050	mg/L	0.0002500		90	40-140			
Endosulfan I [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Endosulfan II	0.000239	0.000050	mg/L	0.0002500		95	40-140			
Endosulfan II [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140			
Endosulfan Sulfate	0.000257	0.000050	mg/L	0.0002500		103	40-140			
Endosulfan Sulfate [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140			
Endrin	0.000251	0.000050	mg/L	0.0002500		101	40-140			
Endrin [2C]	0.000244	0.000050	mg/L	0.0002500		97	40-140			
Endrin Aldehyde	0.000240	0.000050	mg/L	0.0002500		96	40-140			
Endrin Aldehyde [2C]	0.000258	0.000050	mg/L	0.0002500		103	40-140			
Endrin Ketone	0.000271	0.000050	mg/L	0.0002500		109	40-140			
Endrin Ketone [2C]	0.000264	0.000050	mg/L	0.0002500		105	40-140			
gamma-BHC (Lindane)	0.000243	0.000050	mg/L	0.0002500		97	40-140			
gamma-BHC (Lindane) [2C]	0.000238	0.000050	mg/L	0.0002500		95	40-140			
gamma-Chlordane	0.000234	0.000050	mg/L	0.0002500		94	40-140			
gamma-Chlordane [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140			
Heptachlor	0.000251	0.000050	mg/L	0.0002500		101	40-140			
Heptachlor [2C]	0.000245	0.000050	mg/L	0.0002500		98	40-140			
Heptachlor Epoxide	0.000249	0.000050	mg/L	0.0002500		100	40-140			
Heptachlor Epoxide [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140			
Hexachlorobenzene	0.000233	0.000050	mg/L	0.0002500		93	40-140			
Hexachlorobenzene [2C]	0.000229	0.000050	mg/L	0.0002500		92	40-140			
Methoxychlor	0.000298	0.000050	mg/L	0.0002500		119	40-140			
Methoxychlor [2C]	0.000279	0.000050	mg/L	0.0002500		112	40-140			
Surrogate: Decachlorobiphenyl	*0.000242*		mg/L	*0.0002500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000237*		mg/L	*0.0002500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000223*		mg/L	*0.0002500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000212*		mg/L	*0.0002500*		*85*	*30-150*			
LCS Dup										
4,4´-DDD	0.000277	0.000050	mg/L	0.0002500		111	40-140	3	20	
4,4´-DDD [2C]	0.000260	0.000050	mg/L	0.0002500		104	40-140	0.3	20	
4,4´-DDE	0.000267	0.000050	mg/L	0.0002500		107	40-140	0.2	20	
4,4´-DDE [2C]	0.000262	0.000050	mg/L	0.0002500		105	40-140	0.2	20	
4,4´-DDT	0.000288	0.000050	mg/L	0.0002500		115	40-140	1	20	
4,4´-DDT [2C]	0.000278	0.000050	mg/L	0.0002500		111	40-140	0.7	20	
Aldrin	0.000229	0.000050	mg/L	0.0002500		91	40-140	2	20	
Aldrin [2C]	0.000224	0.000050	mg/L	0.0002500		90	40-140	2	20	
alpha-BHC	0.000237	0.000050	mg/L	0.0002500		95	40-140	1	20	
alpha-BHC [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	2	20	
alpha-Chlordane	0.000232	0.000050	mg/L	0.0002500		93	40-140	2	20	
alpha-Chlordane [2C]	0.000226	0.000050	mg/L	0.0002500		90	40-140	1	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
beta-BHC	0.000242	0.000050	mg/L	0.0002500		97	40-140	0.9	20	
beta-BHC [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140	1	20	
delta-BHC	0.000195	0.000050	mg/L	0.0002500		78	40-140	2	20	
delta-BHC [2C]	0.000192	0.000050	mg/L	0.0002500		77	40-140	0.8	20	
Dieldrin	0.000254	0.000050	mg/L	0.0002500		102	40-140	1	20	
Dieldrin [2C]	0.000246	0.000050	mg/L	0.0002500		98	40-140	1	20	
Endosulfan I	0.000228	0.000050	mg/L	0.0002500		91	40-140	1	20	
Endosulfan I [2C]	0.000226	0.000050	mg/L	0.0002500		91	40-140	1	20	
Endosulfan II	0.000249	0.000050	mg/L	0.0002500		100	40-140	4	20	
Endosulfan II [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140	2	20	
Endosulfan Sulfate	0.000261	0.000050	mg/L	0.0002500		104	40-140	1	20	
Endosulfan Sulfate [2C]	0.000250	0.000050	mg/L	0.0002500		100	40-140	0.7	20	
Endrin	0.000256	0.000050	mg/L	0.0002500		102	40-140	2	20	
Endrin [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140	2	20	
Endrin Aldehyde	0.000249	0.000050	mg/L	0.0002500		100	40-140	4	20	
Endrin Aldehyde [2C]	0.000268	0.000050	mg/L	0.0002500		107	40-140	4	20	
Endrin Ketone	0.000275	0.000050	mg/L	0.0002500		110	40-140	1	20	
Endrin Ketone [2C]	0.000267	0.000050	mg/L	0.0002500		107	40-140	1	20	
gamma-BHC (Lindane)	0.000243	0.000050	mg/L	0.0002500		97	40-140	0.01	20	
gamma-BHC (Lindane) [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	0.3	20	
gamma-Chlordane	0.000237	0.000050	mg/L	0.0002500		95	40-140	1	20	
gamma-Chlordane [2C]	0.000229	0.000050	mg/L	0.0002500		91	40-140	1	20	
Heptachlor	0.000254	0.000050	mg/L	0.0002500		102	40-140	1	20	
Heptachlor [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140	1	20	
Heptachlor Epoxide	0.000251	0.000050	mg/L	0.0002500		100	40-140	0.6	20	
Heptachlor Epoxide [2C]	0.000244	0.000050	mg/L	0.0002500		98	40-140	0.9	20	
Hexachlorobenzene	0.000232	0.000050	mg/L	0.0002500		93	40-140	0.7	20	
Hexachlorobenzene [2C]	0.000229	0.000050	mg/L	0.0002500		92	40-140	0.2	20	
Methoxychlor	0.000290	0.000050	mg/L	0.0002500		116	40-140	2	20	
Methoxychlor [2C]	0.000279	0.000050	mg/L	0.0002500		112	40-140	0.2	20	
Surrogate: Decachlorobiphenyl	*0.000233*		mg/L	*0.0002500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000228*		mg/L	*0.0002500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000219*		mg/L	*0.0002500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000208*		mg/L	*0.0002500*		*83*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CA00742 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CA00742 - 3510C										
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							
Surrogate: Decachlorobiphenyl	*0.0270*		ug/L	*0.05000*		*54*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0284*		ug/L	*0.05000*		*57*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0311*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0321*		ug/L	*0.05000*		*64*	*30-150*			
LCS										
Aroclor 1016	0.85	0.10	ug/L	1.000		85	40-140			
Aroclor 1016 [2C]	0.79	0.10	ug/L	1.000		79	40-140			
Aroclor 1260	0.78	0.10	ug/L	1.000		78	40-140			
Aroclor 1260 [2C]	0.77	0.10	ug/L	1.000		77	40-140			
Surrogate: Decachlorobiphenyl	*0.0358*		ug/L	*0.05000*		*72*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0377*		ug/L	*0.05000*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0411*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0398*		ug/L	*0.05000*		*80*	*30-150*			
LCS Dup										
Aroclor 1016	0.82	0.10	ug/L	1.000		82	40-140	3	20	
Aroclor 1016 [2C]	0.76	0.10	ug/L	1.000		76	40-140	3	20	
Aroclor 1260	0.81	0.10	ug/L	1.000		81	40-140	3	20	
Aroclor 1260 [2C]	0.80	0.10	ug/L	1.000		80	40-140	4	20	
Surrogate: Decachlorobiphenyl	*0.0372*		ug/L	*0.05000*		*74*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0391*		ug/L	*0.05000*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0354*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0351*		ug/L	*0.05000*		*70*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CA00743 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CA00743 - 3510C										
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.0935*		mg/L	*0.1000*		*93*	*40-140*			
LCS										
Decane (C10)	0.031	0.005	mg/L	0.05000		62	40-140			
Docosane (C22)	0.045	0.005	mg/L	0.05000		90	40-140			
Dodecane (C12)	0.041	0.005	mg/L	0.05000		82	40-140			
Eicosane (C20)	0.045	0.005	mg/L	0.05000		90	40-140			
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		91	40-140			
Hexadecane (C16)	0.044	0.005	mg/L	0.05000		88	40-140			
Nonadecane (C19)	0.052	0.005	mg/L	0.05000		105	40-140			
Nonane (C9)	0.029	0.005	mg/L	0.05000		58	30-140			
Octacosane (C28)	0.047	0.005	mg/L	0.05000		93	40-140			
Octadecane (C18)	0.044	0.005	mg/L	0.05000		88	40-140			
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		91	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140			
Total Petroleum Hydrocarbons	0.613	0.20	mg/L	0.7000		88	40-140			
Triacontane (C30)	0.047	0.005	mg/L	0.05000		93	40-140			
Surrogate: O-Terphenyl	*0.0912*		mg/L	*0.1000*		*91*	*40-140*			
LCS Dup										
Decane (C10)	0.030	0.005	mg/L	0.05000		60	40-140	3	25	
Docosane (C22)	0.045	0.005	mg/L	0.05000		91	40-140	0.6	25	
Dodecane (C12)	0.040	0.005	mg/L	0.05000		80	40-140	2	25	
Eicosane (C20)	0.046	0.005	mg/L	0.05000		91	40-140	0.7	25	
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		92	40-140	0.8	25	
Hexadecane (C16)	0.044	0.005	mg/L	0.05000		87	40-140	0.5	25	
Nonadecane (C19)	0.052	0.005	mg/L	0.05000		105	40-140	0.04	25	
Nonane (C9)	0.028	0.005	mg/L	0.05000		56	30-140	3	25	
Octacosane (C28)	0.047	0.005	mg/L	0.05000		94	40-140	1	25	
Octadecane (C18)	0.044	0.005	mg/L	0.05000		89	40-140	0.2	25	
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		92	40-140	1	25	
Tetradecane (C14)	0.042	0.005	mg/L	0.05000		85	40-140	2	25	
Total Petroleum Hydrocarbons	0.612	0.20	mg/L	0.7000		87	40-140	0.1	25	
Triacontane (C30)	0.047	0.005	mg/L	0.05000		94	40-140	1	25	
Surrogate: O-Terphenyl	*0.0892*		mg/L	*0.1000*		*89*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA00859 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA00859 - 5030B										
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0239*		mg/L	*0.02500*		*96*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0242*		mg/L	*0.02500*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0236*		mg/L	*0.02500*		*95*	*70-130*			
Surrogate: Toluene-d8	*0.0244*		mg/L	*0.02500*		*98*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	8.73		ug/L	10.00		87	70-130			
1,1,1-Trichloroethane	8.89		ug/L	10.00		89	70-130			
1,1,2,2-Tetrachloroethane	9.05		ug/L	10.00		90	70-130			
1,1,2-Trichloroethane	8.64		ug/L	10.00		86	70-130			
1,1-Dichloroethane	8.75		ug/L	10.00		88	70-130			
1,1-Dichloroethene	9.09		ug/L	10.00		91	70-130			
1,1-Dichloropropene	8.71		ug/L	10.00		87	70-130			
1,2,3-Trichlorobenzene	9.30		ug/L	10.00		93	70-130			
1,2,3-Trichloropropane	8.47		ug/L	10.00		85	70-130			
1,2,4-Trichlorobenzene	9.31		ug/L	10.00		93	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA00859 - 5030B										
1,2,4-Trimethylbenzene	9.20		ug/L	10.00		92	70-130			
1,2-Dibromo-3-Chloropropane	8.36		ug/L	10.00		84	70-130			
1,2-Dibromoethane	8.88		ug/L	10.00		89	70-130			
1,2-Dichlorobenzene	9.19		ug/L	10.00		92	70-130			
1,2-Dichloroethane	8.88		ug/L	10.00		89	70-130			
1,2-Dichloropropane	8.25		ug/L	10.00		82	70-130			
1,3,5-Trimethylbenzene	9.04		ug/L	10.00		90	70-130			
1,3-Dichlorobenzene	9.32		ug/L	10.00		93	70-130			
1,3-Dichloropropane	9.37		ug/L	10.00		94	70-130			
1,4-Dichlorobenzene	9.45		ug/L	10.00		94	70-130			
1,4-Dioxane - Screen	185		ug/L	200.0		93	0-332			
1-Chlorohexane	8.71		ug/L	10.00		87	70-130			
2,2-Dichloropropane	9.00		ug/L	10.00		90	70-130			
2-Butanone	44.0		ug/L	50.00		88	70-130			
2-Chlorotoluene	8.90		ug/L	10.00		89	70-130			
2-Hexanone	44.4		ug/L	50.00		89	70-130			
4-Chlorotoluene	9.01		ug/L	10.00		90	70-130			
4-Isopropyltoluene	9.07		ug/L	10.00		91	70-130			
4-Methyl-2-Pentanone	42.4		ug/L	50.00		85	70-130			
Acetone	41.0		ug/L	50.00		82	70-130			
Benzene	8.78		ug/L	10.00		88	70-130			
Bromobenzene	9.44		ug/L	10.00		94	70-130			
Bromochloromethane	8.94		ug/L	10.00		89	70-130			
Bromodichloromethane	8.42		ug/L	10.00		84	70-130			
Bromoform	8.78		ug/L	10.00		88	70-130			
Bromomethane	8.92		ug/L	10.00		89	70-130			
Carbon Disulfide	8.58		ug/L	10.00		86	70-130			
Carbon Tetrachloride	9.01		ug/L	10.00		90	70-130			
Chlorobenzene	9.13		ug/L	10.00		91	70-130			
Chloroethane	8.20		ug/L	10.00		82	70-130			
Chloroform	9.06		ug/L	10.00		91	70-130			
Chloromethane	7.60		ug/L	10.00		76	70-130			
cis-1,2-Dichloroethene	9.12		ug/L	10.00		91	70-130			
cis-1,3-Dichloropropene	8.28		ug/L	10.00		83	70-130			
Dibromochloromethane	8.42		ug/L	10.00		84	70-130			
Dibromomethane	8.86		ug/L	10.00		89	70-130			
Dichlorodifluoromethane	8.05		ug/L	10.00		80	70-130			
Diethyl Ether	8.59		ug/L	10.00		86	70-130			
Di-isopropyl ether	9.47		ug/L	10.00		95	70-130			
Ethyl tertiary-butyl ether	9.01		ug/L	10.00		90	70-130			
Ethylbenzene	8.76		ug/L	10.00		88	70-130			
Hexachlorobutadiene	8.96		ug/L	10.00		90	70-130			
Hexachloroethane	8.97		ug/L	10.00		90	70-130			
Isopropylbenzene	9.04		ug/L	10.00		90	70-130			
Methyl tert-Butyl Ether	9.62		ug/L	10.00		96	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA00859 - 5030B										
Methylene Chloride	9.00		ug/L	10.00		90	70-130			
Naphthalene	8.73		ug/L	10.00		87	70-130			
n-Butylbenzene	8.88		ug/L	10.00		89	70-130			
n-Propylbenzene	8.95		ug/L	10.00		90	70-130			
sec-Butylbenzene	8.88		ug/L	10.00		89	70-130			
Styrene	8.72		ug/L	10.00		87	70-130			
tert-Butylbenzene	9.09		ug/L	10.00		91	70-130			
Tertiary-amyl methyl ether	9.46		ug/L	10.00		95	70-130			
Tetrachloroethene	8.09		ug/L	10.00		81	70-130			
Tetrahydrofuran	8.86		ug/L	10.00		89	70-130			
Toluene	8.57		ug/L	10.00		86	70-130			
trans-1,2-Dichloroethene	9.14		ug/L	10.00		91	70-130			
trans-1,3-Dichloropropene	8.22		ug/L	10.00		82	70-130			
Trichloroethene	8.94		ug/L	10.00		89	70-130			
Trichlorofluoromethane	9.71		ug/L	10.00		97	70-130			
Vinyl Acetate	9.02		ug/L	10.00		90	70-130			
Vinyl Chloride	7.52		ug/L	10.00		75	70-130			
Xylene O	8.90		ug/L	10.00		89	70-130			
Xylene P,M	18.1		ug/L	20.00		91	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0238*		mg/L	*0.02500*		*95*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0244*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0240*		mg/L	*0.02500*		*96*	*70-130*			
Surrogate: Toluene-d8	*0.0245*		mg/L	*0.02500*		*98*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	8.89		ug/L	10.00		89	70-130	2	25	
1,1,1-Trichloroethane	9.21		ug/L	10.00		92	70-130	4	25	
1,1,2,2-Tetrachloroethane	9.17		ug/L	10.00		92	70-130	1	25	
1,1,2-Trichloroethane	8.72		ug/L	10.00		87	70-130	0.9	25	
1,1-Dichloroethane	9.01		ug/L	10.00		90	70-130	3	25	
1,1-Dichloroethene	9.33		ug/L	10.00		93	70-130	3	25	
1,1-Dichloropropene	9.05		ug/L	10.00		90	70-130	4	25	
1,2,3-Trichlorobenzene	9.53		ug/L	10.00		95	70-130	2	25	
1,2,3-Trichloropropane	8.59		ug/L	10.00		86	70-130	1	25	
1,2,4-Trichlorobenzene	9.53		ug/L	10.00		95	70-130	2	25	
1,2,4-Trimethylbenzene	9.34		ug/L	10.00		93	70-130	2	25	
1,2-Dibromo-3-Chloropropane	7.73		ug/L	10.00		77	70-130	8	25	
1,2-Dibromoethane	8.87		ug/L	10.00		89	70-130	0.1	25	
1,2-Dichlorobenzene	9.30		ug/L	10.00		93	70-130	1	25	
1,2-Dichloroethane	9.08		ug/L	10.00		91	70-130	2	25	
1,2-Dichloropropane	8.51		ug/L	10.00		85	70-130	3	25	
1,3,5-Trimethylbenzene	9.29		ug/L	10.00		93	70-130	3	25	
1,3-Dichlorobenzene	9.53		ug/L	10.00		95	70-130	2	25	
1,3-Dichloropropane	9.61		ug/L	10.00		96	70-130	3	25	
1,4-Dichlorobenzene	9.58		ug/L	10.00		96	70-130	1	25	
1,4-Dioxane - Screen	192		ug/L	200.0		96	0-332	4	200	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA00859 - 5030B										
1-Chlorohexane	8.95		ug/L	10.00		90	70-130	3	25	
2,2-Dichloropropane	9.26		ug/L	10.00		93	70-130	3	25	
2-Butanone	44.9		ug/L	50.00		90	70-130	2	25	
2-Chlorotoluene	9.21		ug/L	10.00		92	70-130	3	25	
2-Hexanone	46.0		ug/L	50.00		92	70-130	4	25	
4-Chlorotoluene	9.09		ug/L	10.00		91	70-130	0.9	25	
4-Isopropyltoluene	9.23		ug/L	10.00		92	70-130	2	25	
4-Methyl-2-Pentanone	43.6		ug/L	50.00		87	70-130	3	25	
Acetone	42.2		ug/L	50.00		84	70-130	3	25	
Benzene	9.01		ug/L	10.00		90	70-130	3	25	
Bromobenzene	9.69		ug/L	10.00		97	70-130	3	25	
Bromochloromethane	9.10		ug/L	10.00		91	70-130	2	25	
Bromodichloromethane	8.51		ug/L	10.00		85	70-130	1	25	
Bromoform	9.07		ug/L	10.00		91	70-130	3	25	
Bromomethane	9.02		ug/L	10.00		90	70-130	1	25	
Carbon Disulfide	8.95		ug/L	10.00		90	70-130	4	25	
Carbon Tetrachloride	9.28		ug/L	10.00		93	70-130	3	25	
Chlorobenzene	9.47		ug/L	10.00		95	70-130	4	25	
Chloroethane	8.41		ug/L	10.00		84	70-130	3	25	
Chloroform	9.13		ug/L	10.00		91	70-130	0.8	25	
Chloromethane	7.62		ug/L	10.00		76	70-130	0.3	25	
cis-1,2-Dichloroethene	9.21		ug/L	10.00		92	70-130	1	25	
cis-1,3-Dichloropropene	8.35		ug/L	10.00		84	70-130	0.8	25	
Dibromochloromethane	8.76		ug/L	10.00		88	70-130	4	25	
Dibromomethane	9.07		ug/L	10.00		91	70-130	2	25	
Dichlorodifluoromethane	8.36		ug/L	10.00		84	70-130	4	25	
Diethyl Ether	8.81		ug/L	10.00		88	70-130	3	25	
Di-isopropyl ether	9.62		ug/L	10.00		96	70-130	2	25	
Ethyl tertiary-butyl ether	9.22		ug/L	10.00		92	70-130	2	25	
Ethylbenzene	9.10		ug/L	10.00		91	70-130	4	25	
Hexachlorobutadiene	9.35		ug/L	10.00		94	70-130	4	25	
Hexachloroethane	9.02		ug/L	10.00		90	70-130	0.6	25	
Isopropylbenzene	9.24		ug/L	10.00		92	70-130	2	25	
Methyl tert-Butyl Ether	9.79		ug/L	10.00		98	70-130	2	25	
Methylene Chloride	9.16		ug/L	10.00		92	70-130	2	25	
Naphthalene	8.85		ug/L	10.00		88	70-130	1	25	
n-Butylbenzene	9.11		ug/L	10.00		91	70-130	3	25	
n-Propylbenzene	9.20		ug/L	10.00		92	70-130	3	25	
sec-Butylbenzene	9.05		ug/L	10.00		90	70-130	2	25	
Styrene	8.99		ug/L	10.00		90	70-130	3	25	
tert-Butylbenzene	9.27		ug/L	10.00		93	70-130	2	25	
Tertiary-amyl methyl ether	9.81		ug/L	10.00		98	70-130	4	25	
Tetrachloroethene	8.30		ug/L	10.00		83	70-130	3	25	
Tetrahydrofuran	8.77		ug/L	10.00		88	70-130	1	25	
Toluene	8.91		ug/L	10.00		89	70-130	4	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA00859 - 5030B										
trans-1,2-Dichloroethene	9.46		ug/L	10.00		95	70-130	3	25	
trans-1,3-Dichloropropene	8.38		ug/L	10.00		84	70-130	2	25	
Trichloroethene	9.00		ug/L	10.00		90	70-130	0.7	25	
Trichlorofluoromethane	10.0		ug/L	10.00		100	70-130	3	25	
Vinyl Acetate	9.32		ug/L	10.00		93	70-130	3	25	
Vinyl Chloride	7.48		ug/L	10.00		75	70-130	0.5	25	
Xylene O	9.24		ug/L	10.00		92	70-130	4	25	
Xylene P,M	18.5		ug/L	20.00		93	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0238*		mg/L	*0.02500*		*95*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0245*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0238*		mg/L	*0.02500*		*95*	*70-130*			
Surrogate: Toluene-d8	*0.0246*		mg/L	*0.02500*		*98*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Blank										
1,1-Biphenyl	ND	0.0100	mg/L							
1,2,4-Trichlorobenzene	ND	0.0100	mg/L							
1,2-Dichlorobenzene	ND	0.0100	mg/L							
1,3-Dichlorobenzene	ND	0.0100	mg/L							
1,4-Dichlorobenzene	ND	0.0100	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.0500	mg/L							
2,4,5-Trichlorophenol	ND	0.0100	mg/L							
2,4,6-Trichlorophenol	ND	0.0100	mg/L							
2,4-Dichlorophenol	ND	0.0100	mg/L							
2,4-Dimethylphenol	ND	0.0500	mg/L							
2,4-Dinitrophenol	ND	0.0500	mg/L							
2,4-Dinitrotoluene	ND	0.0100	mg/L							
2,6-Dinitrotoluene	ND	0.0100	mg/L							
2-Chloronaphthalene	ND	0.0100	mg/L							
2-Chlorophenol	ND	0.0100	mg/L							
2-Methylnaphthalene	ND	0.0100	mg/L							
2-Methylphenol	ND	0.0100	mg/L							
2-Nitroaniline	ND	0.0100	mg/L							
2-Nitrophenol	ND	0.0100	mg/L							
3,3´-Dichlorobenzidine	ND	0.0200	mg/L							
3+4-Methylphenol	ND	0.0200	mg/L							
3-Nitroaniline	ND	0.0100	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.0500	mg/L							
4-Bromophenyl-phenylether	ND	0.0100	mg/L							
4-Chloro-3-Methylphenol	ND	0.0100	mg/L							
4-Chloroaniline	ND	0.0200	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.0100	mg/L							
4-Nitroaniline	ND	0.0100	mg/L							
4-Nitrophenol	ND	0.0500	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Acenaphthene	ND	0.0100	mg/L							
Acenaphthylene	ND	0.0100	mg/L							
Acetophenone	ND	0.0100	mg/L							
Aniline	ND	0.0100	mg/L							
Anthracene	ND	0.0100	mg/L							
Azobenzene	ND	0.0200	mg/L							
Benzo(a)anthracene	ND	0.0100	mg/L							
Benzo(a)pyrene	ND	0.0100	mg/L							
Benzo(b)fluoranthene	ND	0.0100	mg/L							
Benzo(g,h,i)perylene	ND	0.0100	mg/L							
Benzo(k)fluoranthene	ND	0.0100	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.0100	mg/L							
bis(2-Chloroethoxy)methane	ND	0.0100	mg/L							
bis(2-Chloroethyl)ether	ND	0.0100	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.0100	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.0060	mg/L							
Butylbenzylphthalate	ND	0.0100	mg/L							
Carbazole	ND	0.0100	mg/L							
Chrysene	ND	0.0100	mg/L							
Dibenzo(a,h)Anthracene	ND	0.0100	mg/L							
Dibenzofuran	ND	0.0100	mg/L							
Diethylphthalate	ND	0.0100	mg/L							
Dimethylphthalate	ND	0.0100	mg/L							
Di-n-butylphthalate	ND	0.0100	mg/L							
Di-n-octylphthalate	ND	0.0100	mg/L							
Fluoranthene	ND	0.0100	mg/L							
Fluorene	ND	0.0100	mg/L							
Hexachlorobenzene	ND	0.0100	mg/L							
Hexachlorobutadiene	ND	0.0100	mg/L							
Hexachlorocyclopentadiene	ND	0.0250	mg/L							
Hexachloroethane	ND	0.0050	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.0100	mg/L							
Isophorone	ND	0.0100	mg/L							
Naphthalene	ND	0.0100	mg/L							
Nitrobenzene	ND	0.0100	mg/L							
N-Nitrosodimethylamine	ND	0.0100	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.0100	mg/L							
N-nitrosodiphenylamine	ND	0.0100	mg/L							
Pentachlorophenol	ND	0.0500	mg/L							
Phenanthrene	ND	0.0100	mg/L							
Phenol	ND	0.0100	mg/L							
Pyrene	ND	0.0100	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0574*		mg/L	*0.1000*		*57*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Surrogate: 2,4,6-Tribromophenol	*0.0877*		mg/L	*0.1500*		*58*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.100*		mg/L	*0.1500*		*67*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0584*		mg/L	*0.1000*		*58*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0848*		mg/L	*0.1500*		*57*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0690*		mg/L	*0.1000*		*69*	*30-130*			
Surrogate: Phenol-d6	*0.0838*		mg/L	*0.1500*		*56*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0656*		mg/L	*0.1000*		*66*	*30-130*			
LCS										
1,1-Biphenyl	0.0806	0.0100	mg/L	0.1000		81	40-140			
1,2,4-Trichlorobenzene	0.0656	0.0100	mg/L	0.1000		66	40-140			
1,2-Dichlorobenzene	0.0696	0.0100	mg/L	0.1000		70	40-140			
1,3-Dichlorobenzene	0.0682	0.0100	mg/L	0.1000		68	40-140			
1,4-Dichlorobenzene	0.0674	0.0100	mg/L	0.1000		67	40-140			
2,3,4,6-Tetrachlorophenol	0.0813	0.0500	mg/L	0.1000		81	30-130			
2,4,5-Trichlorophenol	0.0841	0.0100	mg/L	0.1000		84	30-130			
2,4,6-Trichlorophenol	0.0814	0.0100	mg/L	0.1000		81	30-130			
2,4-Dichlorophenol	0.0800	0.0100	mg/L	0.1000		80	30-130			
2,4-Dimethylphenol	0.0771	0.0500	mg/L	0.1000		77	30-130			
2,4-Dinitrophenol	0.108	0.0500	mg/L	0.1000		108	30-130			
2,4-Dinitrotoluene	0.0863	0.0100	mg/L	0.1000		86	40-140			
2,6-Dinitrotoluene	0.0849	0.0100	mg/L	0.1000		85	40-140			
2-Chloronaphthalene	0.0759	0.0100	mg/L	0.1000		76	40-140			
2-Chlorophenol	0.0741	0.0100	mg/L	0.1000		74	30-130			
2-Methylnaphthalene	0.0736	0.0100	mg/L	0.1000		74	40-140			
2-Methylphenol	0.0810	0.0100	mg/L	0.1000		81	30-130			
2-Nitroaniline	0.0986	0.0100	mg/L	0.1000		99	40-140			
2-Nitrophenol	0.0713	0.0100	mg/L	0.1000		71	30-130			
3,3´-Dichlorobenzidine	0.0631	0.0200	mg/L	0.1000		63	40-140			
3+4-Methylphenol	0.181	0.0200	mg/L	0.2000		90	30-130			
3-Nitroaniline	0.0834	0.0100	mg/L	0.1000		83	40-140			
4,6-Dinitro-2-Methylphenol	0.105	0.0500	mg/L	0.1000		105	30-130			
4-Bromophenyl-phenylether	0.0831	0.0100	mg/L	0.1000		83	40-140			
4-Chloro-3-Methylphenol	0.0886	0.0100	mg/L	0.1000		89	30-130			
4-Chloroaniline	0.0550	0.0200	mg/L	0.1000		55	40-140			
4-Chloro-phenyl-phenyl ether	0.0837	0.0100	mg/L	0.1000		84	40-140			
4-Nitroaniline	0.0857	0.0100	mg/L	0.1000		86	40-140			
4-Nitrophenol	0.0974	0.0500	mg/L	0.1000		97	30-130			
Acenaphthene	0.0803	0.0100	mg/L	0.1000		80	40-140			
Acenaphthylene	0.0784	0.0100	mg/L	0.1000		78	40-140			
Acetophenone	0.0803	0.0100	mg/L	0.1000		80	40-140			
Aniline	0.0603	0.0100	mg/L	0.1000		60	40-140			
Anthracene	0.0834	0.0100	mg/L	0.1000		83	40-140			
Azobenzene	0.101	0.0200	mg/L	0.1000		101	40-140			
Benzo(a)anthracene	0.0832	0.0100	mg/L	0.1000		83	40-140			
Benzo(a)pyrene	0.0818	0.0100	mg/L	0.1000		82	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Benzo(b)fluoranthene	0.0866	0.0100	mg/L	0.1000		87	40-140			
Benzo(g,h,i)perylene	0.0870	0.0100	mg/L	0.1000		87	40-140			
Benzo(k)fluoranthene	0.0894	0.0100	mg/L	0.1000		89	40-140			
Benzoic Acid	0.119	0.100	mg/L	0.1000		119	40-140			
Benzyl Alcohol	0.0854	0.0100	mg/L	0.1000		85	40-140			
bis(2-Chloroethoxy)methane	0.0811	0.0100	mg/L	0.1000		81	40-140			
bis(2-Chloroethyl)ether	0.0851	0.0100	mg/L	0.1000		85	40-140			
bis(2-chloroisopropyl)Ether	0.0722	0.0100	mg/L	0.1000		72	40-140			
bis(2-Ethylhexyl)phthalate	0.0895	0.0060	mg/L	0.1000		90	40-140			
Butylbenzylphthalate	0.0897	0.0100	mg/L	0.1000		90	40-140			
Carbazole	0.0929	0.0100	mg/L	0.1000		93	40-140			
Chrysene	0.0818	0.0100	mg/L	0.1000		82	40-140			
Dibenzo(a,h)Anthracene	0.0876	0.0100	mg/L	0.1000		88	40-140			
Dibenzofuran	0.0800	0.0100	mg/L	0.1000		80	40-140			
Diethylphthalate	0.0855	0.0100	mg/L	0.1000		85	40-140			
Dimethylphthalate	0.0854	0.0100	mg/L	0.1000		85	40-140			
Di-n-butylphthalate	0.0932	0.0100	mg/L	0.1000		93	40-140			
Di-n-octylphthalate	0.0885	0.0100	mg/L	0.1000		88	40-140			
Fluoranthene	0.0872	0.0100	mg/L	0.1000		87	40-140			
Fluorene	0.0887	0.0100	mg/L	0.1000		89	40-140			
Hexachlorobenzene	0.0804	0.0100	mg/L	0.1000		80	40-140			
Hexachlorobutadiene	0.0609	0.0100	mg/L	0.1000		61	40-140			
Hexachlorocyclopentadiene	0.0543	0.0250	mg/L	0.1000		54	40-140			
Hexachloroethane	0.0698	0.0050	mg/L	0.1000		70	40-140			
Indeno(1,2,3-cd)Pyrene	0.0873	0.0100	mg/L	0.1000		87	40-140			
Isophorone	0.0732	0.0100	mg/L	0.1000		73	40-140			
Naphthalene	0.0713	0.0100	mg/L	0.1000		71	40-140			
Nitrobenzene	0.0777	0.0100	mg/L	0.1000		78	40-140			
N-Nitrosodimethylamine	0.0819	0.0100	mg/L	0.1000		82	40-140			
N-Nitroso-Di-n-Propylamine	0.0870	0.0100	mg/L	0.1000		87	40-140			
N-nitrosodiphenylamine	0.0793	0.0100	mg/L	0.1000		79	40-140			
Pentachlorophenol	0.0906	0.0500	mg/L	0.1000		91	30-130			
Phenanthrene	0.0866	0.0100	mg/L	0.1000		87	40-140			
Phenol	0.0807	0.0100	mg/L	0.1000		81	30-130			
Pyrene	0.0809	0.0100	mg/L	0.1000		81	40-140			
Pyridine	0.0712	0.100	mg/L	0.1000		71	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0701*		mg/L	*0.1000*		*70*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.126*		mg/L	*0.1500*		*84*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.116*		mg/L	*0.1500*		*77*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0774*		mg/L	*0.1000*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*0.106*		mg/L	*0.1500*		*71*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0828*		mg/L	*0.1000*		*83*	*30-130*			
Surrogate: Phenol-d6	*0.123*		mg/L	*0.1500*		*82*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0827*		mg/L	*0.1000*		*83*	*30-130*			
LCS Dup										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
1,1-Biphenyl	0.0728	0.0100	mg/L	0.1000		73	40-140	10	20	
1,2,4-Trichlorobenzene	0.0596	0.0100	mg/L	0.1000		60	40-140	10	20	
1,2-Dichlorobenzene	0.0637	0.0100	mg/L	0.1000		64	40-140	9	20	
1,3-Dichlorobenzene	0.0632	0.0100	mg/L	0.1000		63	40-140	8	20	
1,4-Dichlorobenzene	0.0614	0.0100	mg/L	0.1000		61	40-140	9	20	
2,3,4,6-Tetrachlorophenol	0.0760	0.0500	mg/L	0.1000		76	30-130	7	20	
2,4,5-Trichlorophenol	0.0780	0.0100	mg/L	0.1000		78	30-130	7	20	
2,4,6-Trichlorophenol	0.0736	0.0100	mg/L	0.1000		74	30-130	10	20	
2,4-Dichlorophenol	0.0714	0.0100	mg/L	0.1000		71	30-130	11	20	
2,4-Dimethylphenol	0.0666	0.0500	mg/L	0.1000		67	30-130	15	20	
2,4-Dinitrophenol	0.106	0.0500	mg/L	0.1000		106	30-130	2	20	
2,4-Dinitrotoluene	0.0826	0.0100	mg/L	0.1000		83	40-140	4	20	
2,6-Dinitrotoluene	0.0793	0.0100	mg/L	0.1000		79	40-140	7	20	
2-Chloronaphthalene	0.0694	0.0100	mg/L	0.1000		69	40-140	9	20	
2-Chlorophenol	0.0679	0.0100	mg/L	0.1000		68	30-130	9	20	
2-Methylnaphthalene	0.0659	0.0100	mg/L	0.1000		66	40-140	11	20	
2-Methylphenol	0.0726	0.0100	mg/L	0.1000		73	30-130	11	20	
2-Nitroaniline	0.0932	0.0100	mg/L	0.1000		93	40-140	6	20	
2-Nitrophenol	0.0651	0.0100	mg/L	0.1000		65	30-130	9	20	
3,3´-Dichlorobenzidine	0.0654	0.0200	mg/L	0.1000		65	40-140	4	20	
3+4-Methylphenol	0.161	0.0200	mg/L	0.2000		80	30-130	12	20	
3-Nitroaniline	0.0791	0.0100	mg/L	0.1000		79	40-140	5	20	
4,6-Dinitro-2-Methylphenol	0.104	0.0500	mg/L	0.1000		104	30-130	2	20	
4-Bromophenyl-phenylether	0.0775	0.0100	mg/L	0.1000		78	40-140	7	20	
4-Chloro-3-Methylphenol	0.0801	0.0100	mg/L	0.1000		80	30-130	10	20	
4-Chloroaniline	0.0546	0.0200	mg/L	0.1000		55	40-140	0.6	20	
4-Chloro-phenyl-phenyl ether	0.0761	0.0100	mg/L	0.1000		76	40-140	10	20	
4-Nitroaniline	0.0800	0.0100	mg/L	0.1000		80	40-140	7	20	
4-Nitrophenol	0.0957	0.0500	mg/L	0.1000		96	30-130	2	20	
Acenaphthene	0.0731	0.0100	mg/L	0.1000		73	40-140	9	20	
Acenaphthylene	0.0713	0.0100	mg/L	0.1000		71	40-140	9	20	
Acetophenone	0.0735	0.0100	mg/L	0.1000		73	40-140	9	20	
Aniline	0.0582	0.0100	mg/L	0.1000		58	40-140	4	20	
Anthracene	0.0800	0.0100	mg/L	0.1000		80	40-140	4	20	
Azobenzene	0.0941	0.0200	mg/L	0.1000		94	40-140	7	20	
Benzo(a)anthracene	0.0811	0.0100	mg/L	0.1000		81	40-140	3	20	
Benzo(a)pyrene	0.0802	0.0100	mg/L	0.1000		80	40-140	2	20	
Benzo(b)fluoranthene	0.0861	0.0100	mg/L	0.1000		86	40-140	0.6	20	
Benzo(g,h,i)perylene	0.0856	0.0100	mg/L	0.1000		86	40-140	2	20	
Benzo(k)fluoranthene	0.0852	0.0100	mg/L	0.1000		85	40-140	5	20	
Benzoic Acid	0.100	0.100	mg/L	0.1000		100	40-140	18	20	
Benzyl Alcohol	0.0773	0.0100	mg/L	0.1000		77	40-140	10	20	
bis(2-Chloroethoxy)methane	0.0747	0.0100	mg/L	0.1000		75	40-140	8	20	
bis(2-Chloroethyl)ether	0.0766	0.0100	mg/L	0.1000		77	40-140	10	20	
bis(2-chloroisopropyl)Ether	0.0678	0.0100	mg/L	0.1000		68	40-140	6	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
bis(2-Ethylhexyl)phthalate	0.0884	0.0060	mg/L	0.1000		88	40-140	1	20	
Butylbenzylphthalate	0.0892	0.0100	mg/L	0.1000		89	40-140	0.6	20	
Carbazole	0.0875	0.0100	mg/L	0.1000		87	40-140	6	20	
Chrysene	0.0797	0.0100	mg/L	0.1000		80	40-140	3	20	
Dibenzo(a,h)Anthracene	0.0862	0.0100	mg/L	0.1000		86	40-140	2	20	
Dibenzofuran	0.0742	0.0100	mg/L	0.1000		74	40-140	8	20	
Diethylphthalate	0.0818	0.0100	mg/L	0.1000		82	40-140	4	20	
Dimethylphthalate	0.0797	0.0100	mg/L	0.1000		80	40-140	7	20	
Di-n-butylphthalate	0.0910	0.0100	mg/L	0.1000		91	40-140	2	20	
Di-n-octylphthalate	0.0882	0.0100	mg/L	0.1000		88	40-140	0.4	20	
Fluoranthene	0.0849	0.0100	mg/L	0.1000		85	40-140	3	20	
Fluorene	0.0810	0.0100	mg/L	0.1000		81	40-140	9	20	
Hexachlorobenzene	0.0756	0.0100	mg/L	0.1000		76	40-140	6	20	
Hexachlorobutadiene	0.0546	0.0100	mg/L	0.1000		55	40-140	11	20	
Hexachlorocyclopentadiene	0.0495	0.0250	mg/L	0.1000		49	40-140	9	20	
Hexachloroethane	0.0632	0.0050	mg/L	0.1000		63	40-140	10	20	
Indeno(1,2,3-cd)Pyrene	0.0856	0.0100	mg/L	0.1000		86	40-140	2	20	
Isophorone	0.0657	0.0100	mg/L	0.1000		66	40-140	11	20	
Naphthalene	0.0637	0.0100	mg/L	0.1000		64	40-140	11	20	
Nitrobenzene	0.0716	0.0100	mg/L	0.1000		72	40-140	8	20	
N-Nitrosodimethylamine	0.0739	0.0100	mg/L	0.1000		74	40-140	10	20	
N-Nitroso-Di-n-Propylamine	0.0777	0.0100	mg/L	0.1000		78	40-140	11	20	
N-nitrosodiphenylamine	0.0763	0.0100	mg/L	0.1000		76	40-140	4	20	
Pentachlorophenol	0.0912	0.0500	mg/L	0.1000		91	30-130	0.6	20	
Phenanthrene	0.0818	0.0100	mg/L	0.1000		82	40-140	6	20	
Phenol	0.0727	0.0100	mg/L	0.1000		73	30-130	11	20	
Pyrene	0.0800	0.0100	mg/L	0.1000		80	40-140	1	20	
Pyridine	0.0664	0.100	mg/L	0.1000		66	40-140	7	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0618*		mg/L	*0.1000*		*62*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.103*		mg/L	*0.1500*		*69*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0688*		mg/L	*0.1000*		*69*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0968*		mg/L	*0.1500*		*65*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0751*		mg/L	*0.1000*		*75*	*30-130*			
Surrogate: Phenol-d6	*0.107*		mg/L	*0.1500*		*72*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0803*		mg/L	*0.1000*		*80*	*30-130*			
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CA00829 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.0002	mg/L							
Acenaphthene	ND	0.0002	mg/L							
Acenaphthylene	ND	0.0002	mg/L							
Anthracene	ND	0.0002	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CA00829 - 3520C										
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.0002	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.0002	mg/L							
Fluorene	ND	0.0002	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.0002	mg/L							
Phenanthrene	ND	0.0002	mg/L							
Pyrene	ND	0.0002	mg/L							
LCS										
2-Methylnaphthalene	0.0580	0.0040	mg/L	0.1000		58	40-140			
Acenaphthene	0.0635	0.0040	mg/L	0.1000		64	40-140			
Acenaphthylene	0.0600	0.0040	mg/L	0.1000		60	40-140			
Anthracene	0.0514	0.0040	mg/L	0.1000		51	40-140			
Benzo(a)anthracene	0.0595	0.0010	mg/L	0.1000		60	40-140			
Benzo(a)pyrene	0.0588	0.0010	mg/L	0.1000		59	40-140			
Benzo(b)fluoranthene	0.0624	0.0010	mg/L	0.1000		62	40-140			
Benzo(g,h,i)perylene	0.0648	0.0040	mg/L	0.1000		65	40-140			
Benzo(k)fluoranthene	0.0645	0.0010	mg/L	0.1000		64	40-140			
Chrysene	0.0618	0.0010	mg/L	0.1000		62	40-140			
Dibenzo(a,h)Anthracene	0.0643	0.0010	mg/L	0.1000		64	40-140			
Fluoranthene	0.0533	0.0040	mg/L	0.1000		53	40-140			
Fluorene	0.0663	0.0040	mg/L	0.1000		66	40-140			
Indeno(1,2,3-cd)Pyrene	0.0666	0.0010	mg/L	0.1000		67	40-140			
Naphthalene	0.0542	0.0040	mg/L	0.1000		54	40-140			
Phenanthrene	0.0507	0.0040	mg/L	0.1000		51	40-140			
Pyrene	0.0628	0.0040	mg/L	0.1000		63	40-140			
LCS Dup										
2-Methylnaphthalene	0.0631	0.0040	mg/L	0.1000		63	40-140	8	20	
Acenaphthene	0.0692	0.0040	mg/L	0.1000		69	40-140	9	20	
Acenaphthylene	0.0661	0.0040	mg/L	0.1000		66	40-140	10	20	
Anthracene	0.0596	0.0040	mg/L	0.1000		60	40-140	15	20	
Benzo(a)anthracene	0.0716	0.0010	mg/L	0.1000		72	40-140	18	20	
Benzo(a)pyrene	0.0704	0.0010	mg/L	0.1000		70	40-140	18	20	
Benzo(b)fluoranthene	0.0757	0.0010	mg/L	0.1000		76	40-140	19	20	
Benzo(g,h,i)perylene	0.0746	0.0040	mg/L	0.1000		75	40-140	14	20	
Benzo(k)fluoranthene	0.0755	0.0010	mg/L	0.1000		75	40-140	16	20	
Chrysene	0.0719	0.0010	mg/L	0.1000		72	40-140	15	20	
Dibenzo(a,h)Anthracene	0.0755	0.0010	mg/L	0.1000		75	40-140	16	20	
Fluoranthene	0.0624	0.0040	mg/L	0.1000		62	40-140	16	20	
Fluorene	0.0734	0.0040	mg/L	0.1000		73	40-140	10	20	
Indeno(1,2,3-cd)Pyrene	0.0769	0.0010	mg/L	0.1000		77	40-140	14	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CA00829 - 3520C										
Naphthalene	0.0586	0.0040	mg/L	0.1000		59	40-140	8	20	
Phenanthrene	0.0596	0.0040	mg/L	0.1000		60	40-140	16	20	
Pyrene	0.0752	0.0040	mg/L	0.1000		75	40-140	18	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20A0135

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
IM	Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0135

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

Shipped/Delivered Via: Client

ESS Project ID: 20A0135
Date Received: 1/7/2020
Project Due Date: 1/13/2020
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / NA

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	1138	Yes	No	Yes	VOA Vial	HCl	
1	1139	Yes	No	Yes	VOA Vial	HCl	
1	1140	Yes	No	Yes	VOA Vial	HCl	
1	1165	Yes	N/A	Yes	1L Amber	NP	
1	1166	Yes	N/A	Yes	1L Amber	NP	
1	1167	Yes	N/A	Yes	1L Amber	NP	
1	1168	Yes	N/A	Yes	1L Amber	NP	
1	1169	Yes	N/A	Yes	1L Amber	NP	
2	1141	Yes	No	Yes	VOA Vial	HCl	
2	1142	Yes	No	Yes	VOA Vial	HCl	
2	1143	Yes	No	Yes	VOA Vial	HCl	
2	1170	Yes	N/A	Yes	1L Amber	NP	
2	1171	Yes	N/A	Yes	1L Amber	NP	
2	1172	Yes	N/A	Yes	1L Amber	NP	
2	1173	Yes	N/A	Yes	1L Amber	NP	
2	1174	Yes	N/A	Yes	1L Amber	NP	
3	1144	Yes	No	Yes	VOA Vial	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 20A0135
Date Received: 1/7/2020

3	1145	Yes	No	Yes	VOA Vial	HCl
3	1146	Yes	No	Yes	VOA Vial	HCl
3	1175	Yes	N/A	Yes	1L Amber	NP
3	1176	Yes	N/A	Yes	1L Amber	NP
3	1177	Yes	N/A	Yes	1L Amber	NP
3	1178	Yes	N/A	Yes	1L Amber	NP
3	1179	Yes	N/A	Yes	1L Amber	NP
4	1147	Yes	No	Yes	VOA Vial	HCl
4	1148	Yes	No	Yes	VOA Vial	HCl
4	1149	Yes	No	Yes	VOA Vial	HCl
4	1180	Yes	N/A	Yes	1L Amber	NP
4	1181	Yes	N/A	Yes	1L Amber	NP
4	1182	Yes	N/A	Yes	1L Amber	NP
4	1183	Yes	N/A	Yes	1L Amber	NP
4	1184	Yes	N/A	Yes	1L Amber	NP
5	1150	Yes	No	Yes	VOA Vial	HCl
5	1151	Yes	No	Yes	VOA Vial	HCl
5	1152	Yes	No	Yes	VOA Vial	HCl
5	1185	Yes	N/A	Yes	1L Amber	NP
5	1186	Yes	N/A	Yes	1L Amber	NP
5	1187	Yes	N/A	Yes	1L Amber	NP
5	1188	Yes	N/A	Yes	1L Amber	NP
5	1189	Yes	N/A	Yes	1L Amber	NP
5	1205	Yes	N/A	Yes	250 mL Poly	HNO3
6	1153	Yes	No	Yes	VOA Vial	HCl
6	1154	Yes	No	Yes	VOA Vial	HCl
6	1155	Yes	No	Yes	VOA Vial	HCl
6	1190	Yes	N/A	Yes	1L Amber	NP
6	1191	Yes	N/A	Yes	1L Amber	NP
6	1192	Yes	N/A	Yes	1L Amber	NP
6	1193	Yes	N/A	Yes	1L Amber	NP
6	1194	Yes	N/A	Yes	1L Amber	NP
6	1206	Yes	N/A	Yes	250 mL Poly	HNO3
7	1156	Yes	No	Yes	VOA Vial	HCl
7	1157	Yes	No	Yes	VOA Vial	HCl
7	1158	Yes	No	Yes	VOA Vial	HCl
7	1195	Yes	N/A	Yes	1L Amber	NP
7	1196	Yes	N/A	Yes	1L Amber	NP
7	1197	Yes	N/A	Yes	1L Amber	NP
7	1198	Yes	N/A	Yes	1L Amber	NP
7	1199	Yes	N/A	Yes	1L Amber	NP
7	1207	Yes	N/A	Yes	250 mL Poly	HNO3
8	1159	Yes	No	Yes	VOA Vial	HCl
8	1160	Yes	No	Yes	VOA Vial	HCl
8	1161	Yes	No	Yes	VOA Vial	HCl
8	1200	Yes	N/A	Yes	1L Amber	NP
8	1201	Yes	N/A	Yes	1L Amber	NP
8	1202	Yes	N/A	Yes	1L Amber	NP
8	1203	Yes	N/A	Yes	1L Amber	NP
8	1204	Yes	N/A	Yes	1L Amber	NP
8	1208	Yes	N/A	Yes	250 mL Poly	HNO3
9	1162	Yes	No	Yes	VOA Vial	HCl

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 20A0135
Date Received: 1/7/2020

2nd Review

Were all containers scanned into storage/lab? Initials MA

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: _____ Date & Time: 1/7/20 1951

Reviewed By: _____ Date & Time: 1/7/20 1959

Delivered By: _____ 1/7/20 1959

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

CHAIN OF CUSTODY

ESS Lab # 20A0135

Turn Time: 5 Days

Reporting Limits

Regulatory State

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA GeoEnvironmental
Contact Person: Richard Carlone
Project #: 34648
Project Name: Tnk-Away Landfill
Address:
City: Providence
State: RI
Zip Code: 02909
PO #:
Telephone Number:
FAX Number:
Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	SVOC	TPH	Pesticides	PCBs	Metals*
1	1/7/20	1111	Grab	GW	MW-109	X	X	X	X	X	
2	1/7/20	1107	Grab	GW	MW-110	X	X	X	X	X	
3	1/7/20	1005	Grab	GW	MW-111	X	X	X	X	X	
4	1/7/20	0959	Grab	GW	MW-112	X	X	X	X	X	
5	1/7/20	1447	Grab	GW	MW-1065	X	X	X	X	X	X
6	1/7/20	1507	Grab	GW	MW-106D	X	X	X	X	X	X
7	1/7/20	1441	Grab	GW	MW-3	X	X	X	X	X	X
8	1/7/20	1431	Grab	GW	MW-EA-01	X	X	X	X	X	X
9	1/7/20	0800			Trip Blank	X					
						V	AG	AG	AG	AG	P
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial						7	6	6	6	6	3
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*						2	1	1	1	1	4
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*						3	2	1	1	1	1

Number of Containers per Sample:

Laboratory Use Only

Cooler Present: Yes ○ Drop Off
Seals Intact: Y ○ Pickup
Cooler Temperature: 2.4 2.7°C 3.1 3.3 ice

Sampled by: Rowan Haines / Marra Kelly

Comments: Please specify "Other" preservative and containers types in this space
*Metals: 15 Solid Waste Metals/Mercury
special prices per Kevin Braga

Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
1/7/20 1637	1/7/20 1637		
Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 20A0172

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:49 pm, Jan 20, 2020

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

SAMPLE RECEIPT

The following samples were received on January 08, 2020 for the analyses specified on the enclosed Chain of Custody Record.

Revision 1, January 20, 2020: This report has been revised to include corrected Method Reporting Limits for Mercury.

Lab Number	Sample Name	Matrix	Analysis
20A0172-01	MW-5	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-02	MW-6	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-03	MW-8	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-04	MW-102	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-05	MW-103	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-06	MW-104	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-07	MW-105	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0172-08	Trip Blank	Ground Water	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20A0172

PROJECT NARRATIVE

8081B Organochlorine Pesticides

20A0172-02 **Lower value is used due to matrix interferences (LC).**
gamma-Chlordane [2C]

20A0172-02 **Percent difference between primary and confirmation results exceeds 40% (P).**
gamma-Chlordane [2C]

8082A Polychlorinated Biphenyls (PCB)

20A0172-02 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254 [2C]

20A0172-02 **Surrogate recovery(ies) below lower control limit (S-).**
Decachlorobiphenyl (28% @ 30-150%)

CA00905-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Aroclor 1016 [2C] (21% @ 20%)

8270D Semi-Volatile Organic Compounds

20A0172-05 **Surrogate recovery(ies) below lower control limit (S-).**
p-Terphenyl-d14 (28% @ 30-130%)

C0A0123-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (118% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (132% @ 80-120%)

C0A0123-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzoic Acid (32% @ 20%)

C0A0151-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (110% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (129% @ 80-120%)

C0A0151-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzoic Acid (29% @ 20%)

C0A0151-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Hexachlorobutadiene (21% @ 20%)

C0A0189-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (108% @ 80-120%), 4,6-Dinitro-2-Methylphenol (92% @ 80-120%), Benzoic Acid (101% @ 80-120%)

C0A0189-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrotoluene (21% @ 20%), 4-Chloro-3-Methylphenol (22% @ 20%), 4-Chloroaniline (21% @ 20%)

C0A0220-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (116% @ 80-120%), 4,6-Dinitro-2-Methylphenol (88% @ 80-120%), Benzoic Acid (136% @ 80-120%)

C0A0220-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,3,4,6-Tetrachlorophenol (21% @ 20%), Benzoic Acid (36% @ 20%)

C0A0220-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (28% @ 20%), N-nitrosodiphenylamine (21% @ 20%)

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

8270D(SIM) Semi-Volatile Organic Compounds

20A0172-02	**Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).**
	Chrysene-d12 (28% @ 50-200%), Perylene-d12 (34% @ 50-200%)
C0A0163-CCV1	**Calibration required quadratic regression (Q).**
	2,4,6-Tribromophenol (135% @ 80-120%), Pentachlorophenol (115% @ 80-120%)
C0A0163-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	2,4,6-Tribromophenol (35% @ 20%), Nitrobenzene-d5 (26% @ 20%)
C0A0230-CCV1	**Calibration required quadratic regression (Q).**
	Pentachlorophenol (95% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	NAR	01/10/20 13:33	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 18:53	50	25	CA00934
Barium	**0.370** (0.025)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 21:36	20	40	CA01034
Nickel	ND (0.025)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/13/20 13:12	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934
Zinc	**0.063** (0.025)		6010C		1	KJK	01/09/20 20:47	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 5:25	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 5:25	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 5:25	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*33 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*54 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 15:35		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 15:35		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*32 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1.85** (0.19)		8100M		1	01/10/20 16:50	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*100 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2,4-Trimethylbenzene	**0.0354** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2-Dichlorobenzene	**0.0015** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,4-Dichlorobenzene	**0.0172** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 19:09	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 19:09	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 19:09	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Benzene	**0.0095** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Chlorobenzene	**0.0361** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Chloroethane	**0.160** (0.0200)		8260B		10	01/13/20 19:43	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Diethyl Ether	**0.0211** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Isopropylbenzene	**0.0070** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Naphthalene	**0.0439** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
n-Propylbenzene	**0.0051** (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0054** (0.0050)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 19:09	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 19:09		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*103 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
1,4-Dichlorobenzene	**0.012** (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2-Chloronaphthalene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2-Chlorophenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2-Methylphenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2-Nitroaniline	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
2-Nitrophenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/15/20 16:33	C0A0220	CA00829
3+4-Methylphenol	ND (0.019)		8270D		1	01/15/20 16:33	C0A0220	CA00829
3-Nitroaniline	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4-Chloroaniline	ND (0.019)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4-Nitroaniline	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
4-Nitrophenol	ND (0.047)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Acetophenone	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Aniline	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Azobenzene	ND (0.019)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Benzoic Acid	ND (0.093)		8270D		1	01/15/20 16:33	C0A0220	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Butylbenzylphthalate	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Carbazole	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Dibenzofuran	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Diethylphthalate	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Dimethylphthalate	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Di-n-butylphthalate	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Di-n-octylphthalate	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Hexachlorobutadiene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Hexachloroethane	ND (0.005)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Isophorone	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Nitrobenzene	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Phenol	ND (0.009)		8270D		1	01/15/20 16:33	C0A0220	CA00829
Pyridine	ND (0.093)		8270D		1	01/15/20 16:33	C0A0220	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*78 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*78 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*89 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-130*
Surrogate: 2-Fluorophenol	*77 %*		*15-110*
Surrogate: Nitrobenzene-d5	*81 %*		*30-130*
Surrogate: Phenol-d6	*87 %*		*15-110*
Surrogate: p-Terphenyl-d14	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-5
Date Sampled: 01/08/20 12:36
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/9/20 12:00

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00171** (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Acenaphthene	**0.00025** (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Anthracene	ND (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Chrysene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Fluoranthene	ND (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Fluorene	**0.00021** (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Naphthalene	**0.0233** (0.00187)		8270D SIM		10	01/13/20 16:14	C0A0163	CA00829
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Phenanthrene	**0.00023** (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829
Pyrene	ND (0.00019)		8270D SIM		1	01/10/20 21:31	C0A0163	CA00829

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**0.001** (0.001)		6020A		1	NAR	01/10/20 13:47	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 19:34	50	25	CA00934
Barium	**0.461** (0.025)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Chromium	**0.023** (0.010)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Lead	**0.014** (0.010)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 21:39	20	40	CA01034
Nickel	**0.088** (0.025)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/13/20 13:26	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934
Zinc	**0.051** (0.025)		6010C		1	KJK	01/09/20 21:23	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
alpha-Chlordane [2C]	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Chlordane (Total)	**0.000710** (0.000467)		8081B		1	01/10/20 5:55	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
gamma-Chlordane [2C]	**P, LC 0.000054** (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 5:55	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 5:55	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*58 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1242 [2C]	**0.49** (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1254 [2C]	**P 0.36** (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1260 [2C]	ND (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 15:55		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 15:55		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*28 %*	*S-*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*31 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*50 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*39 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**16.4** (0.19)		8100M		1	01/10/20 17:23	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*101 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2,4-Trimethylbenzene	**0.0146** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2-Dichlorobenzene	**0.0012** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,4-Dichlorobenzene	**0.0113** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
1,4-Dioxane - Screen	**2.67** (2.50)		8260B		10	01/13/20 20:09	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 19:34	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 19:34	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Benzene	**0.0095** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Chlorobenzene	**0.0371** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Chloroethane	**0.0162** (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Diethyl Ether	**0.0240** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Isopropylbenzene	**0.0041** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Naphthalene	**0.0313** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
n-Propylbenzene	**0.0045** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.411** (0.0500)		8260B		10	01/13/20 20:09	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Xylene O	**0.0012** (0.0010)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Xylene P,M	**0.0026** (0.0020)		8260B		1	01/10/20 19:34	C0A0157	CA01018
Xylenes (Total)	**0.00378** (0.00200)		8260B		1	01/10/20 19:34		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*103 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2-Chloronaphthalene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2-Chlorophenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2-Methylphenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2-Nitroaniline	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
2-Nitrophenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/10/20 17:25	C0A0151	CA00829
3+4-Methylphenol	ND (0.019)		8270D		1	01/10/20 17:25	C0A0151	CA00829
3-Nitroaniline	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4-Chloroaniline	ND (0.019)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4-Nitroaniline	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
4-Nitrophenol	ND (0.047)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Acetophenone	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Aniline	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Azobenzene	ND (0.019)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Benzoic Acid	ND (0.093)		8270D		1	01/10/20 17:25	C0A0151	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
bis(2-Ethylhexyl)phthalate	**0.075** (0.006)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Butylbenzylphthalate	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Carbazole	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Dibenzofuran	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Diethylphthalate	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Dimethylphthalate	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Di-n-butylphthalate	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Di-n-octylphthalate	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Hexachlorobutadiene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Hexachloroethane	ND (0.005)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Isophorone	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Nitrobenzene	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Phenol	ND (0.009)		8270D		1	01/10/20 17:25	C0A0151	CA00829
Pyridine	ND (0.093)		8270D		1	01/10/20 17:25	C0A0151	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*69 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*86 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: 2-Fluorophenol	*78 %*		*15-110*
Surrogate: Nitrobenzene-d5	*88 %*		*30-130*
Surrogate: Phenol-d6	*94 %*		*15-110*
Surrogate: p-Terphenyl-d14	*54 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-6
Date Sampled: 01/08/20 11:05
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/9/20 12:00

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00306** (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Acenaphthene	**0.00025** (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Anthracene	**0.00055** (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Chrysene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Fluoranthene	ND (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Fluorene	**0.00031** (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Naphthalene	**0.0147** (0.00187)		8270D SIM		10	01/13/20 17:01	C0A0163	CA00829
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Phenanthrene	**0.00035** (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829
Pyrene	**0.00033** (0.00019)		8270D SIM		1	01/10/20 22:17	C0A0163	CA00829

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	NAR	01/10/20 13:52	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 19:39	50	25	CA00934
Barium	**0.267** (0.025)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 21:41	20	40	CA01034
Nickel	**0.044** (0.025)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/10/20 13:52	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934
Zinc	ND (0.025)		6010C		1	KJK	01/09/20 21:27	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 6:26	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 6:26	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 6:26	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*39 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*48 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*46 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 16:14		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 16:14		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*34 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*49 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**2.12** (0.19)		8100M		1	01/10/20 17:55	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*100 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2,4-Trimethylbenzene	**0.0376** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2-Dichlorobenzene	**0.0012** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,3,5-Trimethylbenzene	**0.0074** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,4-Dichlorobenzene	**0.0063** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 20:00	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 20:00	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 20:00	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Benzene	**0.0191** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 20:00	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Chlorobenzene	**0.0191** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Chloroethane	**0.204** (0.0200)		8260B		10	01/13/20 20:35	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 20:00	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Diethyl Ether	**0.0018** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Ethylbenzene	**0.0106** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Isopropylbenzene	**0.0108** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Naphthalene	**0.0558** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
n-Propylbenzene	**0.0085** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0061** (0.0050)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Xylene O	**0.0143** (0.0010)		8260B		1	01/10/20 20:00	C0A0157	CA01018
Xylene P,M	**0.578** (0.0200)		8260B		10	01/13/20 20:35	C0A0157	CA01018
Xylenes (Total)	**0.592** (0.0200)		8260B		10	01/13/20 20:35		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2-Chloronaphthalene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2-Chlorophenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2-Methylphenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2-Nitroaniline	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
2-Nitrophenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/10/20 17:53	C0A0151	CA00829
3+4-Methylphenol	ND (0.019)		8270D		1	01/10/20 17:53	C0A0151	CA00829
3-Nitroaniline	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4-Chloroaniline	ND (0.019)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4-Nitroaniline	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
4-Nitrophenol	ND (0.047)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Acetophenone	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Aniline	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Azobenzene	ND (0.019)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Benzoic Acid	ND (0.093)		8270D		1	01/10/20 17:53	C0A0151	CA00829

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/9/20 12:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Butylbenzylphthalate	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Carbazole	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Dibenzofuran	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Diethylphthalate	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Dimethylphthalate	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Di-n-butylphthalate	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Di-n-octylphthalate	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Hexachlorobutadiene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Hexachloroethane	ND (0.005)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Isophorone	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Nitrobenzene	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Phenol	ND (0.009)		8270D		1	01/10/20 17:53	C0A0151	CA00829
Pyridine	ND (0.093)		8270D		1	01/10/20 17:53	C0A0151	CA00829

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*58 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*55 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*68 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*58 %*		*30-130*
Surrogate: 2-Fluorophenol	*66 %*		*15-110*
Surrogate: Nitrobenzene-d5	*71 %*		*30-130*
Surrogate: Phenol-d6	*72 %*		*15-110*
Surrogate: p-Terphenyl-d14	*37 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-8
Date Sampled: 01/08/20 10:47
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/9/20 12:00

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00184** (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Acenaphthene	**0.00060** (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Anthracene	ND (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Chrysene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Fluoranthene	ND (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Fluorene	**0.00043** (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Naphthalene	**0.0218** (0.00187)		8270D SIM		10	01/13/20 17:49	C0A0163	CA00829
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Phenanthrene	**0.00039** (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829
Pyrene	ND (0.00019)		8270D SIM		1	01/10/20 23:04	C0A0163	CA00829

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	NAR	01/10/20 13:57	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 19:45	50	25	CA00934
Barium	**0.787** (0.025)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Lead	**0.020** (0.010)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 21:58	20	40	CA01034
Nickel	ND (0.025)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/10/20 13:57	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934
Zinc	**0.042** (0.025)		6010C		1	KJK	01/09/20 21:31	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 6:56	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 6:56	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 6:56	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*59 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*57 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 16:33		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 16:33		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*30 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*45 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1.52** (0.19)		8100M		1	01/10/20 18:27	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*95 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2,4-Trimethylbenzene	**0.0013** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,4-Dichlorobenzene	**0.0016** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 20:26	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 20:26	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 20:26	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Benzene	**0.0147** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Chlorobenzene	**0.0134** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Chloroethane	**0.174** (0.0200)		8260B		10	01/13/20 21:01	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Diethyl Ether	**0.0076** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Isopropylbenzene	**0.0048** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Naphthalene	**0.0386** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
n-Propylbenzene	**0.0016** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0129** (0.0050)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Xylene O	**0.0010** (0.0010)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Xylene P,M	**0.0033** (0.0020)		8260B		1	01/10/20 20:26	C0A0157	CA01018
Xylenes (Total)	**0.00434** (0.00200)		8260B		1	01/10/20 20:26		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*100 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 17:40	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 17:40	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 17:40	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	**0.098** (0.006)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 17:40	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 17:40	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*81 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*96 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*85 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*85 %*		*30-130*
Surrogate: 2-Fluorophenol	*72 %*		*15-110*
Surrogate: Nitrobenzene-d5	*88 %*		*30-130*
Surrogate: Phenol-d6	*85 %*		*15-110*
Surrogate: p-Terphenyl-d14	*60 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-102
Date Sampled: 01/08/20 14:12
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00262** (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Acenaphthene	**0.00144** (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Anthracene	**0.00026** (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Fluoranthene	**0.00019** (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Fluorene	**0.00129** (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Naphthalene	**0.0218** (0.00187)		8270D SIM		10	01/16/20 5:35	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Phenanthrene	**0.00145** (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 17:07	C0A0230	CA01003

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	NAR	01/10/20 14:02	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 19:51	50	25	CA00934
Barium	**0.121** (0.025)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Cadmium	**0.0026** (0.0025)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Copper	**0.029** (0.010)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 22:00	20	40	CA01034
Nickel	**0.110** (0.025)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/10/20 14:02	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934
Zinc	**0.943** (0.025)		6010C		1	KJK	01/09/20 21:34	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 7:27	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 7:27	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 7:27	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 16:52		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 16:52		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*61 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*55 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.53** (0.19)		8100M		1	01/10/20 18:59	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*99 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 17:51	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 17:51	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 17:51	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Benzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Chlorobenzene	**0.0013** (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Chloroethane	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Diethyl Ether	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Naphthalene	**0.0022** (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 17:51	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 17:51		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 18:08	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 18:08	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 18:08	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 18:08	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 18:08	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*76 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*66 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: 2-Fluorophenol	*59 %*		*15-110*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: Phenol-d6	*59 %*		*15-110*
Surrogate: p-Terphenyl-d14	*28 %*	*S-*	*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-103
Date Sampled: 01/08/20 12:53
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-05
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Acenaphthene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Anthracene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Fluoranthene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Fluorene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Naphthalene	**0.00146** (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Phenanthrene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 17:55	C0A0230	CA01003

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**0.001** (0.001)		6020A		1	NAR	01/10/20 14:17	50	25	CA00934
Arsenic	**0.008** (0.002)		7010		1	KJK	01/10/20 19:57	50	25	CA00934
Barium	**0.258** (0.025)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Beryllium	**0.0025** (0.0005)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Chromium	**0.032** (0.010)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Cobalt	**0.013** (0.010)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Copper	**0.051** (0.010)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Lead	**0.044** (0.010)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 22:02	20	40	CA01034
Nickel	**0.043** (0.025)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/10/20 14:17	50	25	CA00934
Vanadium	**0.027** (0.010)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934
Zinc	**0.308** (0.025)		6010C		1	KJK	01/09/20 21:38	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 7:58	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 7:58	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 7:58	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*57 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*52 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*58 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 17:11		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 17:11		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*55 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*52 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.50** (0.19)		8100M		1	01/10/20 19:31	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*82 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,1,1-Trichloroethane	**0.0014** (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,1-Dichloroethane	**0.0178** (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 18:17	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 18:17	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 18:17	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Benzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Chlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Chloroethane	**0.0040** (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Diethyl Ether	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Naphthalene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 18:17	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 18:17		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 18:37	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 18:37	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 18:37	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 18:37	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 18:37	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*94 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*88 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*88 %*		*30-130*
Surrogate: 2-Fluorophenol	*78 %*		*15-110*
Surrogate: Nitrobenzene-d5	*92 %*		*30-130*
Surrogate: Phenol-d6	*89 %*		*15-110*
Surrogate: p-Terphenyl-d14	*58 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-104
Date Sampled: 01/08/20 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-06
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Acenaphthene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Anthracene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Fluoranthene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Fluorene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Naphthalene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Phenanthrene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 18:42	C0A0230	CA01003

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**0.001** (0.001)		6020A		1	NAR	01/10/20 14:22	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/10/20 20:04	50	25	CA00934
Barium	**0.073** (0.025)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Cadmium	**0.0166** (0.0025)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Copper	**0.181** (0.010)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 22:05	20	40	CA01034
Nickel	**0.400** (0.025)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Thallium	ND (0.001)		6020A		1	NAR	01/10/20 14:22	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934
Zinc	**3.47** (0.025)		6010C		1	KJK	01/09/20 21:42	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/9/20 11:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
4,4´-DDE	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
4,4´-DDT	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Aldrin	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
alpha-BHC	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
alpha-Chlordane	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
beta-BHC	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Chlordane (Total)	ND (0.000467)		8081B		1	01/10/20 8:28	C0A0126	CA00820
delta-BHC	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Dieldrin	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Endosulfan I	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Endosulfan II	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Endrin	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Endrin Aldehyde	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Endrin Ketone	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
gamma-Chlordane	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Heptachlor	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Hexachlorobenzene	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Methoxychlor	ND (0.000047)		8081B		1	01/10/20 8:28	C0A0126	CA00820
Toxaphene	ND (0.00121)		8081B		1	01/10/20 8:28	C0A0126	CA00820

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*63 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*54 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/9/20 11:17

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/09/20 17:30		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/09/20 17:30		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*60 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*56 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*59 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*56 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.66** (0.19)		8100M		1	01/10/20 20:03	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 18:43	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 18:43	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 18:43	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Benzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Chlorobenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Chloroethane	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Diethyl Ether	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Naphthalene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 18:43	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 18:43		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 19:06	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 19:06	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 19:06	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 19:06	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 19:06	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*95 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*81 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*
Surrogate: 2-Fluorophenol	*69 %*		*15-110*
Surrogate: Nitrobenzene-d5	*86 %*		*30-130*
Surrogate: Phenol-d6	*84 %*		*15-110*
Surrogate: p-Terphenyl-d14	*65 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-105
Date Sampled: 01/08/20 10:52
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-07
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Acenaphthene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Anthracene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Fluoranthene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Fluorene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Naphthalene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Phenanthrene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 19:29	C0A0230	CA01003

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/08/20 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 12:41	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 12:41	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 12:41	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Benzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/08/20 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Chlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Chloroethane	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Diethyl Ether	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Naphthalene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/08/20 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0172
ESS Laboratory Sample ID: 20A0172-08
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 12:41	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 12:41		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*98 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CA00934 - 3005A/200.7										
Blank										
Barium	ND	0.025	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0025	mg/L							
Chromium	ND	0.010	mg/L							
Cobalt	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
Nickel	ND	0.025	mg/L							
Selenium	ND	0.025	mg/L							
Silver	ND	0.005	mg/L							
Vanadium	ND	0.010	mg/L							
Zinc	ND	0.025	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Thallium	ND	0.001	mg/L							
Blank										
Arsenic	ND	0.002	mg/L							
LCS										
Barium	0.248	0.025	mg/L	0.2500		99	80-120			
Beryllium	0.0246	0.0005	mg/L	0.02500		98	80-120			
Cadmium	0.117	0.0025	mg/L	0.1250		93	80-120			
Chromium	0.246	0.010	mg/L	0.2500		98	80-120			
Cobalt	0.246	0.010	mg/L	0.2500		99	80-120			
Copper	0.261	0.010	mg/L	0.2500		104	80-120			
Lead	0.247	0.010	mg/L	0.2500		99	80-120			
Nickel	0.247	0.025	mg/L	0.2500		99	80-120			
Selenium	0.488	0.025	mg/L	0.5000		98	80-120			
Silver	0.128	0.005	mg/L	0.1250		102	80-120			
Vanadium	0.249	0.010	mg/L	0.2500		100	80-120			
Zinc	0.247	0.025	mg/L	0.2500		99	80-120			
LCS										
Antimony	0.244	0.005	mg/L	0.2500		98	80-120			
Thallium	0.205	0.005	mg/L	0.2500		82	80-120			
LCS										
Arsenic	0.227	0.062	mg/L	0.2500		91	80-120			
LCS Dup										
Barium	0.238	0.025	mg/L	0.2500		95	80-120	4	20	
Beryllium	0.0234	0.0005	mg/L	0.02500		94	80-120	5	20	
Cadmium	0.111	0.0025	mg/L	0.1250		89	80-120	5	20	
Chromium	0.233	0.010	mg/L	0.2500		93	80-120	5	20	
Cobalt	0.235	0.010	mg/L	0.2500		94	80-120	5	20	
Copper	0.248	0.010	mg/L	0.2500		99	80-120	5	20	
Lead	0.236	0.010	mg/L	0.2500		94	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CA00934 - 3005A/200.7										
Nickel	0.236	0.025	mg/L	0.2500		94	80-120	5	20	
Selenium	0.465	0.025	mg/L	0.5000		93	80-120	5	20	
Silver	0.121	0.005	mg/L	0.1250		97	80-120	6	20	
Vanadium	0.237	0.010	mg/L	0.2500		95	80-120	5	20	
Zinc	0.237	0.025	mg/L	0.2500		95	80-120	4	20	
LCS Dup										
Antimony	0.229	0.005	mg/L	0.2500		92	80-120	6	20	
Thallium	0.202	0.005	mg/L	0.2500		81	80-120	1	20	
LCS Dup										
Arsenic	0.215	0.062	mg/L	0.2500		86	80-120	5	20	
Batch CA01034 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00619	0.00020	mg/L	0.006042		102	80-120			
LCS Dup										
Mercury	0.00618	0.00020	mg/L	0.006042		102	80-120	0.1	20	
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
Chlordane (Total)	ND	0.000500	mg/L							
Chlordane (Total) [2C]	ND	0.000500	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							
Endosulfan I [2C]	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CA00820 - 3510C										
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Toxaphene	ND	0.00130	mg/L							
Toxaphene [2C]	ND	0.00130	mg/L							
Surrogate: Decachlorobiphenyl	*0.000232*		mg/L	*0.0002500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000225*		mg/L	*0.0002500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000223*		mg/L	*0.0002500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000208*		mg/L	*0.0002500*		*83*	*30-150*			
LCS										
4,4´-DDD	0.000270	0.000050	mg/L	0.0002500		108	40-140			
4,4´-DDD [2C]	0.000259	0.000050	mg/L	0.0002500		104	40-140			
4,4´-DDE	0.000267	0.000050	mg/L	0.0002500		107	40-140			
4,4´-DDE [2C]	0.000263	0.000050	mg/L	0.0002500		105	40-140			
4,4´-DDT	0.000285	0.000050	mg/L	0.0002500		114	40-140			
4,4´-DDT [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140			
Aldrin	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Aldrin [2C]	0.000219	0.000050	mg/L	0.0002500		88	40-140			
alpha-BHC	0.000240	0.000050	mg/L	0.0002500		96	40-140			
alpha-BHC [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140			
alpha-Chlordane	0.000227	0.000050	mg/L	0.0002500		91	40-140			
alpha-Chlordane [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
beta-BHC	0.000244	0.000050	mg/L	0.0002500		98	40-140			
beta-BHC [2C]	0.000240	0.000050	mg/L	0.0002500		96	40-140			
delta-BHC	0.000199	0.000050	mg/L	0.0002500		80	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
delta-BHC [2C]	0.000193	0.000050	mg/L	0.0002500		77	40-140			
Dieldrin	0.000251	0.000050	mg/L	0.0002500		100	40-140			
Dieldrin [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140			
Endosulfan I	0.000225	0.000050	mg/L	0.0002500		90	40-140			
Endosulfan I [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Endosulfan II	0.000239	0.000050	mg/L	0.0002500		95	40-140			
Endosulfan II [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140			
Endosulfan Sulfate	0.000257	0.000050	mg/L	0.0002500		103	40-140			
Endosulfan Sulfate [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140			
Endrin	0.000251	0.000050	mg/L	0.0002500		101	40-140			
Endrin [2C]	0.000244	0.000050	mg/L	0.0002500		97	40-140			
Endrin Aldehyde	0.000240	0.000050	mg/L	0.0002500		96	40-140			
Endrin Aldehyde [2C]	0.000258	0.000050	mg/L	0.0002500		103	40-140			
Endrin Ketone	0.000271	0.000050	mg/L	0.0002500		109	40-140			
Endrin Ketone [2C]	0.000264	0.000050	mg/L	0.0002500		105	40-140			
gamma-BHC (Lindane)	0.000243	0.000050	mg/L	0.0002500		97	40-140			
gamma-BHC (Lindane) [2C]	0.000238	0.000050	mg/L	0.0002500		95	40-140			
gamma-Chlordane	0.000234	0.000050	mg/L	0.0002500		94	40-140			
gamma-Chlordane [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140			
Heptachlor	0.000251	0.000050	mg/L	0.0002500		101	40-140			
Heptachlor [2C]	0.000245	0.000050	mg/L	0.0002500		98	40-140			
Heptachlor Epoxide	0.000249	0.000050	mg/L	0.0002500		100	40-140			
Heptachlor Epoxide [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140			
Hexachlorobenzene	0.000233	0.000050	mg/L	0.0002500		93	40-140			
Hexachlorobenzene [2C]	0.000229	0.000050	mg/L	0.0002500		92	40-140			
Methoxychlor	0.000298	0.000050	mg/L	0.0002500		119	40-140			
Methoxychlor [2C]	0.000279	0.000050	mg/L	0.0002500		112	40-140			
Surrogate: Decachlorobiphenyl	*0.000242*		mg/L	*0.0002500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000237*		mg/L	*0.0002500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000223*		mg/L	*0.0002500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000212*		mg/L	*0.0002500*		*85*	*30-150*			
LCS Dup										
4,4´-DDD	0.000277	0.000050	mg/L	0.0002500		111	40-140	3	20	
4,4´-DDD [2C]	0.000260	0.000050	mg/L	0.0002500		104	40-140	0.3	20	
4,4´-DDE	0.000267	0.000050	mg/L	0.0002500		107	40-140	0.2	20	
4,4´-DDE [2C]	0.000262	0.000050	mg/L	0.0002500		105	40-140	0.2	20	
4,4´-DDT	0.000288	0.000050	mg/L	0.0002500		115	40-140	1	20	
4,4´-DDT [2C]	0.000278	0.000050	mg/L	0.0002500		111	40-140	0.7	20	
Aldrin	0.000229	0.000050	mg/L	0.0002500		91	40-140	2	20	
Aldrin [2C]	0.000224	0.000050	mg/L	0.0002500		90	40-140	2	20	
alpha-BHC	0.000237	0.000050	mg/L	0.0002500		95	40-140	1	20	
alpha-BHC [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	2	20	
alpha-Chlordane	0.000232	0.000050	mg/L	0.0002500		93	40-140	2	20	
alpha-Chlordane [2C]	0.000226	0.000050	mg/L	0.0002500		90	40-140	1	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA00820 - 3510C										
beta-BHC	0.000242	0.000050	mg/L	0.0002500		97	40-140	0.9	20	
beta-BHC [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140	1	20	
delta-BHC	0.000195	0.000050	mg/L	0.0002500		78	40-140	2	20	
delta-BHC [2C]	0.000192	0.000050	mg/L	0.0002500		77	40-140	0.8	20	
Dieldrin	0.000254	0.000050	mg/L	0.0002500		102	40-140	1	20	
Dieldrin [2C]	0.000246	0.000050	mg/L	0.0002500		98	40-140	1	20	
Endosulfan I	0.000228	0.000050	mg/L	0.0002500		91	40-140	1	20	
Endosulfan I [2C]	0.000226	0.000050	mg/L	0.0002500		91	40-140	1	20	
Endosulfan II	0.000249	0.000050	mg/L	0.0002500		100	40-140	4	20	
Endosulfan II [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140	2	20	
Endosulfan Sulfate	0.000261	0.000050	mg/L	0.0002500		104	40-140	1	20	
Endosulfan Sulfate [2C]	0.000250	0.000050	mg/L	0.0002500		100	40-140	0.7	20	
Endrin	0.000256	0.000050	mg/L	0.0002500		102	40-140	2	20	
Endrin [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140	2	20	
Endrin Aldehyde	0.000249	0.000050	mg/L	0.0002500		100	40-140	4	20	
Endrin Aldehyde [2C]	0.000268	0.000050	mg/L	0.0002500		107	40-140	4	20	
Endrin Ketone	0.000275	0.000050	mg/L	0.0002500		110	40-140	1	20	
Endrin Ketone [2C]	0.000267	0.000050	mg/L	0.0002500		107	40-140	1	20	
gamma-BHC (Lindane)	0.000243	0.000050	mg/L	0.0002500		97	40-140	0.01	20	
gamma-BHC (Lindane) [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	0.3	20	
gamma-Chlordane	0.000237	0.000050	mg/L	0.0002500		95	40-140	1	20	
gamma-Chlordane [2C]	0.000229	0.000050	mg/L	0.0002500		91	40-140	1	20	
Heptachlor	0.000254	0.000050	mg/L	0.0002500		102	40-140	1	20	
Heptachlor [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140	1	20	
Heptachlor Epoxide	0.000251	0.000050	mg/L	0.0002500		100	40-140	0.6	20	
Heptachlor Epoxide [2C]	0.000244	0.000050	mg/L	0.0002500		98	40-140	0.9	20	
Hexachlorobenzene	0.000232	0.000050	mg/L	0.0002500		93	40-140	0.7	20	
Hexachlorobenzene [2C]	0.000229	0.000050	mg/L	0.0002500		92	40-140	0.2	20	
Methoxychlor	0.000290	0.000050	mg/L	0.0002500		116	40-140	2	20	
Methoxychlor [2C]	0.000279	0.000050	mg/L	0.0002500		112	40-140	0.2	20	
Surrogate: Decachlorobiphenyl	*0.000233*		mg/L	*0.0002500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000228*		mg/L	*0.0002500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000219*		mg/L	*0.0002500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000208*		mg/L	*0.0002500*		*83*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CA00905 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CA00905 - 3510C										
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							
Surrogate: Decachlorobiphenyl	*0.0363*		ug/L	*0.05000*		*73*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0357*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0257*		ug/L	*0.05000*		*51*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0259*		ug/L	*0.05000*		*52*	*30-150*			
LCS										
Aroclor 1016	0.73	0.10	ug/L	1.000		73	40-140			
Aroclor 1016 [2C]	0.68	0.10	ug/L	1.000		68	40-140			
Aroclor 1260	0.85	0.10	ug/L	1.000		85	40-140			
Aroclor 1260 [2C]	0.79	0.10	ug/L	1.000		79	40-140			
Surrogate: Decachlorobiphenyl	*0.0410*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0394*		ug/L	*0.05000*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0296*		ug/L	*0.05000*		*59*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0261*		ug/L	*0.05000*		*52*	*30-150*			
LCS Dup										
Aroclor 1016	0.90	0.10	ug/L	1.000		90	40-140	20	20	
Aroclor 1016 [2C]	0.84	0.10	ug/L	1.000		84	40-140	21	20	D+
Aroclor 1260	0.97	0.10	ug/L	1.000		97	40-140	14	20	
Aroclor 1260 [2C]	0.90	0.10	ug/L	1.000		90	40-140	13	20	
Surrogate: Decachlorobiphenyl	*0.0447*		ug/L	*0.05000*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0434*		ug/L	*0.05000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0360*		ug/L	*0.05000*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0315*		ug/L	*0.05000*		*63*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CA01001 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CA01001 - 3510C										
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.0989*		mg/L	*0.1000*		*99*	*40-140*			
LCS										
Decane (C10)	0.036	0.005	mg/L	0.05000		72	40-140			
Docosane (C22)	0.045	0.005	mg/L	0.05000		90	40-140			
Dodecane (C12)	0.041	0.005	mg/L	0.05000		83	40-140			
Eicosane (C20)	0.045	0.005	mg/L	0.05000		89	40-140			
Hexacosane (C26)	0.045	0.005	mg/L	0.05000		90	40-140			
Hexadecane (C16)	0.044	0.005	mg/L	0.05000		89	40-140			
Nonadecane (C19)	0.049	0.005	mg/L	0.05000		99	40-140			
Nonane (C9)	0.033	0.005	mg/L	0.05000		65	30-140			
Octacosane (C28)	0.046	0.005	mg/L	0.05000		92	40-140			
Octadecane (C18)	0.044	0.005	mg/L	0.05000		88	40-140			
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		92	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140			
Total Petroleum Hydrocarbons	0.615	0.20	mg/L	0.7000		88	40-140			
Triacontane (C30)	0.046	0.005	mg/L	0.05000		92	40-140			
Surrogate: O-Terphenyl	*0.0931*		mg/L	*0.1000*		*93*	*40-140*			
LCS Dup										
Decane (C10)	0.037	0.005	mg/L	0.05000		75	40-140	4	25	
Docosane (C22)	0.046	0.005	mg/L	0.05000		92	40-140	2	25	
Dodecane (C12)	0.042	0.005	mg/L	0.05000		85	40-140	2	25	
Eicosane (C20)	0.046	0.005	mg/L	0.05000		91	40-140	2	25	
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		92	40-140	1	25	
Hexadecane (C16)	0.045	0.005	mg/L	0.05000		90	40-140	1	25	
Nonadecane (C19)	0.050	0.005	mg/L	0.05000		100	40-140	2	25	
Nonane (C9)	0.035	0.005	mg/L	0.05000		70	30-140	7	25	
Octacosane (C28)	0.047	0.005	mg/L	0.05000		94	40-140	1	25	
Octadecane (C18)	0.045	0.005	mg/L	0.05000		90	40-140	2	25	
Tetracosane (C24)	0.047	0.005	mg/L	0.05000		93	40-140	1	25	
Tetradecane (C14)	0.044	0.005	mg/L	0.05000		88	40-140	2	25	
Total Petroleum Hydrocarbons	0.629	0.20	mg/L	0.7000		90	40-140	2	25	
Triacontane (C30)	0.047	0.005	mg/L	0.05000		94	40-140	2	25	
Surrogate: O-Terphenyl	*0.0937*		mg/L	*0.1000*		*94*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0245*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0244*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130			
1,1,1-Trichloroethane	9.84		ug/L	10.00		98	70-130			
1,1,2,2-Tetrachloroethane	9.62		ug/L	10.00		96	70-130			
1,1,2-Trichloroethane	9.75		ug/L	10.00		98	70-130			
1,1-Dichloroethane	10.1		ug/L	10.00		101	70-130			
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130			
1,1-Dichloropropene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichloropropane	9.43		ug/L	10.00		94	70-130			
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
1,2,4-Trimethylbenzene	10.4		ug/L	10.00		104	70-130			
1,2-Dibromo-3-Chloropropane	9.11		ug/L	10.00		91	70-130			
1,2-Dibromoethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichlorobenzene	9.87		ug/L	10.00		99	70-130			
1,2-Dichloroethane	9.90		ug/L	10.00		99	70-130			
1,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
1,3,5-Trimethylbenzene	10.4		ug/L	10.00		104	70-130			
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,3-Dichloropropane	10.4		ug/L	10.00		104	70-130			
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,4-Dioxane - Screen	201		ug/L	200.0		100	0-332			
1-Chlorohexane	9.96		ug/L	10.00		100	70-130			
2,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
2-Butanone	48.9		ug/L	50.00		98	70-130			
2-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
2-Hexanone	48.1		ug/L	50.00		96	70-130			
4-Chlorotoluene	10.3		ug/L	10.00		103	70-130			
4-Isopropyltoluene	10.2		ug/L	10.00		102	70-130			
4-Methyl-2-Pentanone	48.8		ug/L	50.00		98	70-130			
Acetone	44.7		ug/L	50.00		89	70-130			
Benzene	10.0		ug/L	10.00		100	70-130			
Bromobenzene	10.2		ug/L	10.00		102	70-130			
Bromochloromethane	10.0		ug/L	10.00		100	70-130			
Bromodichloromethane	9.56		ug/L	10.00		96	70-130			
Bromoform	10.3		ug/L	10.00		103	70-130			
Bromomethane	10.5		ug/L	10.00		105	70-130			
Carbon Disulfide	10.2		ug/L	10.00		102	70-130			
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	9.29		ug/L	10.00		93	70-130			
Chloroform	10.2		ug/L	10.00		102	70-130			
Chloromethane	8.74		ug/L	10.00		87	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	9.77		ug/L	10.00		98	70-130			
Dibromochloromethane	9.27		ug/L	10.00		93	70-130			
Dibromomethane	10.2		ug/L	10.00		102	70-130			
Dichlorodifluoromethane	8.39		ug/L	10.00		84	70-130			
Diethyl Ether	10.1		ug/L	10.00		101	70-130			
Di-isopropyl ether	11.2		ug/L	10.00		112	70-130			
Ethyl tertiary-butyl ether	10.6		ug/L	10.00		106	70-130			
Ethylbenzene	9.97		ug/L	10.00		100	70-130			
Hexachlorobutadiene	10.5		ug/L	10.00		105	70-130			
Hexachloroethane	10.2		ug/L	10.00		102	70-130			
Isopropylbenzene	10.2		ug/L	10.00		102	70-130			
Methyl tert-Butyl Ether	10.9		ug/L	10.00		109	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
Methylene Chloride	10.1		ug/L	10.00		101	70-130			
Naphthalene	9.52		ug/L	10.00		95	70-130			
n-Butylbenzene	10.5		ug/L	10.00		105	70-130			
n-Propylbenzene	10.1		ug/L	10.00		101	70-130			
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Styrene	10.2		ug/L	10.00		102	70-130			
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Tertiary-amyl methyl ether	10.9		ug/L	10.00		109	70-130			
Tetrachloroethene	8.76		ug/L	10.00		88	70-130			
Tetrahydrofuran	9.27		ug/L	10.00		93	70-130			
Toluene	9.98		ug/L	10.00		100	70-130			
trans-1,2-Dichloroethene	9.80		ug/L	10.00		98	70-130			
trans-1,3-Dichloropropene	9.42		ug/L	10.00		94	70-130			
Trichloroethene	10.0		ug/L	10.00		100	70-130			
Trichlorofluoromethane	10.5		ug/L	10.00		105	70-130			
Vinyl Acetate	11.9		ug/L	10.00		119	70-130			
Vinyl Chloride	8.60		ug/L	10.00		86	70-130			
Xylene O	10.1		ug/L	10.00		101	70-130			
Xylene P,M	20.1		ug/L	20.00		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0246*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130	3	25	
1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130	6	25	
1,1,2,2-Tetrachloroethane	9.80		ug/L	10.00		98	70-130	2	25	
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130	4	25	
1,1-Dichloroethane	10.6		ug/L	10.00		106	70-130	5	25	
1,1-Dichloroethene	10.9		ug/L	10.00		109	70-130	5	25	
1,1-Dichloropropene	10.5		ug/L	10.00		105	70-130	3	25	
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130	0.3	25	
1,2,3-Trichloropropane	9.45		ug/L	10.00		94	70-130	0.2	25	
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130	0.2	25	
1,2,4-Trimethylbenzene	10.6		ug/L	10.00		106	70-130	1	25	
1,2-Dibromo-3-Chloropropane	9.05		ug/L	10.00		90	70-130	0.7	25	
1,2-Dibromoethane	10.2		ug/L	10.00		102	70-130	2	25	
1,2-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	3	25	
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130	2	25	
1,2-Dichloropropane	10.2		ug/L	10.00		102	70-130	2	25	
1,3,5-Trimethylbenzene	10.5		ug/L	10.00		105	70-130	0.9	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	1	25	
1,3-Dichloropropane	10.3		ug/L	10.00		103	70-130	0.5	25	
1,4-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	1	25	
1,4-Dioxane - Screen	208		ug/L	200.0		104	0-332	4	200	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
1-Chlorohexane	10.2		ug/L	10.00		102	70-130	2	25	
2,2-Dichloropropane	10.2		ug/L	10.00		102	70-130	2	25	
2-Butanone	50.6		ug/L	50.00		101	70-130	3	25	
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130	0.8	25	
2-Hexanone	48.2		ug/L	50.00		96	70-130	0.2	25	
4-Chlorotoluene	10.4		ug/L	10.00		104	70-130	2	25	
4-Isopropyltoluene	10.3		ug/L	10.00		103	70-130	0.6	25	
4-Methyl-2-Pentanone	49.9		ug/L	50.00		100	70-130	2	25	
Acetone	46.3		ug/L	50.00		93	70-130	4	25	
Benzene	10.4		ug/L	10.00		104	70-130	3	25	
Bromobenzene	10.5		ug/L	10.00		105	70-130	4	25	
Bromochloromethane	10.1		ug/L	10.00		101	70-130	0.8	25	
Bromodichloromethane	9.84		ug/L	10.00		98	70-130	3	25	
Bromoform	10.5		ug/L	10.00		105	70-130	2	25	
Bromomethane	10.6		ug/L	10.00		106	70-130	0.5	25	
Carbon Disulfide	10.6		ug/L	10.00		106	70-130	4	25	
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130	4	25	
Chlorobenzene	10.4		ug/L	10.00		104	70-130	3	25	
Chloroethane	9.75		ug/L	10.00		98	70-130	5	25	
Chloroform	10.6		ug/L	10.00		106	70-130	3	25	
Chloromethane	9.10		ug/L	10.00		91	70-130	4	25	
cis-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130	4	25	
cis-1,3-Dichloropropene	9.90		ug/L	10.00		99	70-130	1	25	
Dibromochloromethane	9.29		ug/L	10.00		93	70-130	0.2	25	
Dibromomethane	10.3		ug/L	10.00		103	70-130	1	25	
Dichlorodifluoromethane	8.66		ug/L	10.00		87	70-130	3	25	
Diethyl Ether	10.4		ug/L	10.00		104	70-130	4	25	
Di-isopropyl ether	11.4		ug/L	10.00		114	70-130	3	25	
Ethyl tertiary-butyl ether	10.8		ug/L	10.00		108	70-130	2	25	
Ethylbenzene	10.2		ug/L	10.00		102	70-130	2	25	
Hexachlorobutadiene	10.2		ug/L	10.00		102	70-130	3	25	
Hexachloroethane	10.3		ug/L	10.00		103	70-130	1	25	
Isopropylbenzene	10.3		ug/L	10.00		103	70-130	1	25	
Methyl tert-Butyl Ether	11.2		ug/L	10.00		112	70-130	3	25	
Methylene Chloride	10.5		ug/L	10.00		105	70-130	4	25	
Naphthalene	9.56		ug/L	10.00		96	70-130	0.4	25	
n-Butylbenzene	10.6		ug/L	10.00		106	70-130	0.5	25	
n-Propylbenzene	10.2		ug/L	10.00		102	70-130	0.6	25	
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130	0.3	25	
Styrene	10.4		ug/L	10.00		104	70-130	2	25	
tert-Butylbenzene	10.3		ug/L	10.00		103	70-130	1	25	
Tertiary-amyl methyl ether	11.3		ug/L	10.00		113	70-130	3	25	
Tetrachloroethene	8.88		ug/L	10.00		89	70-130	1	25	
Tetrahydrofuran	9.65		ug/L	10.00		96	70-130	4	25	
Toluene	10.4		ug/L	10.00		104	70-130	5	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
trans-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130	7	25	
trans-1,3-Dichloropropene	9.73		ug/L	10.00		97	70-130	3	25	
Trichloroethene	10.3		ug/L	10.00		103	70-130	3	25	
Trichlorofluoromethane	10.8		ug/L	10.00		108	70-130	3	25	
Vinyl Acetate	11.9		ug/L	10.00		119	70-130	0.5	25	
Vinyl Chloride	8.97		ug/L	10.00		90	70-130	4	25	
Xylene O	10.4		ug/L	10.00		104	70-130	3	25	
Xylene P,M	20.6		ug/L	20.00		103	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0252*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.002	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0574*		mg/L	*0.1000*		*57*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.0877*		mg/L	*0.1500*		*58*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.100*		mg/L	*0.1500*		*67*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0584*		mg/L	*0.1000*		*58*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0848*		mg/L	*0.1500*		*57*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0690*		mg/L	*0.1000*		*69*	*30-130*			
Surrogate: Phenol-d6	*0.0838*		mg/L	*0.1500*		*56*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0656*		mg/L	*0.1000*		*66*	*30-130*			
LCS										
1,1-Biphenyl	0.081	0.010	mg/L	0.1000		81	40-140			
1,2,4-Trichlorobenzene	0.066	0.010	mg/L	0.1000		66	40-140			
1,2-Dichlorobenzene	0.070	0.010	mg/L	0.1000		70	40-140			
1,3-Dichlorobenzene	0.068	0.010	mg/L	0.1000		68	40-140			
1,4-Dichlorobenzene	0.067	0.010	mg/L	0.1000		67	40-140			
2,3,4,6-Tetrachlorophenol	0.081	0.050	mg/L	0.1000		81	40-140			
2,4,5-Trichlorophenol	0.084	0.010	mg/L	0.1000		84	30-130			
2,4,6-Trichlorophenol	0.081	0.010	mg/L	0.1000		81	30-130			
2,4-Dichlorophenol	0.080	0.010	mg/L	0.1000		80	30-130			
2,4-Dimethylphenol	0.077	0.050	mg/L	0.1000		77	30-130			
2,4-Dinitrophenol	0.108	0.050	mg/L	0.1000		108	30-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
2,4-Dinitrotoluene	0.086	0.010	mg/L	0.1000		86	40-140			
2,6-Dinitrotoluene	0.085	0.010	mg/L	0.1000		85	40-140			
2-Chloronaphthalene	0.076	0.010	mg/L	0.1000		76	40-140			
2-Chlorophenol	0.074	0.010	mg/L	0.1000		74	30-130			
2-Methylphenol	0.081	0.010	mg/L	0.1000		81	30-130			
2-Nitroaniline	0.099	0.010	mg/L	0.1000		99	40-140			
2-Nitrophenol	0.071	0.010	mg/L	0.1000		71	30-130			
3,3´-Dichlorobenzidine	0.063	0.020	mg/L	0.1000		63	40-140			
3+4-Methylphenol	0.181	0.020	mg/L	0.2000		90	30-130			
3-Nitroaniline	0.083	0.010	mg/L	0.1000		83	40-140			
4,6-Dinitro-2-Methylphenol	0.105	0.050	mg/L	0.1000		105	30-130			
4-Bromophenyl-phenylether	0.083	0.010	mg/L	0.1000		83	40-140			
4-Chloro-3-Methylphenol	0.089	0.010	mg/L	0.1000		89	30-130			
4-Chloroaniline	0.055	0.020	mg/L	0.1000		55	40-140			
4-Chloro-phenyl-phenyl ether	0.084	0.010	mg/L	0.1000		84	40-140			
4-Nitroaniline	0.086	0.010	mg/L	0.1000		86	40-140			
4-Nitrophenol	0.097	0.050	mg/L	0.1000		97	30-130			
Acetophenone	0.080	0.010	mg/L	0.1000		80	40-140			
Aniline	0.060	0.010	mg/L	0.1000		60	40-140			
Azobenzene	0.101	0.020	mg/L	0.1000		101	40-140			
Benzoic Acid	0.119	0.100	mg/L	0.1000		119	40-140			
Benzyl Alcohol	0.085	0.010	mg/L	0.1000		85	40-140			
bis(2-Chloroethoxy)methane	0.081	0.010	mg/L	0.1000		81	40-140			
bis(2-Chloroethyl)ether	0.085	0.010	mg/L	0.1000		85	40-140			
bis(2-chloroisopropyl)Ether	0.072	0.010	mg/L	0.1000		72	40-140			
bis(2-Ethylhexyl)phthalate	0.090	0.002	mg/L	0.1000		90	40-140			
Butylbenzylphthalate	0.090	0.010	mg/L	0.1000		90	40-140			
Carbazole	0.093	0.010	mg/L	0.1000		93	40-140			
Dibenzofuran	0.080	0.010	mg/L	0.1000		80	40-140			
Diethylphthalate	0.085	0.010	mg/L	0.1000		85	40-140			
Dimethylphthalate	0.085	0.010	mg/L	0.1000		85	40-140			
Di-n-butylphthalate	0.093	0.010	mg/L	0.1000		93	40-140			
Di-n-octylphthalate	0.088	0.010	mg/L	0.1000		88	40-140			
Hexachlorobutadiene	0.061	0.010	mg/L	0.1000		61	40-140			
Hexachlorocyclopentadiene	0.054	0.025	mg/L	0.1000		54	40-140			
Hexachloroethane	0.070	0.005	mg/L	0.1000		70	40-140			
Isophorone	0.073	0.010	mg/L	0.1000		73	40-140			
Nitrobenzene	0.078	0.010	mg/L	0.1000		78	40-140			
N-Nitrosodimethylamine	0.082	0.010	mg/L	0.1000		82	40-140			
N-Nitroso-Di-n-Propylamine	0.087	0.010	mg/L	0.1000		87	40-140			
N-nitrosodiphenylamine	0.079	0.010	mg/L	0.1000		79	40-140			
Phenol	0.081	0.010	mg/L	0.1000		81	30-130			
Pyridine	0.071	0.100	mg/L	0.1000		71	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0701*		mg/L	*0.1000*		*70*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.126*		mg/L	*0.1500*		*84*	*15-110*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Surrogate: 2-Chlorophenol-d4	*0.116*		mg/L	*0.1500*		*77*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0774*		mg/L	*0.1000*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*0.106*		mg/L	*0.1500*		*71*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0828*		mg/L	*0.1000*		*83*	*30-130*			
Surrogate: Phenol-d6	*0.123*		mg/L	*0.1500*		*82*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0827*		mg/L	*0.1000*		*83*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.073	0.010	mg/L	0.1000		73	40-140	10	20	
1,2,4-Trichlorobenzene	0.060	0.010	mg/L	0.1000		60	40-140	10	20	
1,2-Dichlorobenzene	0.064	0.010	mg/L	0.1000		64	40-140	9	20	
1,3-Dichlorobenzene	0.063	0.010	mg/L	0.1000		63	40-140	8	20	
1,4-Dichlorobenzene	0.061	0.010	mg/L	0.1000		61	40-140	9	20	
2,3,4,6-Tetrachlorophenol	0.076	0.050	mg/L	0.1000		76	40-140	7	20	
2,4,5-Trichlorophenol	0.078	0.010	mg/L	0.1000		78	30-130	7	20	
2,4,6-Trichlorophenol	0.074	0.010	mg/L	0.1000		74	30-130	10	20	
2,4-Dichlorophenol	0.071	0.010	mg/L	0.1000		71	30-130	11	20	
2,4-Dimethylphenol	0.067	0.050	mg/L	0.1000		67	30-130	15	20	
2,4-Dinitrophenol	0.106	0.050	mg/L	0.1000		106	30-130	2	20	
2,4-Dinitrotoluene	0.083	0.010	mg/L	0.1000		83	40-140	4	20	
2,6-Dinitrotoluene	0.079	0.010	mg/L	0.1000		79	40-140	7	20	
2-Chloronaphthalene	0.069	0.010	mg/L	0.1000		69	40-140	9	20	
2-Chlorophenol	0.068	0.010	mg/L	0.1000		68	30-130	9	20	
2-Methylphenol	0.073	0.010	mg/L	0.1000		73	30-130	11	20	
2-Nitroaniline	0.093	0.010	mg/L	0.1000		93	40-140	6	20	
2-Nitrophenol	0.065	0.010	mg/L	0.1000		65	30-130	9	20	
3,3´-Dichlorobenzidine	0.065	0.020	mg/L	0.1000		65	40-140	4	20	
3+4-Methylphenol	0.161	0.020	mg/L	0.2000		80	30-130	12	20	
3-Nitroaniline	0.079	0.010	mg/L	0.1000		79	40-140	5	20	
4,6-Dinitro-2-Methylphenol	0.104	0.050	mg/L	0.1000		104	30-130	2	20	
4-Bromophenyl-phenylether	0.078	0.010	mg/L	0.1000		78	40-140	7	20	
4-Chloro-3-Methylphenol	0.080	0.010	mg/L	0.1000		80	30-130	10	20	
4-Chloroaniline	0.055	0.020	mg/L	0.1000		55	40-140	0.6	20	
4-Chloro-phenyl-phenyl ether	0.076	0.010	mg/L	0.1000		76	40-140	10	20	
4-Nitroaniline	0.080	0.010	mg/L	0.1000		80	40-140	7	20	
4-Nitrophenol	0.096	0.050	mg/L	0.1000		96	30-130	2	20	
Acetophenone	0.073	0.010	mg/L	0.1000		73	40-140	9	20	
Aniline	0.058	0.010	mg/L	0.1000		58	40-140	4	20	
Azobenzene	0.094	0.020	mg/L	0.1000		94	40-140	7	20	
Benzoic Acid	0.100	0.100	mg/L	0.1000		100	40-140	18	20	
Benzyl Alcohol	0.077	0.010	mg/L	0.1000		77	40-140	10	20	
bis(2-Chloroethoxy)methane	0.075	0.010	mg/L	0.1000		75	40-140	8	20	
bis(2-Chloroethyl)ether	0.077	0.010	mg/L	0.1000		77	40-140	10	20	
bis(2-chloroisopropyl)Ether	0.068	0.010	mg/L	0.1000		68	40-140	6	20	
bis(2-Ethylhexyl)phthalate	0.088	0.002	mg/L	0.1000		88	40-140	1	20	
Butylbenzylphthalate	0.089	0.010	mg/L	0.1000		89	40-140	0.6	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Carbazole	0.087	0.010	mg/L	0.1000		87	40-140	6	20	
Dibenzofuran	0.074	0.010	mg/L	0.1000		74	40-140	8	20	
Diethylphthalate	0.082	0.010	mg/L	0.1000		82	40-140	4	20	
Dimethylphthalate	0.080	0.010	mg/L	0.1000		80	40-140	7	20	
Di-n-butylphthalate	0.091	0.010	mg/L	0.1000		91	40-140	2	20	
Di-n-octylphthalate	0.088	0.010	mg/L	0.1000		88	40-140	0.4	20	
Hexachlorobutadiene	0.055	0.010	mg/L	0.1000		55	40-140	11	20	
Hexachlorocyclopentadiene	0.049	0.025	mg/L	0.1000		49	40-140	9	20	
Hexachloroethane	0.063	0.005	mg/L	0.1000		63	40-140	10	20	
Isophorone	0.066	0.010	mg/L	0.1000		66	40-140	11	20	
Nitrobenzene	0.072	0.010	mg/L	0.1000		72	40-140	8	20	
N-Nitrosodimethylamine	0.074	0.010	mg/L	0.1000		74	40-140	10	20	
N-Nitroso-Di-n-Propylamine	0.078	0.010	mg/L	0.1000		78	40-140	11	20	
N-nitrosodiphenylamine	0.076	0.010	mg/L	0.1000		76	40-140	4	20	
Phenol	0.073	0.010	mg/L	0.1000		73	30-130	11	20	
Pyridine	0.066	0.100	mg/L	0.1000		66	40-140	7	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0618*		mg/L	*0.1000*		*62*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.103*		mg/L	*0.1500*		*69*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0688*		mg/L	*0.1000*		*69*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0968*		mg/L	*0.1500*		*65*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0751*		mg/L	*0.1000*		*75*	*30-130*			
Surrogate: Phenol-d6	*0.107*		mg/L	*0.1500*		*72*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0803*		mg/L	*0.1000*		*80*	*30-130*			
Batch CA01003 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0783*		mg/L	*0.1000*		*78*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.132*		mg/L	*0.1500*		*88*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.121*		mg/L	*0.1500*		*81*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0807*		mg/L	*0.1000*		*81*	*30-130*			
Surrogate: 2-Fluorophenol	*0.106*		mg/L	*0.1500*		*70*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0838*		mg/L	*0.1000*		*84*	*30-130*			
Surrogate: Phenol-d6	*0.125*		mg/L	*0.1500*		*83*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0886*		mg/L	*0.1000*		*89*	*30-130*			
LCS										
1,1-Biphenyl	0.087	0.010	mg/L	0.1000		87	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
1,2,4-Trichlorobenzene	0.081	0.010	mg/L	0.1000		81	40-140			
1,2-Dichlorobenzene	0.075	0.010	mg/L	0.1000		75	40-140			
1,3-Dichlorobenzene	0.075	0.010	mg/L	0.1000		75	40-140			
1,4-Dichlorobenzene	0.071	0.010	mg/L	0.1000		71	40-140			
2,3,4,6-Tetrachlorophenol	0.102	0.050	mg/L	0.1000		102	40-140			
2,4,5-Trichlorophenol	0.099	0.010	mg/L	0.1000		99	30-130			
2,4,6-Trichlorophenol	0.095	0.010	mg/L	0.1000		95	30-130			
2,4-Dichlorophenol	0.093	0.010	mg/L	0.1000		93	30-130			
2,4-Dimethylphenol	0.086	0.050	mg/L	0.1000		86	30-130			
2,4-Dinitrophenol	0.116	0.050	mg/L	0.1000		116	30-130			
2,4-Dinitrotoluene	0.112	0.010	mg/L	0.1000		112	40-140			
2,6-Dinitrotoluene	0.103	0.010	mg/L	0.1000		103	40-140			
2-Chloronaphthalene	0.084	0.010	mg/L	0.1000		84	40-140			
2-Chlorophenol	0.082	0.010	mg/L	0.1000		82	30-130			
2-Methylphenol	0.090	0.010	mg/L	0.1000		90	30-130			
2-Nitroaniline	0.108	0.010	mg/L	0.1000		108	40-140			
2-Nitrophenol	0.087	0.010	mg/L	0.1000		87	30-130			
3,3´-Dichlorobenzidine	0.089	0.020	mg/L	0.1000		89	40-140			
3+4-Methylphenol	0.171	0.020	mg/L	0.2000		86	30-130			
3-Nitroaniline	0.104	0.010	mg/L	0.1000		104	40-140			
4,6-Dinitro-2-Methylphenol	0.116	0.050	mg/L	0.1000		116	30-130			
4-Bromophenyl-phenylether	0.094	0.010	mg/L	0.1000		94	40-140			
4-Chloro-3-Methylphenol	0.107	0.010	mg/L	0.1000		107	30-130			
4-Chloroaniline	0.076	0.020	mg/L	0.1000		76	40-140			
4-Chloro-phenyl-phenyl ether	0.090	0.010	mg/L	0.1000		90	40-140			
4-Nitroaniline	0.102	0.010	mg/L	0.1000		102	40-140			
4-Nitrophenol	0.102	0.050	mg/L	0.1000		102	30-130			
Acetophenone	0.086	0.010	mg/L	0.1000		86	40-140			
Aniline	0.067	0.010	mg/L	0.1000		67	40-140			
Azobenzene	0.092	0.020	mg/L	0.1000		92	40-140			
Benzoic Acid	0.107	0.100	mg/L	0.1000		107	40-140			
Benzyl Alcohol	0.099	0.010	mg/L	0.1000		99	40-140			
bis(2-Chloroethoxy)methane	0.086	0.010	mg/L	0.1000		86	40-140			
bis(2-Chloroethyl)ether	0.088	0.010	mg/L	0.1000		88	40-140			
bis(2-chloroisopropyl)Ether	0.082	0.010	mg/L	0.1000		82	40-140			
bis(2-Ethylhexyl)phthalate	0.107	0.006	mg/L	0.1000		107	40-140			
Butylbenzylphthalate	0.097	0.010	mg/L	0.1000		97	40-140			
Carbazole	0.105	0.010	mg/L	0.1000		105	40-140			
Dibenzofuran	0.092	0.010	mg/L	0.1000		92	40-140			
Diethylphthalate	0.103	0.010	mg/L	0.1000		103	40-140			
Dimethylphthalate	0.098	0.010	mg/L	0.1000		98	40-140			
Di-n-butylphthalate	0.106	0.010	mg/L	0.1000		106	40-140			
Di-n-octylphthalate	0.100	0.010	mg/L	0.1000		100	40-140			
Hexachlorobutadiene	0.080	0.010	mg/L	0.1000		80	40-140			
Hexachlorocyclopentadiene	0.063	0.025	mg/L	0.1000		63	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Hexachloroethane	0.071	0.005	mg/L	0.1000		71	40-140			
Isophorone	0.085	0.010	mg/L	0.1000		85	40-140			
Nitrobenzene	0.087	0.010	mg/L	0.1000		87	40-140			
N-Nitrosodimethylamine	0.076	0.010	mg/L	0.1000		76	40-140			
N-Nitroso-Di-n-Propylamine	0.092	0.010	mg/L	0.1000		92	40-140			
N-nitrosodiphenylamine	0.096	0.010	mg/L	0.1000		96	40-140			
Phenol	0.086	0.010	mg/L	0.1000		86	30-130			
Pyridine	0.077	0.100	mg/L	0.1000		77	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0792*		mg/L	*0.1000*		*79*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.146*		mg/L	*0.1500*		*97*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.126*		mg/L	*0.1500*		*84*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0893*		mg/L	*0.1000*		*89*	*30-130*			
Surrogate: 2-Fluorophenol	*0.110*		mg/L	*0.1500*		*73*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0909*		mg/L	*0.1000*		*91*	*30-130*			
Surrogate: Phenol-d6	*0.132*		mg/L	*0.1500*		*88*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0935*		mg/L	*0.1000*		*94*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.085	0.010	mg/L	0.1000		85	40-140	3	20	
1,2,4-Trichlorobenzene	0.079	0.010	mg/L	0.1000		79	40-140	2	20	
1,2-Dichlorobenzene	0.077	0.010	mg/L	0.1000		77	40-140	3	20	
1,3-Dichlorobenzene	0.076	0.010	mg/L	0.1000		76	40-140	1	20	
1,4-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140	3	20	
2,3,4,6-Tetrachlorophenol	0.099	0.050	mg/L	0.1000		99	40-140	3	20	
2,4,5-Trichlorophenol	0.099	0.010	mg/L	0.1000		99	30-130	0.1	20	
2,4,6-Trichlorophenol	0.093	0.010	mg/L	0.1000		93	30-130	2	20	
2,4-Dichlorophenol	0.096	0.010	mg/L	0.1000		96	30-130	3	20	
2,4-Dimethylphenol	0.086	0.050	mg/L	0.1000		86	30-130	0.2	20	
2,4-Dinitrophenol	0.125	0.050	mg/L	0.1000		125	30-130	7	20	
2,4-Dinitrotoluene	0.110	0.010	mg/L	0.1000		110	40-140	1	20	
2,6-Dinitrotoluene	0.100	0.010	mg/L	0.1000		100	40-140	3	20	
2-Chloronaphthalene	0.082	0.010	mg/L	0.1000		82	40-140	3	20	
2-Chlorophenol	0.084	0.010	mg/L	0.1000		84	30-130	3	20	
2-Methylphenol	0.095	0.010	mg/L	0.1000		95	30-130	5	20	
2-Nitroaniline	0.108	0.010	mg/L	0.1000		108	40-140	0.2	20	
2-Nitrophenol	0.086	0.010	mg/L	0.1000		86	30-130	1	20	
3,3´-Dichlorobenzidine	0.087	0.020	mg/L	0.1000		87	40-140	3	20	
3+4-Methylphenol	0.176	0.020	mg/L	0.2000		88	30-130	3	20	
3-Nitroaniline	0.102	0.010	mg/L	0.1000		102	40-140	1	20	
4,6-Dinitro-2-Methylphenol	0.115	0.050	mg/L	0.1000		115	30-130	1	20	
4-Bromophenyl-phenylether	0.090	0.010	mg/L	0.1000		90	40-140	4	20	
4-Chloro-3-Methylphenol	0.105	0.010	mg/L	0.1000		105	30-130	2	20	
4-Chloroaniline	0.073	0.020	mg/L	0.1000		73	40-140	5	20	
4-Chloro-phenyl-phenyl ether	0.087	0.010	mg/L	0.1000		87	40-140	4	20	
4-Nitroaniline	0.101	0.010	mg/L	0.1000		101	40-140	0.7	20	
4-Nitrophenol	0.106	0.050	mg/L	0.1000		106	30-130	4	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Acetophenone	0.083	0.010	mg/L	0.1000		83	40-140	3	20	
Aniline	0.067	0.010	mg/L	0.1000		67	40-140	0.3	20	
Azobenzene	0.091	0.020	mg/L	0.1000		91	40-140	1	20	
Benzoic Acid	0.107	0.100	mg/L	0.1000		107	40-140	0.07	20	
Benzyl Alcohol	0.099	0.010	mg/L	0.1000		99	40-140	0.01	20	
bis(2-Chloroethoxy)methane	0.086	0.010	mg/L	0.1000		86	40-140	0.3	20	
bis(2-Chloroethyl)ether	0.085	0.010	mg/L	0.1000		85	40-140	4	20	
bis(2-chloroisopropyl)Ether	0.081	0.010	mg/L	0.1000		81	40-140	0.9	20	
bis(2-Ethylhexyl)phthalate	0.094	0.006	mg/L	0.1000		94	40-140	14	20	
Butylbenzylphthalate	0.096	0.010	mg/L	0.1000		96	40-140	1	20	
Carbazole	0.102	0.010	mg/L	0.1000		102	40-140	3	20	
Dibenzofuran	0.090	0.010	mg/L	0.1000		90	40-140	3	20	
Diethylphthalate	0.101	0.010	mg/L	0.1000		101	40-140	2	20	
Dimethylphthalate	0.095	0.010	mg/L	0.1000		95	40-140	3	20	
Di-n-butylphthalate	0.102	0.010	mg/L	0.1000		102	40-140	4	20	
Di-n-octylphthalate	0.102	0.010	mg/L	0.1000		102	40-140	1	20	
Hexachlorobutadiene	0.078	0.010	mg/L	0.1000		78	40-140	4	20	
Hexachlorocyclopentadiene	0.060	0.025	mg/L	0.1000		60	40-140	6	20	
Hexachloroethane	0.072	0.005	mg/L	0.1000		72	40-140	2	20	
Isophorone	0.084	0.010	mg/L	0.1000		84	40-140	1	20	
Nitrobenzene	0.084	0.010	mg/L	0.1000		84	40-140	3	20	
N-Nitrosodimethylamine	0.077	0.010	mg/L	0.1000		77	40-140	1	20	
N-Nitroso-Di-n-Propylamine	0.091	0.010	mg/L	0.1000		91	40-140	0.7	20	
N-nitrosodiphenylamine	0.096	0.010	mg/L	0.1000		96	40-140	0.4	20	
Phenol	0.089	0.010	mg/L	0.1000		89	30-130	4	20	
Pyridine	0.071	0.100	mg/L	0.1000		71	40-140	8	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0802*		mg/L	*0.1000*		*80*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.140*		mg/L	*0.1500*		*93*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.130*		mg/L	*0.1500*		*86*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0860*		mg/L	*0.1000*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0903*		mg/L	*0.1000*		*90*	*30-130*			
Surrogate: Phenol-d6	*0.136*		mg/L	*0.1500*		*91*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0933*		mg/L	*0.1000*		*93*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00040	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.0580	0.00400	mg/L	0.1000		58	40-140			
Acenaphthene	0.0635	0.00400	mg/L	0.1000		64	40-140			
Acenaphthylene	0.0600	0.00400	mg/L	0.1000		60	40-140			
Anthracene	0.0514	0.00400	mg/L	0.1000		51	40-140			
Benzo(a)anthracene	0.0595	0.00100	mg/L	0.1000		60	40-140			
Benzo(a)pyrene	0.0588	0.00100	mg/L	0.1000		59	40-140			
Benzo(b)fluoranthene	0.0624	0.00100	mg/L	0.1000		62	40-140			
Benzo(g,h,i)perylene	0.0648	0.00400	mg/L	0.1000		65	40-140			
Benzo(k)fluoranthene	0.0645	0.00100	mg/L	0.1000		64	40-140			
Chrysene	0.0618	0.00100	mg/L	0.1000		62	40-140			
Dibenzo(a,h)Anthracene	0.0643	0.00100	mg/L	0.1000		64	40-140			
Fluoranthene	0.0533	0.00400	mg/L	0.1000		53	40-140			
Fluorene	0.0663	0.00400	mg/L	0.1000		66	40-140			
Hexachlorobenzene	0.0652	0.00400	mg/L	0.1000		65	40-140			
Indeno(1,2,3-cd)Pyrene	0.0666	0.00100	mg/L	0.1000		67	40-140			
Naphthalene	0.0542	0.00400	mg/L	0.1000		54	40-140			
Pentachlorophenol	0.0729	0.0180	mg/L	0.1000		73	30-130			
Phenanthrene	0.0507	0.00400	mg/L	0.1000		51	40-140			
Pyrene	0.0628	0.00400	mg/L	0.1000		63	40-140			
LCS Dup										
2-Methylnaphthalene	0.0631	0.00400	mg/L	0.1000		63	40-140	8	20	
Acenaphthene	0.0692	0.00400	mg/L	0.1000		69	40-140	9	20	
Acenaphthylene	0.0661	0.00400	mg/L	0.1000		66	40-140	10	20	
Anthracene	0.0596	0.00400	mg/L	0.1000		60	40-140	15	20	
Benzo(a)anthracene	0.0716	0.00100	mg/L	0.1000		72	40-140	18	20	
Benzo(a)pyrene	0.0704	0.00100	mg/L	0.1000		70	40-140	18	20	
Benzo(b)fluoranthene	0.0757	0.00100	mg/L	0.1000		76	40-140	19	20	
Benzo(g,h,i)perylene	0.0746	0.00400	mg/L	0.1000		75	40-140	14	20	
Benzo(k)fluoranthene	0.0755	0.00100	mg/L	0.1000		75	40-140	16	20	
Chrysene	0.0719	0.00100	mg/L	0.1000		72	40-140	15	20	
Dibenzo(a,h)Anthracene	0.0755	0.00100	mg/L	0.1000		75	40-140	16	20	
Fluoranthene	0.0624	0.00400	mg/L	0.1000		62	40-140	16	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CA00829 - 3520C										
Fluorene	0.0734	0.00400	mg/L	0.1000		73	40-140	10	20	
Hexachlorobenzene	0.0754	0.00400	mg/L	0.1000		75	40-140	15	20	
Indeno(1,2,3-cd)Pyrene	0.0769	0.00100	mg/L	0.1000		77	40-140	14	20	
Naphthalene	0.0586	0.00400	mg/L	0.1000		59	40-140	8	20	
Pentachlorophenol	0.0830	0.0180	mg/L	0.1000		83	30-130	13	20	
Phenanthrene	0.0596	0.00400	mg/L	0.1000		60	40-140	16	20	
Pyrene	0.0752	0.00400	mg/L	0.1000		75	40-140	18	20	
Batch CA01003 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.0742	0.00400	mg/L	0.1000		74	40-140			
Acenaphthene	0.0833	0.00400	mg/L	0.1000		83	40-140			
Acenaphthylene	0.0791	0.00400	mg/L	0.1000		79	40-140			
Anthracene	0.0791	0.00400	mg/L	0.1000		79	40-140			
Benzo(a)anthracene	0.0778	0.00100	mg/L	0.1000		78	40-140			
Benzo(a)pyrene	0.0763	0.00100	mg/L	0.1000		76	40-140			
Benzo(b)fluoranthene	0.0866	0.00100	mg/L	0.1000		87	40-140			
Benzo(g,h,i)perylene	0.0848	0.00400	mg/L	0.1000		85	40-140			
Benzo(k)fluoranthene	0.0771	0.00100	mg/L	0.1000		77	40-140			
Chrysene	0.0777	0.00100	mg/L	0.1000		78	40-140			
Dibenzo(a,h)Anthracene	0.0849	0.00100	mg/L	0.1000		85	40-140			
Fluoranthene	0.0815	0.00400	mg/L	0.1000		81	40-140			
Fluorene	0.0816	0.00400	mg/L	0.1000		82	40-140			
Hexachlorobenzene	0.109	0.00400	mg/L	0.1000		109	40-140			
Indeno(1,2,3-cd)Pyrene	0.0863	0.00100	mg/L	0.1000		86	40-140			
Naphthalene	0.0705	0.00400	mg/L	0.1000		71	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Pentachlorophenol	0.0756	0.0180	mg/L	0.1000		76	30-130			
Phenanthrene	0.0800	0.00400	mg/L	0.1000		80	40-140			
Pyrene	0.0815	0.00400	mg/L	0.1000		81	40-140			
LCS Dup										
2-Methylnaphthalene	0.0784	0.00400	mg/L	0.1000		78	40-140	5	20	
Acenaphthene	0.0869	0.00400	mg/L	0.1000		87	40-140	4	20	
Acenaphthylene	0.0822	0.00400	mg/L	0.1000		82	40-140	4	20	
Anthracene	0.0823	0.00400	mg/L	0.1000		82	40-140	4	20	
Benzo(a)anthracene	0.0822	0.00100	mg/L	0.1000		82	40-140	5	20	
Benzo(a)pyrene	0.0789	0.00100	mg/L	0.1000		79	40-140	3	20	
Benzo(b)fluoranthene	0.0922	0.00100	mg/L	0.1000		92	40-140	6	20	
Benzo(g,h,i)perylene	0.0895	0.00400	mg/L	0.1000		89	40-140	5	20	
Benzo(k)fluoranthene	0.0783	0.00100	mg/L	0.1000		78	40-140	1	20	
Chrysene	0.0783	0.00100	mg/L	0.1000		78	40-140	0.9	20	
Dibenzo(a,h)Anthracene	0.0894	0.00100	mg/L	0.1000		89	40-140	5	20	
Fluoranthene	0.0853	0.00400	mg/L	0.1000		85	40-140	5	20	
Fluorene	0.0853	0.00400	mg/L	0.1000		85	40-140	4	20	
Hexachlorobenzene	0.108	0.00400	mg/L	0.1000		108	40-140	1	20	
Indeno(1,2,3-cd)Pyrene	0.0931	0.00100	mg/L	0.1000		93	40-140	8	20	
Naphthalene	0.0738	0.00400	mg/L	0.1000		74	40-140	4	20	
Pentachlorophenol	0.0776	0.0180	mg/L	0.1000		78	30-130	3	20	
Phenanthrene	0.0831	0.00400	mg/L	0.1000		83	40-140	4	20	
Pyrene	0.0835	0.00400	mg/L	0.1000		84	40-140	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20A0172

Notes and Definitions

U	Analyte included in the analysis, but not detected
S-	Surrogate recovery(ies) below lower control limit (S-).
Q	Calibration required quadratic regression (Q).
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
IM	Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0172

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

Shipped/Delivered Via: Client

ESS Project ID: 20A0172
Date Received: 1/8/2020
Project Due Date: 1/14/2020
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA
13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	1588	Yes	No	Yes	VOA Vial	HCl	
1	1589	Yes	No	Yes	VOA Vial	HCl	
1	1590	Yes	No	Yes	VOA Vial	HCl	
1	1612	Yes	N/A	Yes	1L Amber	NP	
1	1613	Yes	N/A	Yes	1L Amber	NP	
1	1614	Yes	N/A	Yes	1L Amber	NP	
1	1615	Yes	N/A	Yes	1L Amber	NP	
1	1616	Yes	N/A	Yes	1L Amber	NP	
1	1647	Yes	N/A	Yes	250 mL Poly	HNO3	
2	1591	Yes	No	Yes	VOA Vial	HCl	
2	1592	Yes	No	Yes	VOA Vial	HCl	
2	1593	Yes	No	Yes	VOA Vial	HCl	
2	1617	Yes	N/A	Yes	1L Amber	NP	
2	1618	Yes	N/A	Yes	1L Amber	NP	
2	1619	Yes	N/A	Yes	1L Amber	NP	
2	1620	Yes	N/A	Yes	1L Amber	NP	
2	1621	Yes	N/A	Yes	1L Amber	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 20A0172
Date Received: 1/8/2020

2	1648	Yes	N/A	Yes	250 mL Poly	HNO3
3	1594	Yes	No	Yes	VOA Vial	HCl
3	1595	Yes	No	Yes	VOA Vial	HCl
3	1596	Yes	No	Yes	VOA Vial	HCl
3	1622	Yes	N/A	Yes	1L Amber	NP
3	1623	Yes	N/A	Yes	1L Amber	NP
3	1624	Yes	N/A	Yes	1L Amber	NP
3	1625	Yes	N/A	Yes	1L Amber	NP
3	1626	Yes	N/A	Yes	1L Amber	NP
3	1649	Yes	N/A	Yes	250 mL Poly	HNO3
4	1597	Yes	No	Yes	VOA Vial	HCl
4	1598	Yes	No	Yes	VOA Vial	HCl
4	1599	Yes	No	Yes	VOA Vial	HCl
4	1627	Yes	N/A	Yes	1L Amber	NP
4	1628	Yes	N/A	Yes	1L Amber	NP
4	1629	Yes	N/A	Yes	1L Amber	NP
4	1630	Yes	N/A	Yes	1L Amber	NP
4	1631	Yes	N/A	Yes	1L Amber	NP
4	1650	Yes	N/A	Yes	250 mL Poly	HNO3
5	1600	Yes	No	Yes	VOA Vial	HCl
5	1601	Yes	No	Yes	VOA Vial	HCl
5	1602	Yes	No	Yes	VOA Vial	HCl
5	1632	Yes	N/A	Yes	1L Amber	NP
5	1633	Yes	N/A	Yes	1L Amber	NP
5	1634	Yes	N/A	Yes	1L Amber	NP
5	1635	Yes	N/A	Yes	1L Amber	NP
5	1636	Yes	N/A	Yes	1L Amber	NP
5	1651	Yes	N/A	Yes	250 mL Poly	HNO3
6	1603	Yes	No	Yes	VOA Vial	HCl
6	1604	Yes	No	Yes	VOA Vial	HCl
6	1605	Yes	No	Yes	VOA Vial	HCl
6	1637	Yes	N/A	Yes	1L Amber	NP
6	1638	Yes	N/A	Yes	1L Amber	NP
6	1639	Yes	N/A	Yes	1L Amber	NP
6	1640	Yes	N/A	Yes	1L Amber	NP
6	1641	Yes	N/A	Yes	1L Amber	NP
6	1652	Yes	N/A	Yes	250 mL Poly	HNO3
7	1606	Yes	No	Yes	VOA Vial	HCl
7	1607	Yes	No	Yes	VOA Vial	HCl
7	1608	Yes	No	Yes	VOA Vial	HCl
7	1642	Yes	N/A	Yes	1L Amber	NP
7	1643	Yes	N/A	Yes	1L Amber	NP
7	1644	Yes	N/A	Yes	1L Amber	NP
7	1645	Yes	N/A	Yes	1L Amber	NP
7	1646	Yes	N/A	Yes	1L Amber	NP
7	1653	Yes	N/A	Yes	250 mL Poly	HNO3
8	1609	Yes	No	Yes	VOA Vial	HCl

2nd Review

Were all containers scanned into storage/lab? Initials

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 20A0172
Date Received: 1/8/2020

Are all QC stickers attached? Yes / No (NA)
Are VOA stickers attached if bubbles noted? Yes / No (NA)

Completed By: _____ Date & Time: 1/8/20 1917

Reviewed By: _____ Date & Time: 1/8/20 PMS

Delivered By: _____ 1/8/20 PMS

CHAIN OF CUSTODY

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

ESS Lab # 20A0172
Turn Time 15 Days
Regulatory State RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits
Electonic Deliverables ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA GeoEnvironmental
Project #: 34614.8
Project Name: Trek-Away Landfill
Contact Person: Richard Carlone
Address: 184 Valley St Suite 300
City: Providence
State: RI
Zip Code: 02909
PO #:
Telephone Number:
FAX Number:
Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC	SVOC	TPH	Pesticides	PCBs	Metals
1	1/8/20	1236	Grab	GW	MW-5	X	X	X	X	X	X
2	1/8/20	1105	Grab	GW	MW-6	X	X	X	X	X	X
3	1/8/20	1047	Grab	GW	MW-8	X	X	X	X	X	X
4	1/8/20	1412	Grab	GW	MW-102	X	X	X	X	X	X
5	1/8/20	1253	Grab	GW	MW-103	X	X	X	X	X	X
6	1/8/20	1345	Grab	GW	MW-104	X	X	X	X	X	X
7	1/8/20	1052	Grab	GW	MW-105	X	X	X	X	X	X
8	1/8/20	0800			Trip Blank	X					

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

	V	AG	AG	AG	AG	P
Container Volume:	7	6	6	6	6	3
Preservation Code:	2	1	1	1	1	5
Number of Containers per Sample:	3	2	1	1	1	1

Laboratory Use Only
Cooler Present: Y
Seals Intact: NA
Cooler Temperature: 2.8 0.6 +c 0.4

Sampled by: Rowan Hanley / Manjra Kelly / Ben Ramos

Comments: special pricing per ★Kevin Braga★

Please specify "Other" preservative and containers types in this space
1. Metals IS Solid waste / Mercury

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
1/9/20 1540	1/8/20 1540		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 20A0196

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:53 pm, Jan 20, 2020

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

SAMPLE RECEIPT

The following samples were received on January 09, 2020 for the analyses specified on the enclosed Chain of Custody Record.

Revision 1, January 20, 2020: This report has been revised to include Corrected Method Reporting Limits for Mercury.

Lab Number	Sample Name	Matrix	Analysis
20A0196-01	MW-1	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0196-02	MW-7	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0196-03	MW-101	Ground Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
20A0196-04	Trip Blank	Aqueous	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20A0196

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)
CA00905-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Aroclor 1016 [2C] (21% @ 20%)

8270D Semi-Volatile Organic Compounds
C0A0189-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (108% @ 80-120%), 4,6-Dinitro-2-Methylphenol (92% @ 80-120%), Benzoic Acid (101% @ 80-120%)
C0A0189-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrotoluene (21% @ 20%), 4-Chloro-3-Methylphenol (22% @ 20%), 4-Chloroaniline (21% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds
C0A0230-CCV1 **Calibration required quadratic regression (Q).**
Pentachlorophenol (95% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	01/13/20 13:31	50	25	CA00934
Arsenic	ND (0.002)		7010		1	KJK	01/14/20 16:56	50	25	CA00934
Barium	**0.252** (0.025)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 22:07	20	40	CA01034
Nickel	ND (0.025)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Thallium	ND (0.001)		6020A		1	BJV	01/13/20 13:31	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934
Zinc	ND (0.025)		6010C		1	KJK	01/10/20 18:54	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/14/20 12:30

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
4,4´-DDE [2C]	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
4,4´-DDT	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Aldrin	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
alpha-BHC	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
alpha-Chlordane	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
beta-BHC	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Chlordane (Total)	ND (0.000467)		8081B		1	01/15/20 6:24	C0A0215	CA01434
delta-BHC	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Dieldrin	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Endosulfan I	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Endosulfan II	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Endrin	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Endrin Aldehyde	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Endrin Ketone	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
gamma-Chlordane	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Heptachlor	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Hexachlorobenzene	ND (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Methoxychlor	**0.000068** (0.000047)		8081B		1	01/15/20 6:24	C0A0215	CA01434
Toxaphene	ND (0.00121)		8081B		1	01/15/20 6:24	C0A0215	CA01434

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/10/20 9:24

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1242 [2C]	**0.61** (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/13/20 15:42		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/13/20 15:42		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*59 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*53 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**2.03** (0.19)		8100M		1	01/10/20 22:44	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*98 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2,4-Trimethylbenzene	**0.0376** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2-Dichlorobenzene	**0.0195** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,3,5-Trimethylbenzene	**0.0071** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,4-Dichlorobenzene	**0.0185** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 15:16	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 15:16	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 15:16	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Benzene	**0.0161** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Chlorobenzene	**0.322** (0.0100)		8260B		10	01/13/20 19:17	C0A0157	CA01018
Chloroethane	**0.617** (0.0200)		8260B		10	01/13/20 19:17	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Diethyl Ether	**0.0020** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Isopropylbenzene	**0.0063** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Naphthalene	**0.0308** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
n-Propylbenzene	**0.0050** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Toluene	**0.0023** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Xylene O	**0.0015** (0.0010)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Xylene P,M	**0.150** (0.0020)		8260B		1	01/10/20 15:16	C0A0157	CA01018
Xylenes (Total)	**0.151** (0.00200)		8260B		1	01/10/20 15:16		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
1,2-Dichlorobenzene	**0.012** (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
1,4-Dichlorobenzene	**0.012** (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 19:34	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 19:34	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 19:34	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 19:34	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 19:34	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*102 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*75 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*83 %*		*30-130*
Surrogate: 2-Fluorophenol	*64 %*		*15-110*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: Phenol-d6	*79 %*		*15-110*
Surrogate: p-Terphenyl-d14	*89 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-1
Date Sampled: 01/09/20 08:55
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00236** (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Acenaphthene	**0.00029** (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Anthracene	ND (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Fluoranthene	ND (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Fluorene	**0.00027** (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Naphthalene	**0.0145** (0.00187)		8270D SIM		10	01/16/20 12:48	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Phenanthrene	**0.00040** (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 20:16	C0A0230	CA01003

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	01/13/20 13:36	50	25	CA00934
Arsenic	**0.057** (0.012)		7010		5	KJK	01/14/20 17:13	50	25	CA00934
Barium	**0.132** (0.025)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 22:10	20	40	CA01034
Nickel	ND (0.025)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Thallium	ND (0.001)		6020A		1	BJV	01/13/20 13:36	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934
Zinc	ND (0.025)		6010C		1	KJK	01/10/20 18:58	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/14/20 12:30

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
4,4´-DDE	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
4,4´-DDT	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Aldrin	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
alpha-BHC	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
alpha-Chlordane	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
beta-BHC	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Chlordane (Total)	ND (0.000467)		8081B		1	01/15/20 6:54	C0A0215	CA01434
delta-BHC	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Dieldrin	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Endosulfan I	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Endosulfan II	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Endrin	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Endrin Aldehyde	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Endrin Ketone	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
gamma-Chlordane	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Heptachlor	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Hexachlorobenzene	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Methoxychlor	ND (0.000047)		8081B		1	01/15/20 6:54	C0A0215	CA01434
Toxaphene	ND (0.00121)		8081B		1	01/15/20 6:54	C0A0215	CA01434

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*87 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/10/20 9:24

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/13/20 16:01		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/13/20 16:01		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*58 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.40** (0.19)		8100M		1	01/10/20 23:16	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*103 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 15:41	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 15:41	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 15:41	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Benzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Chlorobenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Chloroethane	**0.0147** (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Diethyl Ether	**0.0075** (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Naphthalene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0104** (0.0050)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 15:41	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 15:41		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 20:03	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 20:03	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 20:03	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 20:03	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 20:03	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*91 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*76 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-130*
Surrogate: 2-Fluorophenol	*71 %*		*15-110*
Surrogate: Nitrobenzene-d5	*85 %*		*30-130*
Surrogate: Phenol-d6	*77 %*		*15-110*
Surrogate: p-Terphenyl-d14	*82 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-7
Date Sampled: 01/09/20 09:57
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Acenaphthene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Anthracene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Fluoranthene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Fluorene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Naphthalene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Phenanthrene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 21:03	C0A0230	CA01003

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	01/13/20 13:41	50	25	CA00934
Arsenic	**0.008** (0.002)		7010		1	KJK	01/14/20 17:18	50	25	CA00934
Barium	**0.085** (0.025)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Beryllium	ND (0.0005)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Cadmium	ND (0.0025)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Chromium	ND (0.010)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Cobalt	ND (0.010)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Copper	ND (0.010)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Lead	ND (0.010)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Mercury	ND (0.00020)		7470A		1	KJK	01/10/20 22:12	20	40	CA01034
Nickel	ND (0.025)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Selenium	ND (0.025)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Silver	ND (0.005)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Thallium	ND (0.001)		6020A		1	BJV	01/13/20 13:41	50	25	CA00934
Vanadium	ND (0.010)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934
Zinc	ND (0.025)		6010C		1	KJK	01/10/20 19:02	50	25	CA00934

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 1/14/20 12:30

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
4,4´-DDE	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
4,4´-DDT	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Aldrin	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
alpha-BHC	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
alpha-Chlordane	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
beta-BHC	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Chlordane (Total)	ND (0.000467)		8081B		1	01/15/20 7:25	C0A0215	CA01434
delta-BHC	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Dieldrin	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Endosulfan I	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Endosulfan II	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Endosulfan Sulfate	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Endrin	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Endrin Aldehyde	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Endrin Ketone	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
gamma-Chlordane	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Heptachlor	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Heptachlor Epoxide	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Hexachlorobenzene	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Methoxychlor	ND (0.000047)		8081B		1	01/15/20 7:25	C0A0215	CA01434
Toxaphene	ND (0.00121)		8081B		1	01/15/20 7:25	C0A0215	CA01434

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*93 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*97 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 1/10/20 9:24

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1221	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1232	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1242	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1248	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1254	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1260	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1262	ND (0.09)		8082A		1	01/13/20 16:20		CA00905
Aroclor 1268	ND (0.09)		8082A		1	01/13/20 16:20		CA00905

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*91 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: CAD
Prepared: 1/10/20 10:24

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	01/10/20 23:48	C0A0146	CA01001

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*98 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,1-Dichloroethane	**0.0104** (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 16:07	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 16:07	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 16:07	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Benzene	**0.0015** (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Chlorobenzene	**0.0064** (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Chloroethane	**0.0187** (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
cis-1,2-Dichloroethene	**0.0293** (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Diethyl Ether	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Naphthalene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Vinyl Chloride	**0.0206** (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 16:07	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 16:07		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
1,2-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
1,3-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
1,4-Dichlorobenzene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,4-Dichlorophenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,4-Dimethylphenol	ND (0.047)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,4-Dinitrophenol	ND (0.047)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,4-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2,6-Dinitrotoluene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2-Chloronaphthalene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2-Chlorophenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2-Methylphenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2-Nitroaniline	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
2-Nitrophenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	01/14/20 20:32	C0A0189	CA01003
3+4-Methylphenol	ND (0.019)		8270D		1	01/14/20 20:32	C0A0189	CA01003
3-Nitroaniline	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4-Chloroaniline	ND (0.019)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4-Nitroaniline	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
4-Nitrophenol	ND (0.047)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Acetophenone	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Aniline	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Azobenzene	ND (0.019)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Benzoic Acid	ND (0.093)		8270D		1	01/14/20 20:32	C0A0189	CA01003

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 1/10/20 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Butylbenzylphthalate	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Carbazole	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Dibenzofuran	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Diethylphthalate	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Dimethylphthalate	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Di-n-butylphthalate	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Di-n-octylphthalate	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Hexachlorobutadiene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Hexachloroethane	ND (0.005)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Isophorone	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Nitrobenzene	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
N-Nitrosodimethylamine	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
N-nitrosodiphenylamine	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Phenol	ND (0.009)		8270D		1	01/14/20 20:32	C0A0189	CA01003
Pyridine	ND (0.093)		8270D		1	01/14/20 20:32	C0A0189	CA01003

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*96 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*80 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*86 %*		*30-130*
Surrogate: 2-Fluorophenol	*71 %*		*15-110*
Surrogate: Nitrobenzene-d5	*87 %*		*30-130*
Surrogate: Phenol-d6	*79 %*		*15-110*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-101
Date Sampled: 01/09/20 09:59
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 1/10/20 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Acenaphthene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Acenaphthylene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Anthracene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Chrysene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Fluoranthene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Fluorene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Naphthalene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Pentachlorophenol	ND (0.00084)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Phenanthrene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003
Pyrene	ND (0.00019)		8270D SIM		1	01/15/20 21:50	C0A0230	CA01003

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/09/20 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-04
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,1-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,1-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,1-Dichloropropene	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2-Dibromoethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2-Dichloroethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,3-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1,4-Dioxane - Screen	ND (0.500)		8260B		1	01/10/20 12:15	C0A0157	CA01018
1-Chlorohexane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
2,2-Dichloropropane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
2-Butanone	ND (0.0100)		8260B		1	01/10/20 12:15	C0A0157	CA01018
2-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
2-Hexanone	ND (0.0100)		8260B		1	01/10/20 12:15	C0A0157	CA01018
4-Chlorotoluene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
4-Isopropyltoluene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Acetone	ND (0.0100)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Benzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Bromobenzene	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/09/20 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-04
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Bromodichloromethane	ND (0.0006)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Bromoform	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Bromomethane	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Carbon Disulfide	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Carbon Tetrachloride	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Chlorobenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Chloroethane	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Chloroform	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Chloromethane	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Dibromochloromethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Dibromomethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Dichlorodifluoromethane	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Diethyl Ether	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Di-isopropyl ether	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Ethylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Hexachlorobutadiene	ND (0.0006)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Hexachloroethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Isopropylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Methylene Chloride	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Naphthalene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
n-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
n-Propylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
sec-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Styrene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
tert-Butylbenzene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Tetrachloroethene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 01/09/20 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20A0196
ESS Laboratory Sample ID: 20A0196-04
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Toluene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Trichloroethene	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Trichlorofluoromethane	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Vinyl Acetate	ND (0.0050)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Vinyl Chloride	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Xylene O	ND (0.0010)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Xylene P,M	ND (0.0020)		8260B		1	01/10/20 12:15	C0A0157	CA01018
Xylenes (Total)	ND (0.00200)		8260B		1	01/10/20 12:15		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*99 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*100 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CA00934 - 3005A/200.7										
Blank										
Barium	ND	0.025	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0025	mg/L							
Chromium	ND	0.010	mg/L							
Cobalt	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
Nickel	ND	0.025	mg/L							
Selenium	ND	0.025	mg/L							
Silver	ND	0.005	mg/L							
Vanadium	ND	0.010	mg/L							
Zinc	ND	0.025	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Thallium	ND	0.001	mg/L							
Blank										
Arsenic	ND	0.002	mg/L							
LCS										
Barium	0.248	0.025	mg/L	0.2500		99	80-120			
Beryllium	0.0246	0.0005	mg/L	0.02500		98	80-120			
Cadmium	0.117	0.0025	mg/L	0.1250		93	80-120			
Chromium	0.246	0.010	mg/L	0.2500		98	80-120			
Cobalt	0.246	0.010	mg/L	0.2500		99	80-120			
Copper	0.261	0.010	mg/L	0.2500		104	80-120			
Lead	0.247	0.010	mg/L	0.2500		99	80-120			
Nickel	0.247	0.025	mg/L	0.2500		99	80-120			
Selenium	0.488	0.025	mg/L	0.5000		98	80-120			
Silver	0.128	0.005	mg/L	0.1250		102	80-120			
Vanadium	0.249	0.010	mg/L	0.2500		100	80-120			
Zinc	0.247	0.025	mg/L	0.2500		99	80-120			
LCS										
Antimony	0.244	0.005	mg/L	0.2500		98	80-120			
Thallium	0.205	0.005	mg/L	0.2500		82	80-120			
LCS										
Arsenic	0.227	0.062	mg/L	0.2500		91	80-120			
LCS Dup										
Barium	0.238	0.025	mg/L	0.2500		95	80-120	4	20	
Beryllium	0.0234	0.0005	mg/L	0.02500		94	80-120	5	20	
Cadmium	0.111	0.0025	mg/L	0.1250		89	80-120	5	20	
Chromium	0.233	0.010	mg/L	0.2500		93	80-120	5	20	
Cobalt	0.235	0.010	mg/L	0.2500		94	80-120	5	20	
Copper	0.248	0.010	mg/L	0.2500		99	80-120	5	20	
Lead	0.236	0.010	mg/L	0.2500		94	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CA00934 - 3005A/200.7										
Nickel	0.236	0.025	mg/L	0.2500		94	80-120	5	20	
Selenium	0.465	0.025	mg/L	0.5000		93	80-120	5	20	
Silver	0.121	0.005	mg/L	0.1250		97	80-120	6	20	
Vanadium	0.237	0.010	mg/L	0.2500		95	80-120	5	20	
Zinc	0.237	0.025	mg/L	0.2500		95	80-120	4	20	
LCS Dup										
Antimony	0.229	0.005	mg/L	0.2500		92	80-120	6	20	
Thallium	0.202	0.005	mg/L	0.2500		81	80-120	1	20	
LCS Dup										
Arsenic	0.215	0.062	mg/L	0.2500		86	80-120	5	20	
Batch CA01034 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00619	0.00020	mg/L	0.006042		102	80-120			
LCS Dup										
Mercury	0.00618	0.00020	mg/L	0.006042		102	80-120	0.1	20	
8081B Organochlorine Pesticides										
Batch CA01434 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
Chlordane (Total)	ND	0.000500	mg/L							
Chlordane (Total) [2C]	ND	0.000500	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							
Endosulfan I [2C]	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA01434 - 3510C										
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Toxaphene	ND	0.00130	mg/L							
Toxaphene [2C]	ND	0.00130	mg/L							
Surrogate: Decachlorobiphenyl	*0.000243*		mg/L	*0.0002500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000238*		mg/L	*0.0002500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000254*		mg/L	*0.0002500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000255*		mg/L	*0.0002500*		*102*	*30-150*			
LCS										
4,4´-DDD	0.000265	0.000050	mg/L	0.0002500		106	40-140			
4,4´-DDD [2C]	0.000261	0.000050	mg/L	0.0002500		104	40-140			
4,4´-DDE	0.000271	0.000050	mg/L	0.0002500		108	40-140			
4,4´-DDE [2C]	0.000272	0.000050	mg/L	0.0002500		109	40-140			
4,4´-DDT	0.000264	0.000050	mg/L	0.0002500		106	40-140			
4,4´-DDT [2C]	0.000255	0.000050	mg/L	0.0002500		102	40-140			
Aldrin	0.000244	0.000050	mg/L	0.0002500		98	40-140			
Aldrin [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140			
alpha-BHC	0.000259	0.000050	mg/L	0.0002500		104	40-140			
alpha-BHC [2C]	0.000245	0.000050	mg/L	0.0002500		98	40-140			
alpha-Chlordane	0.000234	0.000050	mg/L	0.0002500		94	40-140			
alpha-Chlordane [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140			
beta-BHC	0.000258	0.000050	mg/L	0.0002500		103	40-140			
beta-BHC [2C]	0.000252	0.000050	mg/L	0.0002500		101	40-140			
delta-BHC	0.000209	0.000050	mg/L	0.0002500		84	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CA01434 - 3510C										
delta-BHC [2C]	0.000202	0.000050	mg/L	0.0002500		81	40-140			
Dieldrin	0.000257	0.000050	mg/L	0.0002500		103	40-140			
Dieldrin [2C]	0.000249	0.000050	mg/L	0.0002500		100	40-140			
Endosulfan I	0.000225	0.000050	mg/L	0.0002500		90	40-140			
Endosulfan I [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140			
Endosulfan II	0.000244	0.000050	mg/L	0.0002500		98	40-140			
Endosulfan II [2C]	0.000234	0.000050	mg/L	0.0002500		93	40-140			
Endosulfan Sulfate	0.000239	0.000050	mg/L	0.0002500		95	40-140			
Endosulfan Sulfate [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140			
Endrin	0.000266	0.000050	mg/L	0.0002500		106	40-140			
Endrin [2C]	0.000259	0.000050	mg/L	0.0002500		104	40-140			
Endrin Aldehyde	0.000247	0.000050	mg/L	0.0002500		99	40-140			
Endrin Aldehyde [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140			
Endrin Ketone	0.000255	0.000050	mg/L	0.0002500		102	40-140			
Endrin Ketone [2C]	0.000246	0.000050	mg/L	0.0002500		98	40-140			
gamma-BHC (Lindane)	0.000255	0.000050	mg/L	0.0002500		102	40-140			
gamma-BHC (Lindane) [2C]	0.000255	0.000050	mg/L	0.0002500		102	40-140			
gamma-Chlordane	0.000240	0.000050	mg/L	0.0002500		96	40-140			
gamma-Chlordane [2C]	0.000236	0.000050	mg/L	0.0002500		94	40-140			
Heptachlor	0.000248	0.000050	mg/L	0.0002500		99	40-140			
Heptachlor [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140			
Heptachlor Epoxide	0.000260	0.000050	mg/L	0.0002500		104	40-140			
Heptachlor Epoxide [2C]	0.000255	0.000050	mg/L	0.0002500		102	40-140			
Hexachlorobenzene	0.000240	0.000050	mg/L	0.0002500		96	40-140			
Hexachlorobenzene [2C]	0.000236	0.000050	mg/L	0.0002500		95	40-140			
Methoxychlor	0.000241	0.000050	mg/L	0.0002500		96	40-140			
Methoxychlor [2C]	0.000247	0.000050	mg/L	0.0002500		99	40-140			
Surrogate: Decachlorobiphenyl	*0.000217*		mg/L	*0.0002500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000213*		mg/L	*0.0002500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000242*		mg/L	*0.0002500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000251*		mg/L	*0.0002500*		*100*	*30-150*			
LCS Dup										
4,4´-DDD	0.000283	0.000050	mg/L	0.0002500		113	40-140	7	20	
4,4´-DDD [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140	7	20	
4,4´-DDE	0.000288	0.000050	mg/L	0.0002500		115	40-140	6	20	
4,4´-DDE [2C]	0.000287	0.000050	mg/L	0.0002500		115	40-140	5	20	
4,4´-DDT	0.000289	0.000050	mg/L	0.0002500		116	40-140	9	20	
4,4´-DDT [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140	9	20	
Aldrin	0.000249	0.000050	mg/L	0.0002500		99	40-140	2	20	
Aldrin [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140	2	20	
alpha-BHC	0.000264	0.000050	mg/L	0.0002500		105	40-140	2	20	
alpha-BHC [2C]	0.000248	0.000050	mg/L	0.0002500		99	40-140	1	20	
alpha-Chlordane	0.000242	0.000050	mg/L	0.0002500		97	40-140	4	20	
alpha-Chlordane [2C]	0.000244	0.000050	mg/L	0.0002500		98	40-140	5	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CA01434 - 3510C										
beta-BHC	0.000263	0.000050	mg/L	0.0002500		105	40-140	2	20	
beta-BHC [2C]	0.000263	0.000050	mg/L	0.0002500		105	40-140	4	20	
delta-BHC	0.000212	0.000050	mg/L	0.0002500		85	40-140	1	20	
delta-BHC [2C]	0.000208	0.000050	mg/L	0.0002500		83	40-140	3	20	
Dieldrin	0.000269	0.000050	mg/L	0.0002500		108	40-140	4	20	
Dieldrin [2C]	0.000262	0.000050	mg/L	0.0002500		105	40-140	5	20	
Endosulfan I	0.000232	0.000050	mg/L	0.0002500		93	40-140	3	20	
Endosulfan I [2C]	0.000241	0.000050	mg/L	0.0002500		96	40-140	4	20	
Endosulfan II	0.000260	0.000050	mg/L	0.0002500		104	40-140	6	20	
Endosulfan II [2C]	0.000257	0.000050	mg/L	0.0002500		103	40-140	9	20	
Endosulfan Sulfate	0.000256	0.000050	mg/L	0.0002500		102	40-140	7	20	
Endosulfan Sulfate [2C]	0.000251	0.000050	mg/L	0.0002500		100	40-140	8	20	
Endrin	0.000279	0.000050	mg/L	0.0002500		112	40-140	5	20	
Endrin [2C]	0.000274	0.000050	mg/L	0.0002500		109	40-140	6	20	
Endrin Aldehyde	0.000259	0.000050	mg/L	0.0002500		104	40-140	5	20	
Endrin Aldehyde [2C]	0.000269	0.000050	mg/L	0.0002500		108	40-140	8	20	
Endrin Ketone	0.000276	0.000050	mg/L	0.0002500		110	40-140	8	20	
Endrin Ketone [2C]	0.000269	0.000050	mg/L	0.0002500		108	40-140	9	20	
gamma-BHC (Lindane)	0.000258	0.000050	mg/L	0.0002500		103	40-140	1	20	
gamma-BHC (Lindane) [2C]	0.000259	0.000050	mg/L	0.0002500		104	40-140	2	20	
gamma-Chlordane	0.000250	0.000050	mg/L	0.0002500		100	40-140	4	20	
gamma-Chlordane [2C]	0.000246	0.000050	mg/L	0.0002500		98	40-140	4	20	
Heptachlor	0.000254	0.000050	mg/L	0.0002500		102	40-140	3	20	
Heptachlor [2C]	0.000250	0.000050	mg/L	0.0002500		100	40-140	3	20	
Heptachlor Epoxide	0.000268	0.000050	mg/L	0.0002500		107	40-140	3	20	
Heptachlor Epoxide [2C]	0.000264	0.000050	mg/L	0.0002500		105	40-140	3	20	
Hexachlorobenzene	0.000244	0.000050	mg/L	0.0002500		98	40-140	2	20	
Hexachlorobenzene [2C]	0.000242	0.000050	mg/L	0.0002500		97	40-140	2	20	
Methoxychlor	0.000269	0.000050	mg/L	0.0002500		108	40-140	11	20	
Methoxychlor [2C]	0.000273	0.000050	mg/L	0.0002500		109	40-140	10	20	
Surrogate: Decachlorobiphenyl	*0.000247*		mg/L	*0.0002500*		*99*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000243*		mg/L	*0.0002500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000239*		mg/L	*0.0002500*		*96*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000249*		mg/L	*0.0002500*		*100*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CA00905 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CA00905 - 3510C										
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							
Surrogate: Decachlorobiphenyl	*0.0363*		ug/L	*0.05000*		*73*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0357*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0257*		ug/L	*0.05000*		*51*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0259*		ug/L	*0.05000*		*52*	*30-150*			
LCS										
Aroclor 1016	0.73	0.10	ug/L	1.000		73	40-140			
Aroclor 1016 [2C]	0.68	0.10	ug/L	1.000		68	40-140			
Aroclor 1260	0.85	0.10	ug/L	1.000		85	40-140			
Aroclor 1260 [2C]	0.79	0.10	ug/L	1.000		79	40-140			
Surrogate: Decachlorobiphenyl	*0.0410*		ug/L	*0.05000*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0394*		ug/L	*0.05000*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0296*		ug/L	*0.05000*		*59*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0261*		ug/L	*0.05000*		*52*	*30-150*			
LCS Dup										
Aroclor 1016	0.90	0.10	ug/L	1.000		90	40-140	20	20	
Aroclor 1016 [2C]	0.84	0.10	ug/L	1.000		84	40-140	21	20	D+
Aroclor 1260	0.97	0.10	ug/L	1.000		97	40-140	14	20	
Aroclor 1260 [2C]	0.90	0.10	ug/L	1.000		90	40-140	13	20	
Surrogate: Decachlorobiphenyl	*0.0447*		ug/L	*0.05000*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0434*		ug/L	*0.05000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0360*		ug/L	*0.05000*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0315*		ug/L	*0.05000*		*63*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CA01001 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							

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Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CA01001 - 3510C										
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.0989*		mg/L	*0.1000*		*99*	*40-140*			
LCS										
Decane (C10)	0.036	0.005	mg/L	0.05000		72	40-140			
Docosane (C22)	0.045	0.005	mg/L	0.05000		90	40-140			
Dodecane (C12)	0.041	0.005	mg/L	0.05000		83	40-140			
Eicosane (C20)	0.045	0.005	mg/L	0.05000		89	40-140			
Hexacosane (C26)	0.045	0.005	mg/L	0.05000		90	40-140			
Hexadecane (C16)	0.044	0.005	mg/L	0.05000		89	40-140			
Nonadecane (C19)	0.049	0.005	mg/L	0.05000		99	40-140			
Nonane (C9)	0.033	0.005	mg/L	0.05000		65	30-140			
Octacosane (C28)	0.046	0.005	mg/L	0.05000		92	40-140			
Octadecane (C18)	0.044	0.005	mg/L	0.05000		88	40-140			
Tetracosane (C24)	0.046	0.005	mg/L	0.05000		92	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140			
Total Petroleum Hydrocarbons	0.615	0.20	mg/L	0.7000		88	40-140			
Triacontane (C30)	0.046	0.005	mg/L	0.05000		92	40-140			
Surrogate: O-Terphenyl	*0.0931*		mg/L	*0.1000*		*93*	*40-140*			
LCS Dup										
Decane (C10)	0.037	0.005	mg/L	0.05000		75	40-140	4	25	
Docosane (C22)	0.046	0.005	mg/L	0.05000		92	40-140	2	25	
Dodecane (C12)	0.042	0.005	mg/L	0.05000		85	40-140	2	25	
Eicosane (C20)	0.046	0.005	mg/L	0.05000		91	40-140	2	25	
Hexacosane (C26)	0.046	0.005	mg/L	0.05000		92	40-140	1	25	
Hexadecane (C16)	0.045	0.005	mg/L	0.05000		90	40-140	1	25	
Nonadecane (C19)	0.050	0.005	mg/L	0.05000		100	40-140	2	25	
Nonane (C9)	0.035	0.005	mg/L	0.05000		70	30-140	7	25	
Octacosane (C28)	0.047	0.005	mg/L	0.05000		94	40-140	1	25	
Octadecane (C18)	0.045	0.005	mg/L	0.05000		90	40-140	2	25	
Tetracosane (C24)	0.047	0.005	mg/L	0.05000		93	40-140	1	25	
Tetradecane (C14)	0.044	0.005	mg/L	0.05000		88	40-140	2	25	
Total Petroleum Hydrocarbons	0.629	0.20	mg/L	0.7000		90	40-140	2	25	
Triacontane (C30)	0.047	0.005	mg/L	0.05000		94	40-140	2	25	
Surrogate: O-Terphenyl	*0.0937*		mg/L	*0.1000*		*94*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0245*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0244*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130			
1,1,1-Trichloroethane	9.84		ug/L	10.00		98	70-130			
1,1,2,2-Tetrachloroethane	9.62		ug/L	10.00		96	70-130			
1,1,2-Trichloroethane	9.75		ug/L	10.00		98	70-130			
1,1-Dichloroethane	10.1		ug/L	10.00		101	70-130			
1,1-Dichloroethene	10.3		ug/L	10.00		103	70-130			
1,1-Dichloropropene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichloropropane	9.43		ug/L	10.00		94	70-130			
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
1,2,4-Trimethylbenzene	10.4		ug/L	10.00		104	70-130			
1,2-Dibromo-3-Chloropropane	9.11		ug/L	10.00		91	70-130			
1,2-Dibromoethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichlorobenzene	9.87		ug/L	10.00		99	70-130			
1,2-Dichloroethane	9.90		ug/L	10.00		99	70-130			
1,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
1,3,5-Trimethylbenzene	10.4		ug/L	10.00		104	70-130			
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,3-Dichloropropane	10.4		ug/L	10.00		104	70-130			
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,4-Dioxane - Screen	201		ug/L	200.0		100	0-332			
1-Chlorohexane	9.96		ug/L	10.00		100	70-130			
2,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
2-Butanone	48.9		ug/L	50.00		98	70-130			
2-Chlorotoluene	10.0		ug/L	10.00		100	70-130			
2-Hexanone	48.1		ug/L	50.00		96	70-130			
4-Chlorotoluene	10.3		ug/L	10.00		103	70-130			
4-Isopropyltoluene	10.2		ug/L	10.00		102	70-130			
4-Methyl-2-Pentanone	48.8		ug/L	50.00		98	70-130			
Acetone	44.7		ug/L	50.00		89	70-130			
Benzene	10.0		ug/L	10.00		100	70-130			
Bromobenzene	10.2		ug/L	10.00		102	70-130			
Bromochloromethane	10.0		ug/L	10.00		100	70-130			
Bromodichloromethane	9.56		ug/L	10.00		96	70-130			
Bromoform	10.3		ug/L	10.00		103	70-130			
Bromomethane	10.5		ug/L	10.00		105	70-130			
Carbon Disulfide	10.2		ug/L	10.00		102	70-130			
Carbon Tetrachloride	10.2		ug/L	10.00		102	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	9.29		ug/L	10.00		93	70-130			
Chloroform	10.2		ug/L	10.00		102	70-130			
Chloromethane	8.74		ug/L	10.00		87	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	9.77		ug/L	10.00		98	70-130			
Dibromochloromethane	9.27		ug/L	10.00		93	70-130			
Dibromomethane	10.2		ug/L	10.00		102	70-130			
Dichlorodifluoromethane	8.39		ug/L	10.00		84	70-130			
Diethyl Ether	10.1		ug/L	10.00		101	70-130			
Di-isopropyl ether	11.2		ug/L	10.00		112	70-130			
Ethyl tertiary-butyl ether	10.6		ug/L	10.00		106	70-130			
Ethylbenzene	9.97		ug/L	10.00		100	70-130			
Hexachlorobutadiene	10.5		ug/L	10.00		105	70-130			
Hexachloroethane	10.2		ug/L	10.00		102	70-130			
Isopropylbenzene	10.2		ug/L	10.00		102	70-130			
Methyl tert-Butyl Ether	10.9		ug/L	10.00		109	70-130			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
Methylene Chloride	10.1		ug/L	10.00		101	70-130			
Naphthalene	9.52		ug/L	10.00		95	70-130			
n-Butylbenzene	10.5		ug/L	10.00		105	70-130			
n-Propylbenzene	10.1		ug/L	10.00		101	70-130			
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Styrene	10.2		ug/L	10.00		102	70-130			
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130			
Tertiary-amyl methyl ether	10.9		ug/L	10.00		109	70-130			
Tetrachloroethene	8.76		ug/L	10.00		88	70-130			
Tetrahydrofuran	9.27		ug/L	10.00		93	70-130			
Toluene	9.98		ug/L	10.00		100	70-130			
trans-1,2-Dichloroethene	9.80		ug/L	10.00		98	70-130			
trans-1,3-Dichloropropene	9.42		ug/L	10.00		94	70-130			
Trichloroethene	10.0		ug/L	10.00		100	70-130			
Trichlorofluoromethane	10.5		ug/L	10.00		105	70-130			
Vinyl Acetate	11.9		ug/L	10.00		119	70-130			
Vinyl Chloride	8.60		ug/L	10.00		86	70-130			
Xylene O	10.1		ug/L	10.00		101	70-130			
Xylene P,M	20.1		ug/L	20.00		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0246*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130	3	25	
1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130	6	25	
1,1,2,2-Tetrachloroethane	9.80		ug/L	10.00		98	70-130	2	25	
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130	4	25	
1,1-Dichloroethane	10.6		ug/L	10.00		106	70-130	5	25	
1,1-Dichloroethene	10.9		ug/L	10.00		109	70-130	5	25	
1,1-Dichloropropene	10.5		ug/L	10.00		105	70-130	3	25	
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130	0.3	25	
1,2,3-Trichloropropane	9.45		ug/L	10.00		94	70-130	0.2	25	
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130	0.2	25	
1,2,4-Trimethylbenzene	10.6		ug/L	10.00		106	70-130	1	25	
1,2-Dibromo-3-Chloropropane	9.05		ug/L	10.00		90	70-130	0.7	25	
1,2-Dibromoethane	10.2		ug/L	10.00		102	70-130	2	25	
1,2-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	3	25	
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130	2	25	
1,2-Dichloropropane	10.2		ug/L	10.00		102	70-130	2	25	
1,3,5-Trimethylbenzene	10.5		ug/L	10.00		105	70-130	0.9	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	1	25	
1,3-Dichloropropane	10.3		ug/L	10.00		103	70-130	0.5	25	
1,4-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	1	25	
1,4-Dioxane - Screen	208		ug/L	200.0		104	0-332	4	200	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
1-Chlorohexane	10.2		ug/L	10.00		102	70-130	2	25	
2,2-Dichloropropane	10.2		ug/L	10.00		102	70-130	2	25	
2-Butanone	50.6		ug/L	50.00		101	70-130	3	25	
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130	0.8	25	
2-Hexanone	48.2		ug/L	50.00		96	70-130	0.2	25	
4-Chlorotoluene	10.4		ug/L	10.00		104	70-130	2	25	
4-Isopropyltoluene	10.3		ug/L	10.00		103	70-130	0.6	25	
4-Methyl-2-Pentanone	49.9		ug/L	50.00		100	70-130	2	25	
Acetone	46.3		ug/L	50.00		93	70-130	4	25	
Benzene	10.4		ug/L	10.00		104	70-130	3	25	
Bromobenzene	10.5		ug/L	10.00		105	70-130	4	25	
Bromochloromethane	10.1		ug/L	10.00		101	70-130	0.8	25	
Bromodichloromethane	9.84		ug/L	10.00		98	70-130	3	25	
Bromoform	10.5		ug/L	10.00		105	70-130	2	25	
Bromomethane	10.6		ug/L	10.00		106	70-130	0.5	25	
Carbon Disulfide	10.6		ug/L	10.00		106	70-130	4	25	
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130	4	25	
Chlorobenzene	10.4		ug/L	10.00		104	70-130	3	25	
Chloroethane	9.75		ug/L	10.00		98	70-130	5	25	
Chloroform	10.6		ug/L	10.00		106	70-130	3	25	
Chloromethane	9.10		ug/L	10.00		91	70-130	4	25	
cis-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130	4	25	
cis-1,3-Dichloropropene	9.90		ug/L	10.00		99	70-130	1	25	
Dibromochloromethane	9.29		ug/L	10.00		93	70-130	0.2	25	
Dibromomethane	10.3		ug/L	10.00		103	70-130	1	25	
Dichlorodifluoromethane	8.66		ug/L	10.00		87	70-130	3	25	
Diethyl Ether	10.4		ug/L	10.00		104	70-130	4	25	
Di-isopropyl ether	11.4		ug/L	10.00		114	70-130	3	25	
Ethyl tertiary-butyl ether	10.8		ug/L	10.00		108	70-130	2	25	
Ethylbenzene	10.2		ug/L	10.00		102	70-130	2	25	
Hexachlorobutadiene	10.2		ug/L	10.00		102	70-130	3	25	
Hexachloroethane	10.3		ug/L	10.00		103	70-130	1	25	
Isopropylbenzene	10.3		ug/L	10.00		103	70-130	1	25	
Methyl tert-Butyl Ether	11.2		ug/L	10.00		112	70-130	3	25	
Methylene Chloride	10.5		ug/L	10.00		105	70-130	4	25	
Naphthalene	9.56		ug/L	10.00		96	70-130	0.4	25	
n-Butylbenzene	10.6		ug/L	10.00		106	70-130	0.5	25	
n-Propylbenzene	10.2		ug/L	10.00		102	70-130	0.6	25	
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130	0.3	25	
Styrene	10.4		ug/L	10.00		104	70-130	2	25	
tert-Butylbenzene	10.3		ug/L	10.00		103	70-130	1	25	
Tertiary-amyl methyl ether	11.3		ug/L	10.00		113	70-130	3	25	
Tetrachloroethene	8.88		ug/L	10.00		89	70-130	1	25	
Tetrahydrofuran	9.65		ug/L	10.00		96	70-130	4	25	
Toluene	10.4		ug/L	10.00		104	70-130	5	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA01018 - 5030B										
trans-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130	7	25	
trans-1,3-Dichloropropene	9.73		ug/L	10.00		97	70-130	3	25	
Trichloroethene	10.3		ug/L	10.00		103	70-130	3	25	
Trichlorofluoromethane	10.8		ug/L	10.00		108	70-130	3	25	
Vinyl Acetate	11.9		ug/L	10.00		119	70-130	0.5	25	
Vinyl Chloride	8.97		ug/L	10.00		90	70-130	4	25	
Xylene O	10.4		ug/L	10.00		104	70-130	3	25	
Xylene P,M	20.6		ug/L	20.00		103	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0252*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0783*		mg/L	*0.1000*		*78*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.132*		mg/L	*0.1500*		*88*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.121*		mg/L	*0.1500*		*81*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0807*		mg/L	*0.1000*		*81*	*30-130*			
Surrogate: 2-Fluorophenol	*0.106*		mg/L	*0.1500*		*70*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0838*		mg/L	*0.1000*		*84*	*30-130*			
Surrogate: Phenol-d6	*0.125*		mg/L	*0.1500*		*83*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0886*		mg/L	*0.1000*		*89*	*30-130*			
LCS										
1,1-Biphenyl	0.087	0.010	mg/L	0.1000		87	40-140			
1,2,4-Trichlorobenzene	0.081	0.010	mg/L	0.1000		81	40-140			
1,2-Dichlorobenzene	0.075	0.010	mg/L	0.1000		75	40-140			
1,3-Dichlorobenzene	0.075	0.010	mg/L	0.1000		75	40-140			
1,4-Dichlorobenzene	0.071	0.010	mg/L	0.1000		71	40-140			
2,3,4,6-Tetrachlorophenol	0.102	0.050	mg/L	0.1000		102	40-140			
2,4,5-Trichlorophenol	0.099	0.010	mg/L	0.1000		99	30-130			
2,4,6-Trichlorophenol	0.095	0.010	mg/L	0.1000		95	30-130			
2,4-Dichlorophenol	0.093	0.010	mg/L	0.1000		93	30-130			
2,4-Dimethylphenol	0.086	0.050	mg/L	0.1000		86	30-130			
2,4-Dinitrophenol	0.116	0.050	mg/L	0.1000		116	30-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
2,4-Dinitrotoluene	0.112	0.010	mg/L	0.1000		112	40-140			
2,6-Dinitrotoluene	0.103	0.010	mg/L	0.1000		103	40-140			
2-Chloronaphthalene	0.084	0.010	mg/L	0.1000		84	40-140			
2-Chlorophenol	0.082	0.010	mg/L	0.1000		82	30-130			
2-Methylphenol	0.090	0.010	mg/L	0.1000		90	30-130			
2-Nitroaniline	0.108	0.010	mg/L	0.1000		108	40-140			
2-Nitrophenol	0.087	0.010	mg/L	0.1000		87	30-130			
3,3´-Dichlorobenzidine	0.089	0.020	mg/L	0.1000		89	40-140			
3+4-Methylphenol	0.171	0.020	mg/L	0.2000		86	30-130			
3-Nitroaniline	0.104	0.010	mg/L	0.1000		104	40-140			
4,6-Dinitro-2-Methylphenol	0.116	0.050	mg/L	0.1000		116	30-130			
4-Bromophenyl-phenylether	0.094	0.010	mg/L	0.1000		94	40-140			
4-Chloro-3-Methylphenol	0.107	0.010	mg/L	0.1000		107	30-130			
4-Chloroaniline	0.076	0.020	mg/L	0.1000		76	40-140			
4-Chloro-phenyl-phenyl ether	0.090	0.010	mg/L	0.1000		90	40-140			
4-Nitroaniline	0.102	0.010	mg/L	0.1000		102	40-140			
4-Nitrophenol	0.102	0.050	mg/L	0.1000		102	30-130			
Acetophenone	0.086	0.010	mg/L	0.1000		86	40-140			
Aniline	0.067	0.010	mg/L	0.1000		67	40-140			
Azobenzene	0.092	0.020	mg/L	0.1000		92	40-140			
Benzoic Acid	0.107	0.100	mg/L	0.1000		107	40-140			
Benzyl Alcohol	0.099	0.010	mg/L	0.1000		99	40-140			
bis(2-Chloroethoxy)methane	0.086	0.010	mg/L	0.1000		86	40-140			
bis(2-Chloroethyl)ether	0.088	0.010	mg/L	0.1000		88	40-140			
bis(2-chloroisopropyl)Ether	0.082	0.010	mg/L	0.1000		82	40-140			
bis(2-Ethylhexyl)phthalate	0.107	0.006	mg/L	0.1000		107	40-140			
Butylbenzylphthalate	0.097	0.010	mg/L	0.1000		97	40-140			
Carbazole	0.105	0.010	mg/L	0.1000		105	40-140			
Dibenzofuran	0.092	0.010	mg/L	0.1000		92	40-140			
Diethylphthalate	0.103	0.010	mg/L	0.1000		103	40-140			
Dimethylphthalate	0.098	0.010	mg/L	0.1000		98	40-140			
Di-n-butylphthalate	0.106	0.010	mg/L	0.1000		106	40-140			
Di-n-octylphthalate	0.100	0.010	mg/L	0.1000		100	40-140			
Hexachlorobutadiene	0.080	0.010	mg/L	0.1000		80	40-140			
Hexachlorocyclopentadiene	0.063	0.025	mg/L	0.1000		63	40-140			
Hexachloroethane	0.071	0.005	mg/L	0.1000		71	40-140			
Isophorone	0.085	0.010	mg/L	0.1000		85	40-140			
Nitrobenzene	0.087	0.010	mg/L	0.1000		87	40-140			
N-Nitrosodimethylamine	0.076	0.010	mg/L	0.1000		76	40-140			
N-Nitroso-Di-n-Propylamine	0.092	0.010	mg/L	0.1000		92	40-140			
N-nitrosodiphenylamine	0.096	0.010	mg/L	0.1000		96	40-140			
Phenol	0.086	0.010	mg/L	0.1000		86	30-130			
Pyridine	0.077	0.100	mg/L	0.1000		77	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0792*		mg/L	*0.1000*		*79*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.146*		mg/L	*0.1500*		*97*	*15-110*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Surrogate: 2-Chlorophenol-d4	*0.126*		mg/L	*0.1500*		*84*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0893*		mg/L	*0.1000*		*89*	*30-130*			
Surrogate: 2-Fluorophenol	*0.110*		mg/L	*0.1500*		*73*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0909*		mg/L	*0.1000*		*91*	*30-130*			
Surrogate: Phenol-d6	*0.132*		mg/L	*0.1500*		*88*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0935*		mg/L	*0.1000*		*94*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.085	0.010	mg/L	0.1000		85	40-140	3	20	
1,2,4-Trichlorobenzene	0.079	0.010	mg/L	0.1000		79	40-140	2	20	
1,2-Dichlorobenzene	0.077	0.010	mg/L	0.1000		77	40-140	3	20	
1,3-Dichlorobenzene	0.076	0.010	mg/L	0.1000		76	40-140	1	20	
1,4-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140	3	20	
2,3,4,6-Tetrachlorophenol	0.099	0.050	mg/L	0.1000		99	40-140	3	20	
2,4,5-Trichlorophenol	0.099	0.010	mg/L	0.1000		99	30-130	0.1	20	
2,4,6-Trichlorophenol	0.093	0.010	mg/L	0.1000		93	30-130	2	20	
2,4-Dichlorophenol	0.096	0.010	mg/L	0.1000		96	30-130	3	20	
2,4-Dimethylphenol	0.086	0.050	mg/L	0.1000		86	30-130	0.2	20	
2,4-Dinitrophenol	0.125	0.050	mg/L	0.1000		125	30-130	7	20	
2,4-Dinitrotoluene	0.110	0.010	mg/L	0.1000		110	40-140	1	20	
2,6-Dinitrotoluene	0.100	0.010	mg/L	0.1000		100	40-140	3	20	
2-Chloronaphthalene	0.082	0.010	mg/L	0.1000		82	40-140	3	20	
2-Chlorophenol	0.084	0.010	mg/L	0.1000		84	30-130	3	20	
2-Methylphenol	0.095	0.010	mg/L	0.1000		95	30-130	5	20	
2-Nitroaniline	0.108	0.010	mg/L	0.1000		108	40-140	0.2	20	
2-Nitrophenol	0.086	0.010	mg/L	0.1000		86	30-130	1	20	
3,3´-Dichlorobenzidine	0.087	0.020	mg/L	0.1000		87	40-140	3	20	
3+4-Methylphenol	0.176	0.020	mg/L	0.2000		88	30-130	3	20	
3-Nitroaniline	0.102	0.010	mg/L	0.1000		102	40-140	1	20	
4,6-Dinitro-2-Methylphenol	0.115	0.050	mg/L	0.1000		115	30-130	1	20	
4-Bromophenyl-phenylether	0.090	0.010	mg/L	0.1000		90	40-140	4	20	
4-Chloro-3-Methylphenol	0.105	0.010	mg/L	0.1000		105	30-130	2	20	
4-Chloroaniline	0.073	0.020	mg/L	0.1000		73	40-140	5	20	
4-Chloro-phenyl-phenyl ether	0.087	0.010	mg/L	0.1000		87	40-140	4	20	
4-Nitroaniline	0.101	0.010	mg/L	0.1000		101	40-140	0.7	20	
4-Nitrophenol	0.106	0.050	mg/L	0.1000		106	30-130	4	20	
Acetophenone	0.083	0.010	mg/L	0.1000		83	40-140	3	20	
Aniline	0.067	0.010	mg/L	0.1000		67	40-140	0.3	20	
Azobenzene	0.091	0.020	mg/L	0.1000		91	40-140	1	20	
Benzoic Acid	0.107	0.100	mg/L	0.1000		107	40-140	0.07	20	
Benzyl Alcohol	0.099	0.010	mg/L	0.1000		99	40-140	0.01	20	
bis(2-Chloroethoxy)methane	0.086	0.010	mg/L	0.1000		86	40-140	0.3	20	
bis(2-Chloroethyl)ether	0.085	0.010	mg/L	0.1000		85	40-140	4	20	
bis(2-chloroisopropyl)Ether	0.081	0.010	mg/L	0.1000		81	40-140	0.9	20	
bis(2-Ethylhexyl)phthalate	0.094	0.006	mg/L	0.1000		94	40-140	14	20	
Butylbenzylphthalate	0.096	0.010	mg/L	0.1000		96	40-140	1	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Carbazole	0.102	0.010	mg/L	0.1000		102	40-140	3	20	
Dibenzofuran	0.090	0.010	mg/L	0.1000		90	40-140	3	20	
Diethylphthalate	0.101	0.010	mg/L	0.1000		101	40-140	2	20	
Dimethylphthalate	0.095	0.010	mg/L	0.1000		95	40-140	3	20	
Di-n-butylphthalate	0.102	0.010	mg/L	0.1000		102	40-140	4	20	
Di-n-octylphthalate	0.102	0.010	mg/L	0.1000		102	40-140	1	20	
Hexachlorobutadiene	0.078	0.010	mg/L	0.1000		78	40-140	4	20	
Hexachlorocyclopentadiene	0.060	0.025	mg/L	0.1000		60	40-140	6	20	
Hexachloroethane	0.072	0.005	mg/L	0.1000		72	40-140	2	20	
Isophorone	0.084	0.010	mg/L	0.1000		84	40-140	1	20	
Nitrobenzene	0.084	0.010	mg/L	0.1000		84	40-140	3	20	
N-Nitrosodimethylamine	0.077	0.010	mg/L	0.1000		77	40-140	1	20	
N-Nitroso-Di-n-Propylamine	0.091	0.010	mg/L	0.1000		91	40-140	0.7	20	
N-nitrosodiphenylamine	0.096	0.010	mg/L	0.1000		96	40-140	0.4	20	
Phenol	0.089	0.010	mg/L	0.1000		89	30-130	4	20	
Pyridine	0.071	0.100	mg/L	0.1000		71	40-140	8	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0802*		mg/L	*0.1000*		*80*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.140*		mg/L	*0.1500*		*93*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.130*		mg/L	*0.1500*		*86*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0860*		mg/L	*0.1000*		*86*	*30-130*			
Surrogate: 2-Fluorophenol	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0903*		mg/L	*0.1000*		*90*	*30-130*			
Surrogate: Phenol-d6	*0.136*		mg/L	*0.1500*		*91*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0933*		mg/L	*0.1000*		*93*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CA01003 - 3520C										
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.0742	0.00400	mg/L	0.1000		74	40-140			
Acenaphthene	0.0833	0.00400	mg/L	0.1000		83	40-140			
Acenaphthylene	0.0791	0.00400	mg/L	0.1000		79	40-140			
Anthracene	0.0791	0.00400	mg/L	0.1000		79	40-140			
Benzo(a)anthracene	0.0778	0.00100	mg/L	0.1000		78	40-140			
Benzo(a)pyrene	0.0763	0.00100	mg/L	0.1000		76	40-140			
Benzo(b)fluoranthene	0.0866	0.00100	mg/L	0.1000		87	40-140			
Benzo(g,h,i)perylene	0.0848	0.00400	mg/L	0.1000		85	40-140			
Benzo(k)fluoranthene	0.0771	0.00100	mg/L	0.1000		77	40-140			
Chrysene	0.0777	0.00100	mg/L	0.1000		78	40-140			
Dibenzo(a,h)Anthracene	0.0849	0.00100	mg/L	0.1000		85	40-140			
Fluoranthene	0.0815	0.00400	mg/L	0.1000		81	40-140			
Fluorene	0.0816	0.00400	mg/L	0.1000		82	40-140			
Hexachlorobenzene	0.109	0.00400	mg/L	0.1000		109	40-140			
Indeno(1,2,3-cd)Pyrene	0.0863	0.00100	mg/L	0.1000		86	40-140			
Naphthalene	0.0705	0.00400	mg/L	0.1000		71	40-140			
Pentachlorophenol	0.0756	0.0180	mg/L	0.1000		76	30-130			
Phenanthrene	0.0800	0.00400	mg/L	0.1000		80	40-140			
Pyrene	0.0815	0.00400	mg/L	0.1000		81	40-140			
LCS Dup										
2-Methylnaphthalene	0.0784	0.00400	mg/L	0.1000		78	40-140	5	20	
Acenaphthene	0.0869	0.00400	mg/L	0.1000		87	40-140	4	20	
Acenaphthylene	0.0822	0.00400	mg/L	0.1000		82	40-140	4	20	
Anthracene	0.0823	0.00400	mg/L	0.1000		82	40-140	4	20	
Benzo(a)anthracene	0.0822	0.00100	mg/L	0.1000		82	40-140	5	20	
Benzo(a)pyrene	0.0789	0.00100	mg/L	0.1000		79	40-140	3	20	
Benzo(b)fluoranthene	0.0922	0.00100	mg/L	0.1000		92	40-140	6	20	
Benzo(g,h,i)perylene	0.0895	0.00400	mg/L	0.1000		89	40-140	5	20	
Benzo(k)fluoranthene	0.0783	0.00100	mg/L	0.1000		78	40-140	1	20	
Chrysene	0.0783	0.00100	mg/L	0.1000		78	40-140	0.9	20	
Dibenzo(a,h)Anthracene	0.0894	0.00100	mg/L	0.1000		89	40-140	5	20	
Fluoranthene	0.0853	0.00400	mg/L	0.1000		85	40-140	5	20	
Fluorene	0.0853	0.00400	mg/L	0.1000		85	40-140	4	20	
Hexachlorobenzene	0.108	0.00400	mg/L	0.1000		108	40-140	1	20	
Indeno(1,2,3-cd)Pyrene	0.0931	0.00100	mg/L	0.1000		93	40-140	8	20	
Naphthalene	0.0738	0.00400	mg/L	0.1000		74	40-140	4	20	
Pentachlorophenol	0.0776	0.0180	mg/L	0.1000		78	30-130	3	20	
Phenanthrene	0.0831	0.00400	mg/L	0.1000		83	40-140	4	20	
Pyrene	0.0835	0.00400	mg/L	0.1000		84	40-140	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20A0196

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

Shipped/Delivered Via: ESS Courier

ESS Project ID: 20A0196
Date Received: 1/9/2020
Project Due Date: 1/15/2020
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.2 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / NA

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

Sample Receiving Notes:

One vial for MW-7 rec'd with a cracked cap, sample intact (vial -809).

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	1786	Yes	N/A	Yes	1L Amber	NP	
1	1787	Yes	N/A	Yes	1L Amber	NP	
1	1788	Yes	N/A	Yes	1L Amber	NP	
1	1789	Yes	N/A	Yes	1L Amber	NP	
1	1790	Yes	N/A	Yes	1L Amber	NP	
1	1801	Yes	N/A	Yes	250 mL Poly	HNO3	
1	1804	Yes	No	Yes	VOA Vial	HCl	
1	1805	Yes	No	Yes	VOA Vial	HCl	
1	1806	Yes	No	Yes	VOA Vial	HCl	
2	1791	Yes	N/A	Yes	1L Amber	NP	
2	1792	Yes	N/A	Yes	1L Amber	NP	
2	1793	Yes	N/A	Yes	1L Amber	NP	
2	1794	Yes	N/A	Yes	1L Amber	NP	
2	1795	Yes	N/A	Yes	1L Amber	NP	
2	1802	Yes	N/A	Yes	250 mL Poly	HNO3	
2	1807	Yes	No	Yes	VOA Vial	HCl	
2	1808	Yes	No	Yes	VOA Vial	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 20A0196
Date Received: 1/9/2020

2	1809	Yes	No	Yes	VOA Vial	HCl
3	1796	Yes	N/A	Yes	1L Amber	NP
3	1797	Yes	N/A	Yes	1L Amber	NP
3	1798	Yes	N/A	Yes	1L Amber	NP
3	1799	Yes	N/A	Yes	1L Amber	NP
3	1800	Yes	N/A	Yes	1L Amber	NP
3	1803	Yes	N/A	Yes	250 mL Poly	HNO3
3	1810	Yes	No	Yes	VOA Vial	HCl
3	1811	Yes	No	Yes	VOA Vial	HCl
3	1812	Yes	No	Yes	VOA Vial	HCl
4	1813	Yes	No	Yes	VOA Vial	HCl

2nd Review

Were all containers scanned into storage/lab? Initials_____

Are barcode labels on correct containers? (Yes) / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: _____ Date & Time: 1/9/20 2089

Reviewed By: _____ Date & Time: 01-9-20 2103

Delivered By: _____ 01-9-20 2103

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 20A0196

Turn Time: 5 Days

Regulatory State: RI

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits

Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA GeoEnvironmental

Project #: 346410

Project Name: Truk-Away Landfill

Contact Person: Richard Carlone

Address:

City: Providence

State: RI

Zip Code: 02909

PO #:

Telephone Number:

FAX Number:

Email Address: richard.carlone@gza.com

Analysis:

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	SVOC	TPH	Pesticides	PCBs	Metals[1]
1	1/9/20	0855	Grab	GW	MW-1	X	X	X	X	X	X
2	1/9/20	0957	Grab	GW	MW-7	X	X	X	X	X	X
3	1/9/20	0959	Grab	GW	MW-101	X	X	X	X	X	X
4	1/9/20	0800			Trip Blank	X					
					Container Type	V	AG	AG	AG	AG	P
					Container Volume	7	6	6	6	6	3
					Preservation Code	2	1	1	1	1	4
					Number of Containers per Sample	3	2	1	1	1	1

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Sampled by: Rowan Hauser / Marissa Kelly / Ben Ramos

Laboratory Use Only

Cooler Present: ——— ⊖ Drop Off ○ Pickup

Seals Intact: —

Cooler Temperature: Ice 5, 2, 4.1 °C

Comments: 1. Metals: 15 solid waste metals, mercury
Please specify "Other" preservative and containers types in this space
* Special pricing per Keith Braga *

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 1/9/20 1155	[signature] 1/9/2020 11:59		
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 20B0446

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:36 pm, Feb 24, 2020

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

SAMPLE RECEIPT

The following samples were received on February 14, 2020 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
20B0446-01	MW-107R	Ground Water	6010C, 6020A, 7010, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

PROJECT NARRATIVE

8100M Total Petroleum Hydrocarbons

DB01916-BS2 **Blank Spike recovery is above upper control limit (B+).**
Nonadecane (C19) (216% @ 40-140%)

8260B Volatile Organic Compounds

D0B0266-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Bromomethane (42% @ 30%)

DB01825-BS1 **Blank Spike recovery is below lower control limit (B-).**
Bromomethane (66% @ 70-130%)

DB01825-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Bromomethane (68% @ 70-130%)

8270D Semi-Volatile Organic Compounds

D0B0306-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (91% @ 80-120%), 4,6-Dinitro-2-Methylphenol (89% @ 80-120%), Benzoic Acid (97% @ 80-120%)

D0B0306-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Nitroaniline (29% @ 20%), 4-Nitrophenol (26% @ 20%)

D0B0306-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Chloroaniline (24% @ 20%), Hexachlorocyclopentadiene (45% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds

D0B0304-CCV1 **Calibration required quadratic regression (Q).**
Pentachlorophenol (114% @ 80-120%)

D0B0304-TUN1 **DDT breakdown > 20%**

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	**0.003** (0.001)		6020A		1	BJV	02/19/20 13:47	50	25	DB01839
Arsenic	**0.008** (0.002)		7010		1	KJK	02/19/20 17:33	50	25	DB01839
Barium	**0.126** (0.025)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Beryllium	**0.0014** (0.0005)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Cadmium	ND (0.0025)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Chromium	**0.042** (0.010)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Cobalt	**0.012** (0.010)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Copper	**0.033** (0.010)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Lead	**0.084** (0.010)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Nickel	ND (0.025)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Selenium	ND (0.025)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Silver	ND (0.005)		6010C		1	KJK	02/19/20 12:56	50	25	DB01839
Thallium	ND (0.001)		6020A		1	NAR	02/20/20 12:11	50	25	DB01839
Vanadium	**0.046** (0.010)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839
Zinc	**0.353** (0.025)		6010C		1	BJV	02/18/20 23:01	50	25	DB01839

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: DMC
Prepared: 2/18/20 11:33

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
4,4´-DDE	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
4,4´-DDT	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Aldrin	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
alpha-BHC	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
alpha-Chlordane	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
beta-BHC	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Chlordane (Total)	ND (0.000467)		8081B		1	02/20/20 18:11	D0B0310	DB01808
delta-BHC	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Dieldrin	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Endosulfan I	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Endosulfan II	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Endosulfan Sulfate	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Endrin	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Endrin Aldehyde	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Endrin Ketone	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
gamma-Chlordane	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Heptachlor	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Heptachlor Epoxide	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Hexachlorobenzene	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Methoxychlor	ND (0.000047)		8081B		1	02/20/20 18:11	D0B0310	DB01808
Toxaphene	ND (0.00121)		8081B		1	02/20/20 18:11	D0B0310	DB01808

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*40 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJV
Prepared: 2/19/20 12:04

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1221	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1232	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1242	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1248	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1254	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1260	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1262	ND (0.09)		8082A		1	02/19/20 18:18		DB01915
Aroclor 1268	ND (0.09)		8082A		1	02/19/20 18:18		DB01915

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*65 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*89 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: ZLC
Prepared: 2/19/20 13:40

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1.18** (0.19)		8100M		1	02/20/20 15:16	D0B0284	DB01916

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*92 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,1-Dichloroethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,1-Dichloroethene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,1-Dichloropropene	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2,4-Trimethylbenzene	**0.0038** (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2-Dibromoethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2-Dichloroethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,2-Dichloropropane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,3,5-Trimethylbenzene	**0.0013** (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,3-Dichloropropane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1,4-Dioxane - Screen	ND (0.500)		8260B		1	02/18/20 14:22	D0B0266	DB01825
1-Chlorohexane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
2,2-Dichloropropane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
2-Butanone	ND (0.0100)		8260B		1	02/18/20 14:22	D0B0266	DB01825
2-Chlorotoluene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
2-Hexanone	ND (0.0100)		8260B		1	02/18/20 14:22	D0B0266	DB01825
4-Chlorotoluene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
4-Isopropyltoluene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Acetone	**0.0296** (0.0100)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Benzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Bromobenzene	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Bromodichloromethane	ND (0.0006)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Bromoform	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Bromomethane	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Carbon Disulfide	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Carbon Tetrachloride	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Chlorobenzene	**0.0015** (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Chloroethane	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Chloroform	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Chloromethane	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Dibromochloromethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Dibromomethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Dichlorodifluoromethane	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Diethyl Ether	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Di-isopropyl ether	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Ethylbenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Hexachlorobutadiene	ND (0.0006)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Hexachloroethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Isopropylbenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Methylene Chloride	ND (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Naphthalene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
n-Butylbenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
n-Propylbenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
sec-Butylbenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Styrene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
tert-Butylbenzene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Tetrachloroethene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Toluene	**0.0033** (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Trichloroethene	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Trichlorofluoromethane	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Vinyl Acetate	ND (0.0050)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Vinyl Chloride	ND (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Xylene O	**0.0028** (0.0010)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Xylene P,M	**0.0202** (0.0020)		8260B		1	02/18/20 14:22	D0B0266	DB01825
Xylenes (Total)	**0.0230** (0.00200)		8260B		1	02/18/20 14:22		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*93 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*98 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 2/18/20 17:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
1,2-Dichlorobenzene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
1,3-Dichlorobenzene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
1,4-Dichlorobenzene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,4-Dichlorophenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,4-Dimethylphenol	ND (0.047)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,4-Dinitrophenol	ND (0.047)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,4-Dinitrotoluene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2,6-Dinitrotoluene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2-Chloronaphthalene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2-Chlorophenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2-Methylphenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2-Nitroaniline	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
2-Nitrophenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	02/20/20 17:20	D0B0306	DB01809
3+4-Methylphenol	ND (0.019)		8270D		1	02/20/20 17:20	D0B0306	DB01809
3-Nitroaniline	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4-Chloroaniline	ND (0.019)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4-Nitroaniline	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
4-Nitrophenol	ND (0.047)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Acetophenone	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Aniline	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Azobenzene	ND (0.019)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Benzoic Acid	ND (0.093)		8270D		1	02/20/20 17:20	D0B0306	DB01809

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: TJ
Prepared: 2/18/20 17:00

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Butylbenzylphthalate	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Carbazole	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Dibenzofuran	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Diethylphthalate	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Dimethylphthalate	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Di-n-butylphthalate	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Di-n-octylphthalate	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Hexachlorobutadiene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Hexachloroethane	ND (0.005)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Isophorone	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Nitrobenzene	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
N-Nitrosodimethylamine	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
N-nitrosodiphenylamine	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Phenol	ND (0.009)		8270D		1	02/20/20 17:20	D0B0306	DB01809
Pyridine	ND (0.093)		8270D		1	02/20/20 17:20	D0B0306	DB01809

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*64 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*72 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*75 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*65 %*		*30-130*
Surrogate: 2-Fluorophenol	*72 %*		*15-110*
Surrogate: Nitrobenzene-d5	*86 %*		*30-130*
Surrogate: Phenol-d6	*87 %*		*15-110*
Surrogate: p-Terphenyl-d14	*58 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: MW-107R
Date Sampled: 02/14/20 12:35
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 20B0446
ESS Laboratory Sample ID: 20B0446-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: VSC
Prepared: 2/18/20 17:00

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00040** (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Acenaphthene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Acenaphthylene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Anthracene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Chrysene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Fluoranthene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Fluorene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Naphthalene	**0.00034** (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Pentachlorophenol	ND (0.00084)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Phenanthrene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809
Pyrene	ND (0.00019)		8270D SIM		1	02/19/20 23:57	D0B0304	DB01809

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch DB01839 - 3005A/200.7										
Blank										
Barium	ND	0.025	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0025	mg/L							
Chromium	ND	0.010	mg/L							
Cobalt	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Lead	ND	0.010	mg/L							
Nickel	ND	0.025	mg/L							
Selenium	ND	0.025	mg/L							
Silver	ND	0.005	mg/L							
Vanadium	ND	0.010	mg/L							
Zinc	ND	0.025	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Thallium	ND	0.001	mg/L							
Blank										
Arsenic	ND	0.002	mg/L							
LCS										
Barium	0.255	0.025	mg/L	0.2500		102	80-120			
Beryllium	0.0244	0.0005	mg/L	0.02500		97	80-120			
Cadmium	0.118	0.0025	mg/L	0.1250		94	80-120			
Chromium	0.253	0.010	mg/L	0.2500		101	80-120			
Cobalt	0.255	0.010	mg/L	0.2500		102	80-120			
Copper	0.249	0.010	mg/L	0.2500		100	80-120			
Lead	0.243	0.010	mg/L	0.2500		97	80-120			
Nickel	0.257	0.025	mg/L	0.2500		103	80-120			
Selenium	0.498	0.025	mg/L	0.5000		100	80-120			
Silver	0.129	0.005	mg/L	0.1250		103	80-120			
Vanadium	0.251	0.010	mg/L	0.2500		100	80-120			
Zinc	0.256	0.025	mg/L	0.2500		102	80-120			
LCS										
Antimony	0.241	0.005	mg/L	0.2500		97	80-120			
Thallium	0.224	0.005	mg/L	0.2500		90	80-120			
LCS										
Arsenic	0.215	0.062	mg/L	0.2500		86	80-120			
LCS Dup										
Barium	0.286	0.025	mg/L	0.2500		115	80-120	11	20	
Beryllium	0.0275	0.0005	mg/L	0.02500		110	80-120	12	20	
Cadmium	0.135	0.0025	mg/L	0.1250		108	80-120	14	20	
Chromium	0.283	0.010	mg/L	0.2500		113	80-120	11	20	
Cobalt	0.288	0.010	mg/L	0.2500		115	80-120	12	20	
Copper	0.280	0.010	mg/L	0.2500		112	80-120	12	20	
Lead	0.284	0.010	mg/L	0.2500		114	80-120	15	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch DB01839 - 3005A/200.7										
Nickel	0.286	0.025	mg/L	0.2500		114	80-120	11	20	
Selenium	0.568	0.025	mg/L	0.5000		114	80-120	13	20	
Silver	0.145	0.005	mg/L	0.1250		116	80-120	12	20	
Vanadium	0.282	0.010	mg/L	0.2500		113	80-120	12	20	
Zinc	0.274	0.025	mg/L	0.2500		110	80-120	7	20	
LCS Dup										
Antimony	0.277	0.005	mg/L	0.2500		111	80-120	14	20	
Thallium	0.258	0.005	mg/L	0.2500		103	80-120	14	20	
LCS Dup										
Arsenic	0.254	0.062	mg/L	0.2500		102	80-120	17	20	
8081B Organochlorine Pesticides										
Batch DB01808 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							
Endosulfan I [2C]	ND	0.000050	mg/L							
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch DB01808 - 3510C										
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Surrogate: Decachlorobiphenyl	*0.000196*		mg/L	*0.0002500*		*79*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000201*		mg/L	*0.0002500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000199*		mg/L	*0.0002500*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000203*		mg/L	*0.0002500*		*81*	*30-150*			
LCS										
4,4´-DDD	0.000281	0.000050	mg/L	0.0002500		112	40-140			
4,4´-DDD [2C]	0.000274	0.000050	mg/L	0.0002500		109	40-140			
4,4´-DDE	0.000254	0.000050	mg/L	0.0002500		102	40-140			
4,4´-DDE [2C]	0.000274	0.000050	mg/L	0.0002500		109	40-140			
4,4´-DDT	0.000258	0.000050	mg/L	0.0002500		103	40-140			
4,4´-DDT [2C]	0.000250	0.000050	mg/L	0.0002500		100	40-140			
Aldrin	0.000215	0.000050	mg/L	0.0002500		86	40-140			
Aldrin [2C]	0.000220	0.000050	mg/L	0.0002500		88	40-140			
alpha-BHC	0.000257	0.000050	mg/L	0.0002500		103	40-140			
alpha-BHC [2C]	0.000252	0.000050	mg/L	0.0002500		101	40-140			
alpha-Chlordane	0.000235	0.000050	mg/L	0.0002500		94	40-140			
alpha-Chlordane [2C]	0.000253	0.000050	mg/L	0.0002500		101	40-140			
beta-BHC	0.000260	0.000050	mg/L	0.0002500		104	40-140			
beta-BHC [2C]	0.000258	0.000050	mg/L	0.0002500		103	40-140			
delta-BHC	0.000197	0.000050	mg/L	0.0002500		79	40-140			
delta-BHC [2C]	0.000195	0.000050	mg/L	0.0002500		78	40-140			
Dieldrin	0.000275	0.000050	mg/L	0.0002500		110	40-140			
Dieldrin [2C]	0.000288	0.000050	mg/L	0.0002500		115	40-140			
Endosulfan I	0.000256	0.000050	mg/L	0.0002500		102	40-140			
Endosulfan I [2C]	0.000267	0.000050	mg/L	0.0002500		107	40-140			
Endosulfan II	0.000307	0.000050	mg/L	0.0002500		123	40-140			
Endosulfan II [2C]	0.000311	0.000050	mg/L	0.0002500		124	40-140			
Endosulfan Sulfate	0.000234	0.000050	mg/L	0.0002500		94	40-140			
Endosulfan Sulfate [2C]	0.000252	0.000050	mg/L	0.0002500		101	40-140			
Endrin	0.000271	0.000050	mg/L	0.0002500		108	40-140			
Endrin [2C]	0.000279	0.000050	mg/L	0.0002500		112	40-140			
Endrin Aldehyde	0.000256	0.000050	mg/L	0.0002500		102	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch DB01808 - 3510C										
Endrin Aldehyde [2C]	0.000279	0.000050	mg/L	0.0002500		111	40-140			
Endrin Ketone	0.000269	0.000050	mg/L	0.0002500		107	40-140			
Endrin Ketone [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140			
gamma-BHC (Lindane)	0.000260	0.000050	mg/L	0.0002500		104	40-140			
gamma-BHC (Lindane) [2C]	0.000263	0.000050	mg/L	0.0002500		105	40-140			
gamma-Chlordane	0.000239	0.000050	mg/L	0.0002500		96	40-140			
gamma-Chlordane [2C]	0.000254	0.000050	mg/L	0.0002500		102	40-140			
Heptachlor	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Heptachlor [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140			
Heptachlor Epoxide	0.000272	0.000050	mg/L	0.0002500		109	40-140			
Heptachlor Epoxide [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140			
Hexachlorobenzene	0.000221	0.000050	mg/L	0.0002500		88	40-140			
Hexachlorobenzene [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140			
Methoxychlor	0.000243	0.000050	mg/L	0.0002500		97	40-140			
Methoxychlor [2C]	0.000262	0.000050	mg/L	0.0002500		105	40-140			
Surrogate: Decachlorobiphenyl	*0.000218*		mg/L	*0.0002500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000225*		mg/L	*0.0002500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000201*		mg/L	*0.0002500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000208*		mg/L	*0.0002500*		*83*	*30-150*			
LCS Dup										
4,4´-DDD	0.000289	0.000050	mg/L	0.0002500		116	40-140	3	20	
4,4´-DDD [2C]	0.000280	0.000050	mg/L	0.0002500		112	40-140	2	20	
4,4´-DDE	0.000263	0.000050	mg/L	0.0002500		105	40-140	3	20	
4,4´-DDE [2C]	0.000283	0.000050	mg/L	0.0002500		113	40-140	3	20	
4,4´-DDT	0.000262	0.000050	mg/L	0.0002500		105	40-140	2	20	
4,4´-DDT [2C]	0.000254	0.000050	mg/L	0.0002500		102	40-140	1	20	
Aldrin	0.000230	0.000050	mg/L	0.0002500		92	40-140	7	20	
Aldrin [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140	7	20	
alpha-BHC	0.000256	0.000050	mg/L	0.0002500		103	40-140	0.2	20	
alpha-BHC [2C]	0.000253	0.000050	mg/L	0.0002500		101	40-140	0.3	20	
alpha-Chlordane	0.000242	0.000050	mg/L	0.0002500		97	40-140	3	20	
alpha-Chlordane [2C]	0.000262	0.000050	mg/L	0.0002500		105	40-140	4	20	
beta-BHC	0.000262	0.000050	mg/L	0.0002500		105	40-140	0.7	20	
beta-BHC [2C]	0.000261	0.000050	mg/L	0.0002500		104	40-140	1	20	
delta-BHC	0.000198	0.000050	mg/L	0.0002500		79	40-140	0.8	20	
delta-BHC [2C]	0.000196	0.000050	mg/L	0.0002500		78	40-140	0.5	20	
Dieldrin	0.000282	0.000050	mg/L	0.0002500		113	40-140	3	20	
Dieldrin [2C]	0.000294	0.000050	mg/L	0.0002500		118	40-140	2	20	
Endosulfan I	0.000265	0.000050	mg/L	0.0002500		106	40-140	3	20	
Endosulfan I [2C]	0.000273	0.000050	mg/L	0.0002500		109	40-140	2	20	
Endosulfan II	0.000313	0.000050	mg/L	0.0002500		125	40-140	2	20	
Endosulfan II [2C]	0.000319	0.000050	mg/L	0.0002500		128	40-140	3	20	
Endosulfan Sulfate	0.000241	0.000050	mg/L	0.0002500		96	40-140	3	20	
Endosulfan Sulfate [2C]	0.000256	0.000050	mg/L	0.0002500		102	40-140	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch DB01808 - 3510C										
Endrin	0.000277	0.000050	mg/L	0.0002500		111	40-140	2	20	
Endrin [2C]	0.000285	0.000050	mg/L	0.0002500		114	40-140	2	20	
Endrin Aldehyde	0.000262	0.000050	mg/L	0.0002500		105	40-140	2	20	
Endrin Aldehyde [2C]	0.000278	0.000050	mg/L	0.0002500		111	40-140	0.3	20	
Endrin Ketone	0.000277	0.000050	mg/L	0.0002500		111	40-140	3	20	
Endrin Ketone [2C]	0.000285	0.000050	mg/L	0.0002500		114	40-140	2	20	
gamma-BHC (Lindane)	0.000261	0.000050	mg/L	0.0002500		104	40-140	0.3	20	
gamma-BHC (Lindane) [2C]	0.000263	0.000050	mg/L	0.0002500		105	40-140	0.2	20	
gamma-Chlordane	0.000250	0.000050	mg/L	0.0002500		100	40-140	4	20	
gamma-Chlordane [2C]	0.000265	0.000050	mg/L	0.0002500		106	40-140	4	20	
Heptachlor	0.000232	0.000050	mg/L	0.0002500		93	40-140	4	20	
Heptachlor [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140	4	20	
Heptachlor Epoxide	0.000277	0.000050	mg/L	0.0002500		111	40-140	2	20	
Heptachlor Epoxide [2C]	0.000285	0.000050	mg/L	0.0002500		114	40-140	1	20	
Hexachlorobenzene	0.000226	0.000050	mg/L	0.0002500		91	40-140	3	20	
Hexachlorobenzene [2C]	0.000236	0.000050	mg/L	0.0002500		95	40-140	2	20	
Methoxychlor	0.000247	0.000050	mg/L	0.0002500		99	40-140	2	20	
Methoxychlor [2C]	0.000265	0.000050	mg/L	0.0002500		106	40-140	1	20	
Surrogate: Decachlorobiphenyl	*0.000219*		mg/L	*0.0002500*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000225*		mg/L	*0.0002500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000196*		mg/L	*0.0002500*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000209*		mg/L	*0.0002500*		*84*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch DB01915 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch DB01915 - 3510C										
Surrogate: Decachlorobiphenyl	*0.0426*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0402*		ug/L	*0.05000*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0370*		ug/L	*0.05000*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0438*		ug/L	*0.05000*		*88*	*30-150*			
LCS										
Aroclor 1016	0.86	0.05	ug/L	1.000		86	40-140			
Aroclor 1016 [2C]	0.87	0.05	ug/L	1.000		87	40-140			
Aroclor 1260	0.87	0.05	ug/L	1.000		87	40-140			
Aroclor 1260 [2C]	0.83	0.05	ug/L	1.000		83	40-140			
Surrogate: Decachlorobiphenyl	*0.0488*		ug/L	*0.05000*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0454*		ug/L	*0.05000*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0420*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0434*		ug/L	*0.05000*		*87*	*30-150*			
LCS Dup										
Aroclor 1016	0.90	0.05	ug/L	1.000		90	40-140	5	20	
Aroclor 1016 [2C]	0.90	0.05	ug/L	1.000		90	40-140	4	20	
Aroclor 1260	0.95	0.05	ug/L	1.000		95	40-140	8	20	
Aroclor 1260 [2C]	0.89	0.05	ug/L	1.000		89	40-140	7	20	
Surrogate: Decachlorobiphenyl	*0.0528*		ug/L	*0.05000*		*106*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0493*		ug/L	*0.05000*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0433*		ug/L	*0.05000*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0453*		ug/L	*0.05000*		*91*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch DB01916 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.0925*		mg/L	*0.1000*		*93*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch DB01916 - 3510C										
LCS										
Decane (C10)	0.034	0.005	mg/L	0.05000		67	40-140			
Docosane (C22)	0.042	0.005	mg/L	0.05000		84	40-140			
Dodecane (C12)	0.039	0.005	mg/L	0.05000		77	40-140			
Eicosane (C20)	0.043	0.005	mg/L	0.05000		86	40-140			
Hexacosane (C26)	0.039	0.005	mg/L	0.05000		79	40-140			
Hexadecane (C16)	0.042	0.005	mg/L	0.05000		84	40-140			
Nonadecane (C19)	0.054	0.005	mg/L	0.05000		109	40-140			
Nonane (C9)	0.024	0.005	mg/L	0.05000		48	30-140			
Octacosane (C28)	0.039	0.005	mg/L	0.05000		78	40-140			
Octadecane (C18)	0.042	0.005	mg/L	0.05000		84	40-140			
Tetracosane (C24)	0.040	0.005	mg/L	0.05000		81	40-140			
Tetradecane (C14)	0.040	0.005	mg/L	0.05000		80	40-140			
Total Petroleum Hydrocarbons	0.556	0.20	mg/L	0.7000		79	40-140			
Triacontane (C30)	0.037	0.005	mg/L	0.05000		75	40-140			
Surrogate: O-Terphenyl	*0.0823*		mg/L	*0.1000*		*82*	*40-140*			
LCS										
Decane (C10)	0.004	0.005	mg/L	0.01000		42	40-140			
Docosane (C22)	0.009	0.005	mg/L	0.01000		86	40-140			
Dodecane (C12)	0.006	0.005	mg/L	0.01000		59	40-140			
Eicosane (C20)	0.009	0.005	mg/L	0.01000		89	40-140			
Hexacosane (C26)	0.008	0.005	mg/L	0.01000		82	40-140			
Hexadecane (C16)	0.008	0.005	mg/L	0.01000		81	40-140			
Nonadecane (C19)	0.022	0.005	mg/L	0.01000		216	40-140			B+
Nonane (C9)	0.003	0.005	mg/L	0.01000		31	30-140			
Octacosane (C28)	0.008	0.005	mg/L	0.01000		82	40-140			
Octadecane (C18)	0.008	0.005	mg/L	0.01000		84	40-140			
Tetracosane (C24)	0.008	0.005	mg/L	0.01000		84	40-140			
Tetradecane (C14)	0.007	0.005	mg/L	0.01000		73	40-140			
Total Petroleum Hydrocarbons	0.119	0.20	mg/L	0.1400		85	40-140			
Triacontane (C30)	0.008	0.005	mg/L	0.01000		81	40-140			
Surrogate: O-Terphenyl	*0.0788*		mg/L	*0.1000*		*79*	*40-140*			
LCS Dup										
Decane (C10)	0.034	0.005	mg/L	0.05000		68	40-140	1	25	
Docosane (C22)	0.042	0.005	mg/L	0.05000		84	40-140	0.4	25	
Dodecane (C12)	0.038	0.005	mg/L	0.05000		77	40-140	0.4	25	
Eicosane (C20)	0.042	0.005	mg/L	0.05000		84	40-140	2	25	
Hexacosane (C26)	0.040	0.005	mg/L	0.05000		79	40-140	0.7	25	
Hexadecane (C16)	0.042	0.005	mg/L	0.05000		84	40-140	0.4	25	
Nonadecane (C19)	0.054	0.005	mg/L	0.05000		109	40-140	0.1	25	
Nonane (C9)	0.025	0.005	mg/L	0.05000		50	30-140	4	25	
Octacosane (C28)	0.039	0.005	mg/L	0.05000		78	40-140	0.08	25	
Octadecane (C18)	0.042	0.005	mg/L	0.05000		84	40-140	0.07	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch DB01916 - 3510C										
Tetracosane (C24)	0.041	0.005	mg/L	0.05000		82	40-140	1	25	
Tetradecane (C14)	0.040	0.005	mg/L	0.05000		80	40-140	0.3	25	
Total Petroleum Hydrocarbons	0.557	0.20	mg/L	0.7000		80	40-140	0.2	25	
Triacontane (C30)	0.037	0.005	mg/L	0.05000		75	40-140	0.2	25	
Surrogate: O-Terphenyl	*0.0801*		mg/L	*0.1000*		*80*	*40-140*			
8260B Volatile Organic Compounds										
Batch DB01825 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DB01825 - 5030B										
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0264*		mg/L	*0.02500*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0242*		mg/L	*0.02500*		*97*	*70-130*			
Surrogate: Toluene-d8	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	11.0		ug/L	10.00		110	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DB01825 - 5030B										
1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2,2-Tetrachloroethane	8.12		ug/L	10.00		81	70-130			
1,1,2-Trichloroethane	8.89		ug/L	10.00		89	70-130			
1,1-Dichloroethane	8.83		ug/L	10.00		88	70-130			
1,1-Dichloroethene	8.98		ug/L	10.00		90	70-130			
1,1-Dichloropropene	9.52		ug/L	10.00		95	70-130			
1,2,3-Trichlorobenzene	10.0		ug/L	10.00		100	70-130			
1,2,3-Trichloropropane	8.68		ug/L	10.00		87	70-130			
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,2,4-Trimethylbenzene	9.76		ug/L	10.00		98	70-130			
1,2-Dibromo-3-Chloropropane	8.96		ug/L	10.00		90	70-130			
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130			
1,2-Dichlorobenzene	9.81		ug/L	10.00		98	70-130			
1,2-Dichloroethane	10.8		ug/L	10.00		108	70-130			
1,2-Dichloropropane	8.45		ug/L	10.00		84	70-130			
1,3,5-Trimethylbenzene	9.60		ug/L	10.00		96	70-130			
1,3-Dichlorobenzene	9.77		ug/L	10.00		98	70-130			
1,3-Dichloropropane	10.0		ug/L	10.00		100	70-130			
1,4-Dichlorobenzene	9.94		ug/L	10.00		99	70-130			
1,4-Dioxane - Screen	178		ug/L	200.0		89	0-332			
1-Chlorohexane	9.21		ug/L	10.00		92	70-130			
2,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
2-Butanone	44.4		ug/L	50.00		89	70-130			
2-Chlorotoluene	9.46		ug/L	10.00		95	70-130			
2-Hexanone	47.2		ug/L	50.00		94	70-130			
4-Chlorotoluene	9.41		ug/L	10.00		94	70-130			
4-Isopropyltoluene	9.35		ug/L	10.00		94	70-130			
4-Methyl-2-Pentanone	40.1		ug/L	50.00		80	70-130			
Acetone	48.3		ug/L	50.00		97	70-130			
Benzene	8.67		ug/L	10.00		87	70-130			
Bromobenzene	9.62		ug/L	10.00		96	70-130			
Bromochloromethane	9.52		ug/L	10.00		95	70-130			
Bromodichloromethane	10.7		ug/L	10.00		107	70-130			
Bromoform	11.5		ug/L	10.00		115	70-130			
Bromomethane	6.58		ug/L	10.00		66	70-130			B-
Carbon Disulfide	9.04		ug/L	10.00		90	70-130			
Carbon Tetrachloride	11.3		ug/L	10.00		113	70-130			
Chlorobenzene	9.83		ug/L	10.00		98	70-130			
Chloroethane	7.95		ug/L	10.00		80	70-130			
Chloroform	10.2		ug/L	10.00		102	70-130			
Chloromethane	8.87		ug/L	10.00		89	70-130			
cis-1,2-Dichloroethene	9.19		ug/L	10.00		92	70-130			
cis-1,3-Dichloropropene	9.72		ug/L	10.00		97	70-130			
Dibromochloromethane	10.2		ug/L	10.00		102	70-130			
Dibromomethane	9.57		ug/L	10.00		96	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DB01825 - 5030B										
Dichlorodifluoromethane	9.14		ug/L	10.00		91	70-130			
Diethyl Ether	8.61		ug/L	10.00		86	70-130			
Di-isopropyl ether	8.42		ug/L	10.00		84	70-130			
Ethyl tertiary-butyl ether	8.63		ug/L	10.00		86	70-130			
Ethylbenzene	9.70		ug/L	10.00		97	70-130			
Hexachlorobutadiene	11.0		ug/L	10.00		110	70-130			
Hexachloroethane	9.35		ug/L	10.00		94	70-130			
Isopropylbenzene	9.46		ug/L	10.00		95	70-130			
Methyl tert-Butyl Ether	9.76		ug/L	10.00		98	70-130			
Methylene Chloride	8.99		ug/L	10.00		90	70-130			
Naphthalene	9.02		ug/L	10.00		90	70-130			
n-Butylbenzene	9.39		ug/L	10.00		94	70-130			
n-Propylbenzene	9.09		ug/L	10.00		91	70-130			
sec-Butylbenzene	9.13		ug/L	10.00		91	70-130			
Styrene	9.66		ug/L	10.00		97	70-130			
tert-Butylbenzene	9.46		ug/L	10.00		95	70-130			
Tertiary-amyl methyl ether	9.03		ug/L	10.00		90	70-130			
Tetrachloroethene	12.3		ug/L	10.00		123	70-130			
Tetrahydrofuran	7.25		ug/L	10.00		72	70-130			
Toluene	8.99		ug/L	10.00		90	70-130			
trans-1,2-Dichloroethene	9.24		ug/L	10.00		92	70-130			
trans-1,3-Dichloropropene	9.58		ug/L	10.00		96	70-130			
Trichloroethene	10.1		ug/L	10.00		101	70-130			
Trichlorofluoromethane	11.3		ug/L	10.00		113	70-130			
Vinyl Acetate	7.59		ug/L	10.00		76	70-130			
Vinyl Chloride	8.74		ug/L	10.00		87	70-130			
Xylene O	9.83		ug/L	10.00		98	70-130			
Xylene P,M	19.6		ug/L	20.00		98	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0262*		mg/L	*0.02500*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0260*		mg/L	*0.02500*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: Toluene-d8	*0.0244*		mg/L	*0.02500*		*97*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	11.4		ug/L	10.00		114	70-130	3	25	
1,1,1-Trichloroethane	10.3		ug/L	10.00		103	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	8.26		ug/L	10.00		83	70-130	2	25	
1,1,2-Trichloroethane	8.63		ug/L	10.00		86	70-130	3	25	
1,1-Dichloroethane	8.93		ug/L	10.00		89	70-130	1	25	
1,1-Dichloroethene	8.64		ug/L	10.00		86	70-130	4	25	
1,1-Dichloropropene	9.62		ug/L	10.00		96	70-130	1	25	
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130	1	25	
1,2,3-Trichloropropane	8.51		ug/L	10.00		85	70-130	2	25	
1,2,4-Trichlorobenzene	10.3		ug/L	10.00		103	70-130	0.6	25	
1,2,4-Trimethylbenzene	9.80		ug/L	10.00		98	70-130	0.4	25	
1,2-Dibromo-3-Chloropropane	8.83		ug/L	10.00		88	70-130	1	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DB01825 - 5030B										
1,2-Dibromoethane	9.97		ug/L	10.00		100	70-130	0.9	25	
1,2-Dichlorobenzene	9.55		ug/L	10.00		96	70-130	3	25	
1,2-Dichloroethane	10.6		ug/L	10.00		106	70-130	2	25	
1,2-Dichloropropane	8.60		ug/L	10.00		86	70-130	2	25	
1,3,5-Trimethylbenzene	9.64		ug/L	10.00		96	70-130	0.4	25	
1,3-Dichlorobenzene	9.79		ug/L	10.00		98	70-130	0.2	25	
1,3-Dichloropropane	9.86		ug/L	10.00		99	70-130	2	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	2	25	
1,4-Dioxane - Screen	178		ug/L	200.0		89	0-332	0.1	200	
1-Chlorohexane	9.11		ug/L	10.00		91	70-130	1	25	
2,2-Dichloropropane	10.1		ug/L	10.00		101	70-130	0.3	25	
2-Butanone	41.9		ug/L	50.00		84	70-130	6	25	
2-Chlorotoluene	9.56		ug/L	10.00		96	70-130	1	25	
2-Hexanone	43.3		ug/L	50.00		87	70-130	9	25	
4-Chlorotoluene	9.53		ug/L	10.00		95	70-130	1	25	
4-Isopropyltoluene	9.62		ug/L	10.00		96	70-130	3	25	
4-Methyl-2-Pentanone	39.0		ug/L	50.00		78	70-130	3	25	
Acetone	40.2		ug/L	50.00		80	70-130	18	25	
Benzene	8.62		ug/L	10.00		86	70-130	0.6	25	
Bromobenzene	9.71		ug/L	10.00		97	70-130	0.9	25	
Bromochloromethane	9.52		ug/L	10.00		95	70-130	0	25	
Bromodichloromethane	10.4		ug/L	10.00		104	70-130	3	25	
Bromoform	11.0		ug/L	10.00		110	70-130	5	25	
Bromomethane	6.75		ug/L	10.00		68	70-130	3	25	B-
Carbon Disulfide	8.92		ug/L	10.00		89	70-130	1	25	
Carbon Tetrachloride	11.0		ug/L	10.00		110	70-130	3	25	
Chlorobenzene	10.0		ug/L	10.00		100	70-130	2	25	
Chloroethane	7.97		ug/L	10.00		80	70-130	0.3	25	
Chloroform	10.0		ug/L	10.00		100	70-130	2	25	
Chloromethane	8.93		ug/L	10.00		89	70-130	0.7	25	
cis-1,2-Dichloroethene	8.90		ug/L	10.00		89	70-130	3	25	
cis-1,3-Dichloropropene	10.0		ug/L	10.00		100	70-130	3	25	
Dibromochloromethane	9.93		ug/L	10.00		99	70-130	3	25	
Dibromomethane	9.81		ug/L	10.00		98	70-130	2	25	
Dichlorodifluoromethane	8.84		ug/L	10.00		88	70-130	3	25	
Diethyl Ether	8.46		ug/L	10.00		85	70-130	2	25	
Di-isopropyl ether	8.56		ug/L	10.00		86	70-130	2	25	
Ethyl tertiary-butyl ether	8.58		ug/L	10.00		86	70-130	0.6	25	
Ethylbenzene	9.78		ug/L	10.00		98	70-130	0.8	25	
Hexachlorobutadiene	11.0		ug/L	10.00		110	70-130	0.5	25	
Hexachloroethane	8.90		ug/L	10.00		89	70-130	5	25	
Isopropylbenzene	9.47		ug/L	10.00		95	70-130	0.1	25	
Methyl tert-Butyl Ether	9.63		ug/L	10.00		96	70-130	1	25	
Methylene Chloride	9.07		ug/L	10.00		91	70-130	0.9	25	
Naphthalene	9.13		ug/L	10.00		91	70-130	1	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch DB01825 - 5030B										
n-Butylbenzene	9.48		ug/L	10.00		95	70-130	1	25	
n-Propylbenzene	9.24		ug/L	10.00		92	70-130	2	25	
sec-Butylbenzene	9.27		ug/L	10.00		93	70-130	2	25	
Styrene	9.85		ug/L	10.00		98	70-130	2	25	
tert-Butylbenzene	9.74		ug/L	10.00		97	70-130	3	25	
Tertiary-amyl methyl ether	9.01		ug/L	10.00		90	70-130	0.2	25	
Tetrachloroethene	12.0		ug/L	10.00		120	70-130	3	25	
Tetrahydrofuran	7.47		ug/L	10.00		75	70-130	3	25	
Toluene	9.05		ug/L	10.00		90	70-130	0.7	25	
trans-1,2-Dichloroethene	9.07		ug/L	10.00		91	70-130	2	25	
trans-1,3-Dichloropropene	9.50		ug/L	10.00		95	70-130	0.8	25	
Trichloroethene	10.0		ug/L	10.00		100	70-130	0.3	25	
Trichlorofluoromethane	11.1		ug/L	10.00		111	70-130	2	25	
Vinyl Acetate	7.65		ug/L	10.00		76	70-130	0.8	25	
Vinyl Chloride	8.66		ug/L	10.00		87	70-130	0.9	25	
Xylene O	9.92		ug/L	10.00		99	70-130	0.9	25	
Xylene P,M	19.9		ug/L	20.00		99	70-130	1	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0264*		mg/L	*0.02500*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0258*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0253*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0247*		mg/L	*0.02500*		*99*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0684*		mg/L	*0.1000*		*68*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.0991*		mg/L	*0.1500*		*66*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.111*		mg/L	*0.1500*		*74*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0671*		mg/L	*0.1000*		*67*	*30-130*			
Surrogate: 2-Fluorophenol	*0.100*		mg/L	*0.1500*		*67*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0864*		mg/L	*0.1000*		*86*	*30-130*			
Surrogate: Phenol-d6	*0.122*		mg/L	*0.1500*		*81*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0767*		mg/L	*0.1000*		*77*	*30-130*			
LCS										
1,1-Biphenyl	0.083	0.010	mg/L	0.1000		83	40-140			
1,2,4-Trichlorobenzene	0.075	0.010	mg/L	0.1000		75	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
1,2-Dichlorobenzene	0.074	0.010	mg/L	0.1000		74	40-140			
1,3-Dichlorobenzene	0.072	0.010	mg/L	0.1000		72	40-140			
1,4-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140			
2,3,4,6-Tetrachlorophenol	0.073	0.050	mg/L	0.1000		73	40-140			
2,4,5-Trichlorophenol	0.083	0.010	mg/L	0.1000		83	30-130			
2,4,6-Trichlorophenol	0.083	0.010	mg/L	0.1000		83	30-130			
2,4-Dichlorophenol	0.082	0.010	mg/L	0.1000		82	30-130			
2,4-Dimethylphenol	0.089	0.050	mg/L	0.1000		89	30-130			
2,4-Dinitrophenol	0.094	0.050	mg/L	0.1000		94	30-130			
2,4-Dinitrotoluene	0.091	0.010	mg/L	0.1000		91	40-140			
2,6-Dinitrotoluene	0.092	0.010	mg/L	0.1000		92	40-140			
2-Chloronaphthalene	0.080	0.010	mg/L	0.1000		80	40-140			
2-Chlorophenol	0.079	0.010	mg/L	0.1000		79	30-130			
2-Methylphenol	0.089	0.010	mg/L	0.1000		89	30-130			
2-Nitroaniline	0.120	0.010	mg/L	0.1000		120	40-140			
2-Nitrophenol	0.079	0.010	mg/L	0.1000		79	30-130			
3,3´-Dichlorobenzidine	0.080	0.020	mg/L	0.1000		80	40-140			
3+4-Methylphenol	0.192	0.020	mg/L	0.2000		96	30-130			
3-Nitroaniline	0.098	0.010	mg/L	0.1000		98	40-140			
4,6-Dinitro-2-Methylphenol	0.098	0.050	mg/L	0.1000		98	30-130			
4-Bromophenyl-phenylether	0.087	0.010	mg/L	0.1000		87	40-140			
4-Chloro-3-Methylphenol	0.098	0.010	mg/L	0.1000		97	30-130			
4-Chloroaniline	0.069	0.020	mg/L	0.1000		69	40-140			
4-Chloro-phenyl-phenyl ether	0.083	0.010	mg/L	0.1000		83	40-140			
4-Nitroaniline	0.095	0.010	mg/L	0.1000		95	40-140			
4-Nitrophenol	0.111	0.050	mg/L	0.1000		111	30-130			
Acetophenone	0.093	0.010	mg/L	0.1000		93	40-140			
Aniline	0.071	0.010	mg/L	0.1000		71	40-140			
Azobenzene	0.112	0.020	mg/L	0.1000		112	40-140			
Benzoic Acid	0.088	0.100	mg/L	0.1000		88	40-140			
Benzyl Alcohol	0.103	0.010	mg/L	0.1000		103	40-140			
bis(2-Chloroethoxy)methane	0.095	0.010	mg/L	0.1000		95	40-140			
bis(2-Chloroethyl)ether	0.092	0.010	mg/L	0.1000		92	40-140			
bis(2-chloroisopropyl)Ether	0.086	0.010	mg/L	0.1000		86	40-140			
bis(2-Ethylhexyl)phthalate	0.098	0.006	mg/L	0.1000		98	40-140			
Butylbenzylphthalate	0.105	0.010	mg/L	0.1000		105	40-140			
Carbazole	0.095	0.010	mg/L	0.1000		95	40-140			
Dibenzofuran	0.084	0.010	mg/L	0.1000		84	40-140			
Diethylphthalate	0.092	0.010	mg/L	0.1000		92	40-140			
Dimethylphthalate	0.090	0.010	mg/L	0.1000		90	40-140			
Di-n-butylphthalate	0.101	0.010	mg/L	0.1000		101	40-140			
Di-n-octylphthalate	0.098	0.010	mg/L	0.1000		98	40-140			
Hexachlorobutadiene	0.071	0.010	mg/L	0.1000		71	40-140			
Hexachlorocyclopentadiene	0.051	0.025	mg/L	0.1000		51	40-140			
Hexachloroethane	0.076	0.005	mg/L	0.1000		76	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
Isophorone	0.087	0.010	mg/L	0.1000		87	40-140			
Nitrobenzene	0.095	0.010	mg/L	0.1000		95	40-140			
N-Nitrosodimethylamine	0.085	0.010	mg/L	0.1000		85	40-140			
N-Nitroso-Di-n-Propylamine	0.101	0.010	mg/L	0.1000		101	40-140			
N-nitrosodiphenylamine	0.093	0.010	mg/L	0.1000		93	40-140			
Phenol	0.087	0.010	mg/L	0.1000		87	30-130			
Pyridine	0.076	0.100	mg/L	0.1000		76	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0786*		mg/L	*0.1000*		*79*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.122*		mg/L	*0.1500*		*81*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.119*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0818*		mg/L	*0.1000*		*82*	*30-130*			
Surrogate: 2-Fluorophenol	*0.106*		mg/L	*0.1500*		*70*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0972*		mg/L	*0.1000*		*97*	*30-130*			
Surrogate: Phenol-d6	*0.132*		mg/L	*0.1500*		*88*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0870*		mg/L	*0.1000*		*87*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.085	0.010	mg/L	0.1000		85	40-140	2	20	
1,2,4-Trichlorobenzene	0.072	0.010	mg/L	0.1000		72	40-140	4	20	
1,2-Dichlorobenzene	0.069	0.010	mg/L	0.1000		69	40-140	7	20	
1,3-Dichlorobenzene	0.067	0.010	mg/L	0.1000		67	40-140	7	20	
1,4-Dichlorobenzene	0.068	0.010	mg/L	0.1000		68	40-140	7	20	
2,3,4,6-Tetrachlorophenol	0.076	0.050	mg/L	0.1000		76	40-140	3	20	
2,4,5-Trichlorophenol	0.089	0.010	mg/L	0.1000		89	30-130	6	20	
2,4,6-Trichlorophenol	0.089	0.010	mg/L	0.1000		89	30-130	6	20	
2,4-Dichlorophenol	0.088	0.010	mg/L	0.1000		88	30-130	7	20	
2,4-Dimethylphenol	0.094	0.050	mg/L	0.1000		94	30-130	6	20	
2,4-Dinitrophenol	0.101	0.050	mg/L	0.1000		101	30-130	7	20	
2,4-Dinitrotoluene	0.092	0.010	mg/L	0.1000		92	40-140	0.7	20	
2,6-Dinitrotoluene	0.094	0.010	mg/L	0.1000		94	40-140	2	20	
2-Chloronaphthalene	0.083	0.010	mg/L	0.1000		83	40-140	3	20	
2-Chlorophenol	0.087	0.010	mg/L	0.1000		87	30-130	9	20	
2-Methylphenol	0.096	0.010	mg/L	0.1000		96	30-130	8	20	
2-Nitroaniline	0.123	0.010	mg/L	0.1000		123	40-140	3	20	
2-Nitrophenol	0.084	0.010	mg/L	0.1000		84	30-130	6	20	
3,3´-Dichlorobenzidine	0.079	0.020	mg/L	0.1000		79	40-140	1	20	
3+4-Methylphenol	0.207	0.020	mg/L	0.2000		103	30-130	7	20	
3-Nitroaniline	0.099	0.010	mg/L	0.1000		99	40-140	1	20	
4,6-Dinitro-2-Methylphenol	0.102	0.050	mg/L	0.1000		102	30-130	4	20	
4-Bromophenyl-phenylether	0.086	0.010	mg/L	0.1000		86	40-140	0.8	20	
4-Chloro-3-Methylphenol	0.102	0.010	mg/L	0.1000		102	30-130	4	20	
4-Chloroaniline	0.066	0.020	mg/L	0.1000		66	40-140	4	20	
4-Chloro-phenyl-phenyl ether	0.085	0.010	mg/L	0.1000		85	40-140	2	20	
4-Nitroaniline	0.095	0.010	mg/L	0.1000		95	40-140	0.2	20	
4-Nitrophenol	0.116	0.050	mg/L	0.1000		116	30-130	4	20	
Acetophenone	0.093	0.010	mg/L	0.1000		93	40-140	0.2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
Aniline	0.069	0.010	mg/L	0.1000		69	40-140	3	20	
Azobenzene	0.113	0.020	mg/L	0.1000		113	40-140	0.8	20	
Benzoic Acid	0.094	0.100	mg/L	0.1000		94	40-140	7	20	
Benzyl Alcohol	0.105	0.010	mg/L	0.1000		105	40-140	1	20	
bis(2-Chloroethoxy)methane	0.095	0.010	mg/L	0.1000		95	40-140	0.4	20	
bis(2-Chloroethyl)ether	0.089	0.010	mg/L	0.1000		89	40-140	3	20	
bis(2-chloroisopropyl)Ether	0.084	0.010	mg/L	0.1000		84	40-140	3	20	
bis(2-Ethylhexyl)phthalate	0.098	0.006	mg/L	0.1000		98	40-140	0.4	20	
Butylbenzylphthalate	0.106	0.010	mg/L	0.1000		106	40-140	2	20	
Carbazole	0.096	0.010	mg/L	0.1000		96	40-140	1	20	
Dibenzofuran	0.084	0.010	mg/L	0.1000		84	40-140	0.7	20	
Diethylphthalate	0.092	0.010	mg/L	0.1000		92	40-140	0.7	20	
Dimethylphthalate	0.092	0.010	mg/L	0.1000		92	40-140	2	20	
Di-n-butylphthalate	0.101	0.010	mg/L	0.1000		101	40-140	0.1	20	
Di-n-octylphthalate	0.097	0.010	mg/L	0.1000		97	40-140	0.5	20	
Hexachlorobutadiene	0.066	0.010	mg/L	0.1000		66	40-140	6	20	
Hexachlorocyclopentadiene	0.051	0.025	mg/L	0.1000		51	40-140	0.5	20	
Hexachloroethane	0.070	0.005	mg/L	0.1000		70	40-140	8	20	
Isophorone	0.088	0.010	mg/L	0.1000		88	40-140	0.7	20	
Nitrobenzene	0.094	0.010	mg/L	0.1000		94	40-140	1	20	
N-Nitrosodimethylamine	0.084	0.010	mg/L	0.1000		84	40-140	2	20	
N-Nitroso-Di-n-Propylamine	0.102	0.010	mg/L	0.1000		102	40-140	1	20	
N-nitrosodiphenylamine	0.092	0.010	mg/L	0.1000		92	40-140	0.9	20	
Phenol	0.097	0.010	mg/L	0.1000		97	30-130	11	20	
Pyridine	0.072	0.100	mg/L	0.1000		72	40-140	5	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0739*		mg/L	*0.1000*		*74*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.122*		mg/L	*0.1500*		*81*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.128*		mg/L	*0.1500*		*85*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0824*		mg/L	*0.1000*		*82*	*30-130*			
Surrogate: 2-Fluorophenol	*0.124*		mg/L	*0.1500*		*82*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0948*		mg/L	*0.1000*		*95*	*30-130*			
Surrogate: Phenol-d6	*0.145*		mg/L	*0.1500*		*96*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0856*		mg/L	*0.1000*		*86*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.0766	0.00400	mg/L	0.1000		77	40-140			
Acenaphthene	0.0813	0.00400	mg/L	0.1000		81	40-140			
Acenaphthylene	0.0775	0.00400	mg/L	0.1000		77	40-140			
Anthracene	0.0786	0.00400	mg/L	0.1000		79	40-140			
Benzo(a)anthracene	0.0735	0.00100	mg/L	0.1000		73	40-140			
Benzo(a)pyrene	0.0776	0.00100	mg/L	0.1000		78	40-140			
Benzo(b)fluoranthene	0.0787	0.00100	mg/L	0.1000		79	40-140			
Benzo(g,h,i)perylene	0.0731	0.00400	mg/L	0.1000		73	40-140			
Benzo(k)fluoranthene	0.0763	0.00100	mg/L	0.1000		76	40-140			
Chrysene	0.0751	0.00100	mg/L	0.1000		75	40-140			
Dibenzo(a,h)Anthracene	0.0785	0.00100	mg/L	0.1000		79	40-140			
Fluoranthene	0.0834	0.00400	mg/L	0.1000		83	40-140			
Fluorene	0.0832	0.00400	mg/L	0.1000		83	40-140			
Hexachlorobenzene	0.0991	0.00400	mg/L	0.1000		99	40-140			
Indeno(1,2,3-cd)Pyrene	0.0789	0.00100	mg/L	0.1000		79	40-140			
Naphthalene	0.0725	0.00400	mg/L	0.1000		73	40-140			
Pentachlorophenol	0.0909	0.0180	mg/L	0.1000		91	30-130			
Phenanthrene	0.0770	0.00400	mg/L	0.1000		77	40-140			
Pyrene	0.0771	0.00400	mg/L	0.1000		77	40-140			
LCS Dup										
2-Methylnaphthalene	0.0723	0.00400	mg/L	0.1000		72	40-140	6	20	
Acenaphthene	0.0786	0.00400	mg/L	0.1000		79	40-140	3	20	
Acenaphthylene	0.0744	0.00400	mg/L	0.1000		74	40-140	4	20	
Anthracene	0.0754	0.00400	mg/L	0.1000		75	40-140	4	20	
Benzo(a)anthracene	0.0701	0.00100	mg/L	0.1000		70	40-140	5	20	
Benzo(a)pyrene	0.0751	0.00100	mg/L	0.1000		75	40-140	3	20	
Benzo(b)fluoranthene	0.0751	0.00100	mg/L	0.1000		75	40-140	5	20	
Benzo(g,h,i)perylene	0.0708	0.00400	mg/L	0.1000		71	40-140	3	20	
Benzo(k)fluoranthene	0.0762	0.00100	mg/L	0.1000		76	40-140	0.08	20	
Chrysene	0.0720	0.00100	mg/L	0.1000		72	40-140	4	20	
Dibenzo(a,h)Anthracene	0.0756	0.00100	mg/L	0.1000		76	40-140	4	20	
Fluoranthene	0.0787	0.00400	mg/L	0.1000		79	40-140	6	20	
Fluorene	0.0794	0.00400	mg/L	0.1000		79	40-140	5	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch DB01809 - 3520C										
Hexachlorobenzene	0.0935	0.00400	mg/L	0.1000		93	40-140	6	20	
Indeno(1,2,3-cd)Pyrene	0.0785	0.00100	mg/L	0.1000		78	40-140	0.5	20	
Naphthalene	0.0675	0.00400	mg/L	0.1000		67	40-140	7	20	
Pentachlorophenol	0.0847	0.0180	mg/L	0.1000		85	30-130	7	20	
Phenanthrene	0.0745	0.00400	mg/L	0.1000		75	40-140	3	20	
Pyrene	0.0737	0.00400	mg/L	0.1000		74	40-140	5	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 20B0446

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
DDT	DDT breakdown > 20%
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B+	Blank Spike recovery is above upper control limit (B+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 20B0446

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

Shipped/Delivered Via: Client

ESS Project ID: 20B0446
Date Received: 2/14/2020
Project Due Date: 2/24/2020
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.1 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA
13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	14435	Yes	N/A	Yes	1L Amber	NP	
1	14436	Yes	N/A	Yes	1L Amber	NP	
1	14437	Yes	N/A	Yes	1L Amber	NP	
1	14438	Yes	N/A	Yes	1L Amber	NP	
1	14439	Yes	N/A	Yes	1L Amber	NP	
1	14440	Yes	N/A	Yes	1L Amber	NP	
1	14441	Yes	N/A	Yes	250 mL Poly	HNO3	
1	14442	Yes	No	Yes	VOA Vial	HCl	
1	14443	Yes	No	Yes	VOA Vial	HCl	
1	14444	Yes	No	Yes	VOA Vial	HCl	

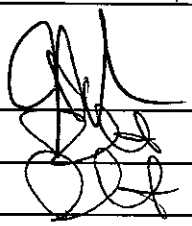
2nd Review
Were all containers scanned into storage/lab? Initials
Are barcode labels on correct containers? Yes / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/KPB

ESS Project ID: 20B0446

Date Received: 2/14/2020

Completed By: 

Date & Time: 2/14/20 1715

Reviewed By:

Date & Time: 2/14/20 1739

Delivered By:

2/14/20 1739

CHAIN OF CUSTODY

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

ESS Lab # 20B0446
Reporting Limits

Turn Time	5	Days	
Regulatory State	Rhode Island		

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA GeoEnvironmental Inc.	Project #: 34648	Project Name: Truk-Away LF	
Contact Person: Richard Carlone	Address: 188 Valley St.		
City: Providence	State: Rhode Island	Zip Code: 02909	PO #: —
Telephone Number: 401-634-0985	FAX Number: —	Email Address: Richard.Carlone@gza.com	

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC	SVOC	15 Metals	TPH	PCB	Pesticides
	2-14-20	12:35	Grab	GW	MW-107R	X	X	X	X	X	X

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	V	AG	P	AG	AG	AG
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	7	6	3	3	3	3
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	2	1	4	1	1	1
										Number of Containers per Sample:		3		1			

Laboratory Use Only

Cooler Present: Y ○ Drop Off
Seals Intact: Y ○ Pickup
Cooler Temperature: 3.1 °C

Sampled by: Benjamin Ramos

Comments: Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
2-14-20 13:55	2/14/20 1555		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19J0560

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 4:08 pm, Oct 24, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

SAMPLE RECEIPT

The following samples were received on October 16, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0560-01	SSW-1 0-6in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0560-02	SSW-1 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0560-03	SSW-10 0-6in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0560-04	SSW-10 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0560-05	SSW-9 0-6in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0560-06	SSW-9 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0560-07	Trip Blank	Sediment	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

C9J0335-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
1,4-Dioxane - Screen (48% @ 30%)

8081B Organochlorine Pesticides

19J0560-06 **Surrogate recovery(ies) below lower control limit (S-).**
Decachlorobiphenyl (29% @ 30-150%)

8270D Semi-Volatile Organic Compounds

C9J0311-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (111% @ 80-120%), 4,6-Dinitro-2-Methylphenol (108% @ 80-120%), Benzoic Acid (108% @ 80-120%), Pentachlorophenol (110% @ 80-120%)

C9J0311-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Hexachlorobutadiene (21% @ 20%), Hexachlorocyclopentadiene (27% @ 20%), p-Terphenyl-d14 (21% @ 20%)

C9J0359-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (87% @ 80-120%), 4,6-Dinitro-2-Methylphenol (98% @ 80-120%), Benzoic Acid (81% @ 80-120%), Pentachlorophenol (109% @ 80-120%)

C9J0359-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Hexachlorobutadiene (22% @ 20%)

C9J0359-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (22% @ 20%), N-Nitrosodimethylamine (29% @ 20%), Pyridine (25% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (6.99)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Arsenic	ND (3.50)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Barium	**33.7** (3.50)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Beryllium	**0.46** (0.15)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Cadmium	ND (0.70)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Chromium	**5.01** (1.40)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Cobalt	**2.64** (1.40)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Copper	**7.43** (3.50)		6010C		1	KJK	10/18/19 15:10	2.34	100	CJ91729
Lead	**22.7** (6.99)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Mercury	**0.029** (0.028)		7471B		1	MKS	10/18/19 11:10	1.16	40	CJ91754
Nickel	**5.84** (3.50)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Selenium	ND (6.99)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Silver	ND (0.70)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Thallium	ND (0.70)		6020A		1	NAR	10/21/19 15:56	2.34	100	CJ91729
Vanadium	**8.95** (1.40)		6010C		1	KJK	10/18/19 5:11	2.34	100	CJ91729
Zinc	**47.3** (3.50)		6010C		1	KJK	10/18/19 16:40	2.34	100	CJ91729

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 14.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (2.35)	0.471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (94.1)	89.4	8260B		1	10/17/19 15:12	C9J0335	CJ91750
1-Chlorohexane	ND (0.471)	0.188	8260B		1	10/17/19 15:12	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
2-Butanone	ND (2.35)	1.60	8260B		1	10/17/19 15:12	C9J0335	CJ91750
2-Chlorotoluene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
2-Hexanone	ND (2.35)	0.706	8260B		1	10/17/19 15:12	C9J0335	CJ91750
4-Chlorotoluene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (2.35)	0.753	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Acetone	ND (2.35)	1.27	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Benzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Bromobenzene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 14.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Bromodichloromethane	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Bromoform	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Bromomethane	ND (0.471)	0.188	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Carbon Disulfide	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Chlorobenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Chloroethane	ND (0.471)	0.188	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Chloroform	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Chloromethane	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Dibromochloromethane	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Dibromomethane	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Diethyl Ether	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Di-isopropyl ether	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Ethylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Isopropylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Methylene Chloride	**J 0.0941** (0.941)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Naphthalene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
n-Butylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
n-Propylbenzene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
sec-Butylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Styrene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
tert-Butylbenzene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Tetrachloroethene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Tetrahydrofuran	ND (2.35)	0.753	8260B		1	10/17/19 15:12	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 14.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.471)	0.141	8260B		1	10/17/19 15:12	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Trichloroethene	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.471)	0.188	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Vinyl Acetate	ND (0.471)	0.235	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Vinyl Chloride	ND (0.471)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Xylene O	ND (0.471)	0.0471	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Xylene P,M	ND (0.941)	0.0941	8260B		1	10/17/19 15:12	C9J0335	CJ91750
Xylenes (Total)	ND (0.941)		8260B		1	10/17/19 15:12		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*88 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*81 %*		*70-130*
Surrogate: Dibromofluoromethane	*86 %*		*70-130*
Surrogate: Toluene-d8	*84 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/17/19 11:45

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
4,4´-DDE	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
4,4´-DDT	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Aldrin	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
alpha-BHC	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
alpha-Chlordane	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
beta-BHC	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Chlordane (Total)	ND (0.0506)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
delta-BHC	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Dieldrin	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Endosulfan I	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Endosulfan II	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Endosulfan Sulfate	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Endrin	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Endrin Aldehyde	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Endrin Ketone	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
gamma-BHC (Lindane)	ND (0.0025)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
gamma-Chlordane	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Heptachlor	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Heptachlor Epoxide	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Hexachlorobenzene	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Methoxychlor	ND (0.0042)		8081B		1	10/18/19 11:29	C9J0337	CJ91709
Toxaphene	ND (0.211)		8081B		1	10/18/19 11:29	C9J0337	CJ91709

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*31 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*37 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*42 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/17/19 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1221	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1232	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1242	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1248	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1254	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1260	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1262	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704
Aroclor 1268	ND (0.09)		8082A		1	10/18/19 19:59		CJ91704

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 20
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/17/19 14:50

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**180** (61.4)		8100M		1	10/18/19 13:34	C9J0322	CJ91710

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*81 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
1,2,4-Trichlorobenzene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
1,2-Dichlorobenzene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
1,3-Dichlorobenzene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
1,4-Dichlorobenzene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,3,4,6-Tetrachlorophenol	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,4,5-Trichlorophenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,4,6-Trichlorophenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,4-Dichlorophenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,4-Dimethylphenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,4-Dinitrophenol	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,4-Dinitrotoluene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2,6-Dinitrotoluene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2-Chloronaphthalene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2-Chlorophenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2-Methylphenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2-Nitroaniline	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
2-Nitrophenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
3,3´-Dichlorobenzidine	ND (1.06)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
3+4-Methylphenol	ND (1.06)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
3-Nitroaniline	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4,6-Dinitro-2-Methylphenol	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4-Bromophenyl-phenylether	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4-Chloro-3-Methylphenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4-Chloroaniline	ND (1.06)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4-Chloro-phenyl-phenyl ether	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4-Nitroaniline	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
4-Nitrophenol	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Acetophenone	ND (1.06)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Aniline	ND (1.06)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Azobenzene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Benzoic Acid	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
bis(2-Chloroethoxy)methane	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
bis(2-Chloroethyl)ether	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
bis(2-chloroisopropyl)Ether	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
bis(2-Ethylhexyl)phthalate	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Butylbenzylphthalate	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Carbazole	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Dibenzofuran	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Diethylphthalate	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Dimethylphthalate	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Di-n-butylphthalate	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Di-n-octylphthalate	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Hexachlorobenzene	ND (0.266)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Hexachlorobutadiene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Hexachlorocyclopentadiene	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Hexachloroethane	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Isophorone	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Nitrobenzene	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
N-Nitrosodimethylamine	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
N-Nitroso-Di-n-Propylamine	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
N-nitrosodiphenylamine	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Pentachlorophenol	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Phenol	ND (0.531)		8270D		1	10/21/19 14:54	C9J0359	CJ91630
Pyridine	ND (2.66)		8270D		1	10/21/19 14:54	C9J0359	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*90 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*67 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*
Surrogate: 2-Fluorophenol	*68 %*		*30-130*
Surrogate: Nitrobenzene-d5	*64 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*61 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*93 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 0-6in
Date Sampled: 10/16/19 08:00
Percent Solids: 61
Initial Volume: 15.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/17/19 10:05

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Acenaphthene	ND (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Acenaphthylene	ND (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Anthracene	**0.035** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Benzo(a)anthracene	**0.097** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Benzo(a)pyrene	**0.110** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Benzo(b)fluoranthene	**0.184** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Benzo(g,h,i)perylene	**0.085** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Benzo(k)fluoranthene	**0.046** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Chrysene	**0.154** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Dibenzo(a,h)Anthracene	ND (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Fluoranthene	**0.299** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Fluorene	ND (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Indeno(1,2,3-cd)Pyrene	**0.088** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Naphthalene	ND (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Phenanthrene	**0.158** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630
Pyrene	**0.251** (0.027)		8270D SIM		1	10/22/19 2:31	C9J0386	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*71 %*		*30-130*
Surrogate: Nitrobenzene-d5	*95 %*		*30-130*
Surrogate: p-Terphenyl-d14	*73 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.73)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Arsenic	ND (2.36)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Barium	**24.8** (2.36)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Beryllium	**0.26** (0.10)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Cadmium	ND (0.47)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Chromium	**6.13** (0.95)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Cobalt	**2.59** (0.95)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Copper	**4.77** (2.36)		6010C		1	KJK	10/18/19 15:47	2.63	100	CJ91729
Lead	**8.45** (4.73)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Mercury	**0.042** (0.027)		7471B		1	MKS	10/18/19 11:24	0.91	40	CJ91754
Nickel	**4.11** (2.36)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Selenium	ND (4.73)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Silver	ND (0.47)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Thallium	ND (4.73)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Vanadium	**5.13** (0.95)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729
Zinc	**6.96** (2.36)		6010C		1	KJK	10/18/19 5:42	2.63	100	CJ91729

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 17.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (1.31)	0.262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (52.3)	49.7	8260B		1	10/17/19 15:39	C9J0335	CJ91750
1-Chlorohexane	ND (0.262)	0.105	8260B		1	10/17/19 15:39	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
2-Butanone	ND (1.31)	0.890	8260B		1	10/17/19 15:39	C9J0335	CJ91750
2-Chlorotoluene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
2-Hexanone	ND (1.31)	0.392	8260B		1	10/17/19 15:39	C9J0335	CJ91750
4-Chlorotoluene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (1.31)	0.419	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Acetone	ND (1.31)	0.706	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Benzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Bromobenzene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 17.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Bromodichloromethane	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Bromoform	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Bromomethane	ND (0.262)	0.105	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Carbon Disulfide	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Chlorobenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Chloroethane	ND (0.262)	0.105	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Chloroform	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Chloromethane	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Dibromochloromethane	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Dibromomethane	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Diethyl Ether	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Di-isopropyl ether	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Ethylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Isopropylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Methylene Chloride	**J 0.0576** (0.523)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Naphthalene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
n-Butylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
n-Propylbenzene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
sec-Butylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Styrene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
tert-Butylbenzene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Tetrachloroethene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Tetrahydrofuran	ND (1.31)	0.419	8260B		1	10/17/19 15:39	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 17.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.262)	0.0785	8260B		1	10/17/19 15:39	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Trichloroethene	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.262)	0.105	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Vinyl Acetate	ND (0.262)	0.131	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Vinyl Chloride	ND (0.262)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Xylene O	ND (0.262)	0.0262	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Xylene P,M	ND (0.523)	0.0523	8260B		1	10/17/19 15:39	C9J0335	CJ91750
Xylenes (Total)	ND (0.523)		8260B		1	10/17/19 15:39		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*117 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*109 %*		*70-130*
Surrogate: Dibromofluoromethane	*114 %*		*70-130*
Surrogate: Toluene-d8	*107 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/17/19 11:45

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
4,4´-DDE	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
4,4´-DDT	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Aldrin	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
alpha-BHC	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
alpha-Chlordane	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
beta-BHC	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Chlordane (Total) [2C]	ND (0.0357)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
delta-BHC	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Dieldrin	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Endosulfan I	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Endosulfan II	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Endosulfan Sulfate	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Endrin	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Endrin Aldehyde	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Endrin Ketone	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
gamma-Chlordane	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Heptachlor	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Heptachlor Epoxide	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Hexachlorobenzene	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Methoxychlor	ND (0.0030)		8081B		1	10/18/19 12:50	C9J0337	CJ91709
Toxaphene	ND (0.149)		8081B		1	10/18/19 12:50	C9J0337	CJ91709

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*42 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*49 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/17/19 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1221	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1232	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1242	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1248	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1254	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1260	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1262	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704
Aroclor 1268	ND (0.06)		8082A		1	10/18/19 20:18		CJ91704

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*88 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 20.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/17/19 14:50

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (45.9)		8100M		1	10/18/19 10:52	C9J0322	CJ91710

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*76 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
1,2,4-Trichlorobenzene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
1,2-Dichlorobenzene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
1,3-Dichlorobenzene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
1,4-Dichlorobenzene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,3,4,6-Tetrachlorophenol	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,4,5-Trichlorophenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,4,6-Trichlorophenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,4-Dichlorophenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,4-Dimethylphenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,4-Dinitrophenol	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,4-Dinitrotoluene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2,6-Dinitrotoluene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2-Chloronaphthalene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2-Chlorophenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2-Methylphenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2-Nitroaniline	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
2-Nitrophenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
3,3´-Dichlorobenzidine	ND (0.824)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
3+4-Methylphenol	ND (0.824)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
3-Nitroaniline	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4,6-Dinitro-2-Methylphenol	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4-Bromophenyl-phenylether	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4-Chloro-3-Methylphenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4-Chloroaniline	ND (0.824)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4-Chloro-phenyl-phenyl ether	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4-Nitroaniline	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
4-Nitrophenol	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Acetophenone	ND (0.824)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Aniline	ND (0.824)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Azobenzene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Benzoic Acid	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
bis(2-Chloroethoxy)methane	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
bis(2-Chloroethyl)ether	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
bis(2-chloroisopropyl)Ether	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
bis(2-Ethylhexyl)phthalate	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Butylbenzylphthalate	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Carbazole	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Dibenzofuran	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Diethylphthalate	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Dimethylphthalate	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Di-n-butylphthalate	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Di-n-octylphthalate	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Hexachlorobenzene	ND (0.206)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Hexachlorobutadiene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Hexachlorocyclopentadiene	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Hexachloroethane	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Isophorone	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Nitrobenzene	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
N-Nitrosodimethylamine	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
N-Nitroso-Di-n-Propylamine	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
N-nitrosodiphenylamine	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Pentachlorophenol	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Phenol	ND (0.411)		8270D		1	10/21/19 15:22	C9J0359	CJ91630
Pyridine	ND (2.06)		8270D		1	10/21/19 15:22	C9J0359	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*64 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*65 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*
Surrogate: 2-Fluorophenol	*66 %*		*30-130*
Surrogate: Nitrobenzene-d5	*63 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*60 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*81 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1 6-18in
Date Sampled: 10/16/19 08:00
Percent Solids: 80
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/17/19 10:05

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Acenaphthene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Acenaphthylene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Anthracene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Benzo(a)anthracene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Benzo(a)pyrene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Benzo(b)fluoranthene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Benzo(g,h,i)perylene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Benzo(k)fluoranthene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Chrysene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Dibenzo(a,h)Anthracene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Fluoranthene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Fluorene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Indeno(1,2,3-cd)Pyrene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Naphthalene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Phenanthrene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630
Pyrene	ND (0.021)		8270D SIM		1	10/22/19 3:18	C9J0386	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: Nitrobenzene-d5	*94 %*		*30-130*
Surrogate: p-Terphenyl-d14	*70 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.68)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Arsenic	**4.43** (2.34)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Barium	**10.5** (2.34)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Beryllium	**0.17** (0.10)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Cadmium	ND (0.47)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Chromium	**7.74** (0.94)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Cobalt	**6.38** (0.94)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Copper	**12.1** (2.34)		6010C		1	KJK	10/18/19 16:06	2.52	100	CJ91729
Lead	**6.43** (4.68)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Mercury	ND (0.021)		7471B		1	MKS	10/18/19 11:35	1.11	40	CJ91754
Nickel	**11.1** (2.34)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Selenium	ND (4.68)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Silver	ND (0.47)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Thallium	ND (4.68)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Vanadium	**8.05** (0.94)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729
Zinc	**21.0** (2.34)		6010C		1	KJK	10/18/19 6:01	2.52	100	CJ91729

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 19.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (1.10)	0.219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (43.9)	41.7	8260B		1	10/17/19 16:06	C9J0335	CJ91750
1-Chlorohexane	ND (0.219)	0.0878	8260B		1	10/17/19 16:06	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
2-Butanone	ND (1.10)	0.746	8260B		1	10/17/19 16:06	C9J0335	CJ91750
2-Chlorotoluene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
2-Hexanone	ND (1.10)	0.329	8260B		1	10/17/19 16:06	C9J0335	CJ91750
4-Chlorotoluene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (1.10)	0.351	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Acetone	ND (1.10)	0.593	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Benzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Bromobenzene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 19.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Bromodichloromethane	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Bromoform	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Bromomethane	ND (0.219)	0.0878	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Carbon Disulfide	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Chlorobenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Chloroethane	ND (0.219)	0.0878	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Chloroform	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Chloromethane	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Dibromochloromethane	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Dibromomethane	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Diethyl Ether	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Di-isopropyl ether	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Ethylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Isopropylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Methylene Chloride	ND (0.439)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Naphthalene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
n-Butylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
n-Propylbenzene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
sec-Butylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Styrene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
tert-Butylbenzene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Tetrachloroethene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Tetrahydrofuran	ND (1.10)	0.351	8260B		1	10/17/19 16:06	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 19.3
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.219)	0.0658	8260B		1	10/17/19 16:06	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Trichloroethene	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.219)	0.0878	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Vinyl Acetate	ND (0.219)	0.110	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Vinyl Chloride	ND (0.219)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Xylene O	ND (0.219)	0.0219	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Xylene P,M	ND (0.439)	0.0439	8260B		1	10/17/19 16:06	C9J0335	CJ91750
Xylenes (Total)	ND (0.439)		8260B		1	10/17/19 16:06		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*92 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 20.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/17/19 11:45

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
4,4´-DDE [2C]	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
4,4´-DDT	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Aldrin	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
alpha-BHC	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
alpha-Chlordane	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
beta-BHC	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Chlordane (Total)	ND (0.0344)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
delta-BHC	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Dieldrin	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Endosulfan I	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Endosulfan II	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Endosulfan Sulfate	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Endrin	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Endrin Aldehyde	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Endrin Ketone	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
gamma-Chlordane	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Heptachlor	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Heptachlor Epoxide	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Hexachlorobenzene	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Methoxychlor	ND (0.0029)		8081B		1	10/18/19 13:20	C9J0337	CJ91709
Toxaphene	ND (0.143)		8081B		1	10/18/19 13:20	C9J0337	CJ91709

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/17/19 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1221	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1232	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1242	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1248	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1254	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1260	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1262	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704
Aroclor 1268	ND (0.06)		8082A		1	10/18/19 20:37		CJ91704

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*77 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 20.9
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/17/19 14:50

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (42.3)		8100M		1	10/18/19 11:24	C9J0322	CJ91710

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*79 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
1,2,4-Trichlorobenzene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
1,2-Dichlorobenzene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
1,3-Dichlorobenzene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
1,4-Dichlorobenzene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,3,4,6-Tetrachlorophenol	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,4,5-Trichlorophenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,4,6-Trichlorophenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,4-Dichlorophenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,4-Dimethylphenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,4-Dinitrophenol	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,4-Dinitrotoluene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2,6-Dinitrotoluene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2-Chloronaphthalene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2-Chlorophenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2-Methylphenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2-Nitroaniline	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
2-Nitrophenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
3,3´-Dichlorobenzidine	ND (0.743)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
3+4-Methylphenol	ND (0.743)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
3-Nitroaniline	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4,6-Dinitro-2-Methylphenol	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4-Bromophenyl-phenylether	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4-Chloro-3-Methylphenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4-Chloroaniline	ND (0.743)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4-Chloro-phenyl-phenyl ether	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4-Nitroaniline	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
4-Nitrophenol	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Acetophenone	ND (0.743)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Aniline	ND (0.743)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Azobenzene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Benzoic Acid	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
bis(2-Chloroethoxy)methane	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
bis(2-Chloroethyl)ether	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
bis(2-chloroisopropyl)Ether	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
bis(2-Ethylhexyl)phthalate	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Butylbenzylphthalate	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Carbazole	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Dibenzofuran	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Diethylphthalate	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Dimethylphthalate	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Di-n-butylphthalate	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Di-n-octylphthalate	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Hexachlorobenzene	ND (0.186)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Hexachlorobutadiene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Hexachlorocyclopentadiene	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Hexachloroethane	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Isophorone	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Nitrobenzene	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
N-Nitrosodimethylamine	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
N-Nitroso-Di-n-Propylamine	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
N-nitrosodiphenylamine	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Pentachlorophenol	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Phenol	ND (0.371)		8270D		1	10/21/19 15:51	C9J0359	CJ91630
Pyridine	ND (1.86)		8270D		1	10/21/19 15:51	C9J0359	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*73 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*95 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-130*
Surrogate: 2-Fluorophenol	*74 %*		*30-130*
Surrogate: Nitrobenzene-d5	*63 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*68 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*93 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 0-6in
Date Sampled: 10/16/19 13:10
Percent Solids: 85
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/17/19 10:05

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Acenaphthene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Acenaphthylene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Anthracene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Benzo(a)anthracene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Benzo(a)pyrene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Benzo(b)fluoranthene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Benzo(g,h,i)perylene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Benzo(k)fluoranthene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Chrysene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Dibenzo(a,h)Anthracene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Fluoranthene	**0.022** (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Fluorene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Indeno(1,2,3-cd)Pyrene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Naphthalene	**0.021** (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Phenanthrene	ND (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630
Pyrene	**0.022** (0.019)		8270D SIM		1	10/22/19 4:05	C9J0386	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*
Surrogate: Nitrobenzene-d5	*98 %*		*30-130*
Surrogate: p-Terphenyl-d14	*74 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.46)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Arsenic	**3.04** (2.23)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Barium	**8.90** (2.23)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Beryllium	**0.22** (0.10)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Cadmium	ND (0.45)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Chromium	**4.02** (0.89)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Cobalt	**2.89** (0.89)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Copper	**7.36** (2.23)		6010C		1	KJK	10/18/19 16:09	2.56	100	CJ91729
Lead	**6.29** (4.46)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Mercury	ND (0.019)		7471B		1	MKS	10/18/19 11:37	1.19	40	CJ91754
Nickel	**5.32** (2.23)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Selenium	ND (4.46)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Silver	ND (0.45)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Thallium	ND (4.46)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Vanadium	**6.24** (0.89)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729
Zinc	**12.0** (2.23)		6010C		1	KJK	10/18/19 6:05	2.56	100	CJ91729

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 19.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (1.02)	0.204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (40.9)	38.8	8260B		1	10/17/19 16:32	C9J0335	CJ91750
1-Chlorohexane	ND (0.204)	0.0817	8260B		1	10/17/19 16:32	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
2-Butanone	ND (1.02)	0.695	8260B		1	10/17/19 16:32	C9J0335	CJ91750
2-Chlorotoluene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
2-Hexanone	ND (1.02)	0.306	8260B		1	10/17/19 16:32	C9J0335	CJ91750
4-Chlorotoluene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (1.02)	0.327	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Acetone	ND (1.02)	0.552	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Benzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Bromobenzene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 19.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Bromodichloromethane	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Bromoform	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Bromomethane	ND (0.204)	0.0817	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Carbon Disulfide	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Chlorobenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Chloroethane	ND (0.204)	0.0817	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Chloroform	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Chloromethane	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Dibromochloromethane	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Dibromomethane	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Diethyl Ether	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Di-isopropyl ether	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Ethylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Isopropylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Methylene Chloride	**J 0.0490** (0.409)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Naphthalene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
n-Butylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
n-Propylbenzene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
sec-Butylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Styrene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
tert-Butylbenzene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Tetrachloroethene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Tetrahydrofuran	ND (1.02)	0.327	8260B		1	10/17/19 16:32	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 19.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.204)	0.0613	8260B		1	10/17/19 16:32	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Trichloroethene	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.204)	0.0817	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Vinyl Acetate	ND (0.204)	0.102	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Vinyl Chloride	ND (0.204)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Xylene O	ND (0.204)	0.0204	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Xylene P,M	ND (0.409)	0.0409	8260B		1	10/17/19 16:32	C9J0335	CJ91750
Xylenes (Total)	ND (0.409)		8260B		1	10/17/19 16:32		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*93 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 19
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/17/19 11:45

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD [2C]	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
4,4´-DDE	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
4,4´-DDT [2C]	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Aldrin	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
alpha-BHC	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
alpha-Chlordane [2C]	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
beta-BHC	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Chlordane (Total)	ND (0.0361)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
delta-BHC	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Dieldrin	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Endosulfan I	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Endosulfan II	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Endosulfan Sulfate	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Endrin	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Endrin Aldehyde	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Endrin Ketone	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
gamma-Chlordane [2C]	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Heptachlor	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Heptachlor Epoxide	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Hexachlorobenzene	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Methoxychlor	ND (0.0030)		8081B		1	10/18/19 13:51	C9J0337	CJ91709
Toxaphene	ND (0.150)		8081B		1	10/18/19 13:51	C9J0337	CJ91709

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*50 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/17/19 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1221	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1232	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1242	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1248	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1254	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1260	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1262	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704
Aroclor 1268	ND (0.06)		8082A		1	10/18/19 22:52		CJ91704

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*92 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 20.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/17/19 14:50

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (42.4)		8100M		1	10/18/19 11:57	C9J0322	CJ91710

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*75 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
1,2,4-Trichlorobenzene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
1,2-Dichlorobenzene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
1,3-Dichlorobenzene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
1,4-Dichlorobenzene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,3,4,6-Tetrachlorophenol	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,4,5-Trichlorophenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,4,6-Trichlorophenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,4-Dichlorophenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,4-Dimethylphenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,4-Dinitrophenol	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,4-Dinitrotoluene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2,6-Dinitrotoluene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2-Chloronaphthalene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2-Chlorophenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2-Methylphenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2-Nitroaniline	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
2-Nitrophenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
3,3´-Dichlorobenzidine	ND (0.733)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
3+4-Methylphenol	ND (0.733)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
3-Nitroaniline	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4,6-Dinitro-2-Methylphenol	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4-Bromophenyl-phenylether	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4-Chloro-3-Methylphenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4-Chloroaniline	ND (0.733)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4-Chloro-phenyl-phenyl ether	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4-Nitroaniline	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
4-Nitrophenol	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Acetophenone	ND (0.733)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Aniline	ND (0.733)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Azobenzene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Benzoic Acid	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
bis(2-Chloroethoxy)methane	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
bis(2-Chloroethyl)ether	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
bis(2-chloroisopropyl)Ether	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
bis(2-Ethylhexyl)phthalate	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Butylbenzylphthalate	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Carbazole	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Dibenzofuran	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Diethylphthalate	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Dimethylphthalate	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Di-n-butylphthalate	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Di-n-octylphthalate	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Hexachlorobenzene	ND (0.183)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Hexachlorobutadiene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Hexachlorocyclopentadiene	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Hexachloroethane	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Isophorone	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Nitrobenzene	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
N-Nitrosodimethylamine	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
N-Nitroso-Di-n-Propylamine	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
N-nitrosodiphenylamine	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Pentachlorophenol	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Phenol	ND (0.366)		8270D		1	10/21/19 16:20	C9J0359	CJ91630
Pyridine	ND (1.83)		8270D		1	10/21/19 16:20	C9J0359	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*96 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*72 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-130*
Surrogate: 2-Fluorophenol	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*66 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*99 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10 6-18in
Date Sampled: 10/16/19 13:10
Percent Solids: 88
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/17/19 10:05

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Acenaphthene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Acenaphthylene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Anthracene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Benzo(a)anthracene	**0.038** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Benzo(a)pyrene	**0.035** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Benzo(b)fluoranthene	**0.044** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Benzo(g,h,i)perylene	**0.023** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Benzo(k)fluoranthene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Chrysene	**0.041** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Dibenzo(a,h)Anthracene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Fluoranthene	**0.076** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Fluorene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Indeno(1,2,3-cd)Pyrene	**0.025** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Naphthalene	ND (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Phenanthrene	**0.047** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630
Pyrene	**0.080** (0.019)		8270D SIM		1	10/22/19 4:53	C9J0386	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*72 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: Nitrobenzene-d5	*108 %*		*30-130*
Surrogate: p-Terphenyl-d14	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.33)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Arsenic	**4.92** (2.67)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Barium	**16.3** (2.67)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Beryllium	**0.43** (0.12)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Cadmium	ND (0.53)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Chromium	**6.08** (1.07)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Cobalt	**4.08** (1.07)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Copper	**8.25** (2.67)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Lead	**11.6** (5.33)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Mercury	ND (0.034)		7471B		1	MKS	10/18/19 11:39	0.75	40	CJ91754
Nickel	**6.97** (2.67)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Selenium	ND (5.33)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Silver	ND (0.53)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Thallium	ND (5.33)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Vanadium	**8.79** (1.07)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729
Zinc	**38.0** (2.67)		6010C		1	KJK	10/18/19 6:20	2.45	100	CJ91729

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 14.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (1.70)	0.339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (67.9)	64.5	8260B		1	10/17/19 16:59	C9J0335	CJ91750
1-Chlorohexane	ND (0.339)	0.136	8260B		1	10/17/19 16:59	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
2-Butanone	ND (1.70)	1.15	8260B		1	10/17/19 16:59	C9J0335	CJ91750
2-Chlorotoluene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
2-Hexanone	ND (1.70)	0.509	8260B		1	10/17/19 16:59	C9J0335	CJ91750
4-Chlorotoluene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (1.70)	0.543	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Acetone	ND (1.70)	0.916	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Benzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Bromobenzene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 14.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Bromodichloromethane	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Bromoform	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Bromomethane	ND (0.339)	0.136	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Carbon Disulfide	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Chlorobenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Chloroethane	ND (0.339)	0.136	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Chloroform	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Chloromethane	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Dibromochloromethane	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Dibromomethane	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Diethyl Ether	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Di-isopropyl ether	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Ethylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Isopropylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Methylene Chloride	**J 0.0984** (0.679)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Naphthalene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
n-Butylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
n-Propylbenzene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
sec-Butylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Styrene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
tert-Butylbenzene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Tetrachloroethene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Tetrahydrofuran	ND (1.70)	0.543	8260B		1	10/17/19 16:59	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 14.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.339)	0.102	8260B		1	10/17/19 16:59	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Trichloroethene	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.339)	0.136	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Vinyl Acetate	ND (0.339)	0.170	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Vinyl Chloride	ND (0.339)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Xylene O	ND (0.339)	0.0339	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Xylene P,M	ND (0.679)	0.0679	8260B		1	10/17/19 16:59	C9J0335	CJ91750
Xylenes (Total)	ND (0.679)		8260B		1	10/17/19 16:59		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*88 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*90 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/17/19 11:45

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
4,4´-DDE	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
4,4´-DDT	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Aldrin	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
alpha-BHC	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
alpha-Chlordane	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
beta-BHC [2C]	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Chlordane (Total)	ND (0.0386)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
delta-BHC	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Dieldrin	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Endosulfan I	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Endosulfan II	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Endosulfan Sulfate	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Endrin	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Endrin Aldehyde	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Endrin Ketone	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
gamma-BHC (Lindane)	ND (0.0019)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
gamma-Chlordane	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Heptachlor	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Heptachlor Epoxide	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Hexachlorobenzene	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Methoxychlor	ND (0.0032)		8081B		1	10/18/19 14:22	C9J0337	CJ91709
Toxaphene	ND (0.161)		8081B		1	10/18/19 14:22	C9J0337	CJ91709

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*45 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/17/19 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1221	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1232	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1242	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1248	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1254	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1260	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1262	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704
Aroclor 1268	ND (0.07)		8082A		1	10/18/19 23:12		CJ91704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*101 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*84 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 19
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/17/19 14:50

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**110** (51.6)		8100M		1	10/18/19 12:29	C9J0322	CJ91710

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*81 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
1,2,4-Trichlorobenzene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
1,2-Dichlorobenzene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
1,3-Dichlorobenzene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
1,4-Dichlorobenzene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,3,4,6-Tetrachlorophenol	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,4,5-Trichlorophenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,4,6-Trichlorophenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,4-Dichlorophenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,4-Dimethylphenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,4-Dinitrophenol	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,4-Dinitrotoluene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2,6-Dinitrotoluene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2-Chloronaphthalene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2-Chlorophenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2-Methylphenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2-Nitroaniline	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
2-Nitrophenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
3,3´-Dichlorobenzidine	ND (0.860)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
3+4-Methylphenol	ND (0.860)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
3-Nitroaniline	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4,6-Dinitro-2-Methylphenol	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4-Bromophenyl-phenylether	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4-Chloro-3-Methylphenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4-Chloroaniline	ND (0.860)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4-Chloro-phenyl-phenyl ether	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4-Nitroaniline	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
4-Nitrophenol	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Acetophenone	ND (0.860)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Aniline	ND (0.860)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Azobenzene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Benzoic Acid	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
bis(2-Chloroethoxy)methane	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
bis(2-Chloroethyl)ether	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
bis(2-chloroisopropyl)Ether	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
bis(2-Ethylhexyl)phthalate	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Butylbenzylphthalate	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Carbazole	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Dibenzofuran	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Diethylphthalate	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Dimethylphthalate	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Di-n-butylphthalate	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Di-n-octylphthalate	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Hexachlorobenzene	ND (0.215)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Hexachlorobutadiene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Hexachlorocyclopentadiene	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Hexachloroethane	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Isophorone	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Nitrobenzene	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
N-Nitrosodimethylamine	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
N-Nitroso-Di-n-Propylamine	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
N-nitrosodiphenylamine	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Pentachlorophenol	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Phenol	ND (0.429)		8270D		1	10/21/19 16:48	C9J0359	CJ91630
Pyridine	ND (2.15)		8270D		1	10/21/19 16:48	C9J0359	CJ91630

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*54 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*89 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*57 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*68 %*		*30-130*
Surrogate: 2-Fluorophenol	*56 %*		*30-130*
Surrogate: Nitrobenzene-d5	*54 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*52 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*90 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 0-6in
Date Sampled: 10/16/19 14:45
Percent Solids: 77
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/17/19 10:05

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Acenaphthene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Acenaphthylene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Anthracene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Benzo(a)anthracene	**0.032** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Benzo(a)pyrene	**0.032** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Benzo(b)fluoranthene	**0.045** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Benzo(g,h,i)perylene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Benzo(k)fluoranthene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Chrysene	**0.035** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Dibenzo(a,h)Anthracene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Fluoranthene	**0.062** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Fluorene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Indeno(1,2,3-cd)Pyrene	**0.024** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Naphthalene	ND (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Phenanthrene	**0.030** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630
Pyrene	**0.060** (0.022)		8270D SIM		1	10/22/19 5:40	C9J0386	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: Nitrobenzene-d5	*84 %*		*30-130*
Surrogate: p-Terphenyl-d14	*71 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.67)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Arsenic	**4.15** (2.33)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Barium	**18.4** (2.33)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Beryllium	**0.38** (0.10)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Cadmium	ND (0.47)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Chromium	**6.38** (0.93)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Cobalt	**3.76** (0.93)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Copper	**8.25** (2.33)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Lead	**10.4** (4.67)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Mercury	ND (0.039)		7471B		1	MKS	10/18/19 11:45	0.68	40	CJ91754
Nickel	**8.66** (2.33)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Selenium	ND (4.67)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Silver	ND (0.47)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Thallium	ND (4.67)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Vanadium	**9.30** (0.93)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729
Zinc	**37.0** (2.33)		6010C		1	KJK	10/18/19 6:24	2.87	100	CJ91729

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (1.71)	0.342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (68.3)	64.9	8260B		1	10/17/19 17:25	C9J0335	CJ91750
1-Chlorohexane	ND (0.342)	0.137	8260B		1	10/17/19 17:25	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
2-Butanone	ND (1.71)	1.16	8260B		1	10/17/19 17:25	C9J0335	CJ91750
2-Chlorotoluene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
2-Hexanone	ND (1.71)	0.512	8260B		1	10/17/19 17:25	C9J0335	CJ91750
4-Chlorotoluene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (1.71)	0.546	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Acetone	ND (1.71)	0.922	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Benzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Bromobenzene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Bromodichloromethane	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Bromoform	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Bromomethane	ND (0.342)	0.137	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Carbon Disulfide	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Chlorobenzene	**J 0.0478** (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Chloroethane	ND (0.342)	0.137	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Chloroform	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Chloromethane	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Dibromochloromethane	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Dibromomethane	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Diethyl Ether	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Di-isopropyl ether	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Ethylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Isopropylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Methylene Chloride	**J 0.0956** (0.683)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Naphthalene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
n-Butylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
n-Propylbenzene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
sec-Butylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Styrene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
tert-Butylbenzene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Tetrachloroethene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Tetrahydrofuran	ND (1.71)	0.546	8260B		1	10/17/19 17:25	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.342)	0.102	8260B		1	10/17/19 17:25	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Trichloroethene	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.342)	0.137	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Vinyl Acetate	ND (0.342)	0.171	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Vinyl Chloride	ND (0.342)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Xylene O	ND (0.342)	0.0342	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Xylene P,M	ND (0.683)	0.0683	8260B		1	10/17/19 17:25	C9J0335	CJ91750
Xylenes (Total)	ND (0.683)		8260B		1	10/17/19 17:25		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*92 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*90 %*		*70-130*
Surrogate: Dibromofluoromethane	*90 %*		*70-130*
Surrogate: Toluene-d8	*90 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/17/19 11:45

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
4,4´-DDE [2C]	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
4,4´-DDT	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Aldrin	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
alpha-BHC	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
alpha-Chlordane [2C]	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
beta-BHC [2C]	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Chlordane (Total) [2C]	ND (0.0421)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
delta-BHC	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Dieldrin	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Endosulfan I	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Endosulfan II	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Endosulfan Sulfate	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Endrin	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Endrin Aldehyde	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Endrin Ketone	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
gamma-BHC (Lindane)	ND (0.0021)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
gamma-Chlordane [2C]	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Heptachlor	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Heptachlor Epoxide	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Hexachlorobenzene	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Methoxychlor	ND (0.0035)		8081B		1	10/18/19 14:52	C9J0337	CJ91709
Toxaphene	ND (0.175)		8081B		1	10/18/19 14:52	C9J0337	CJ91709

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*29 %*	*S-*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*39 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*34 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*42 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/17/19 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1221	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1232	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1242	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1248	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1254	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1260	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1262	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704
Aroclor 1268	ND (0.07)		8082A		1	10/18/19 23:31		CJ91704

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*92 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/17/19 14:50

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**145** (52.4)		8100M		1	10/18/19 13:01	C9J0322	CJ91710

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*90 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
1,2,4-Trichlorobenzene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
1,2-Dichlorobenzene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
1,3-Dichlorobenzene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
1,4-Dichlorobenzene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,3,4,6-Tetrachlorophenol	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,4,5-Trichlorophenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,4,6-Trichlorophenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,4-Dichlorophenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,4-Dimethylphenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,4-Dinitrophenol	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,4-Dinitrotoluene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2,6-Dinitrotoluene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2-Chloronaphthalene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2-Chlorophenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2-Methylphenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2-Nitroaniline	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
2-Nitrophenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
3,3´-Dichlorobenzidine	ND (0.944)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
3+4-Methylphenol	ND (0.944)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
3-Nitroaniline	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4,6-Dinitro-2-Methylphenol	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4-Bromophenyl-phenylether	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4-Chloro-3-Methylphenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4-Chloroaniline	ND (0.944)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4-Chloro-phenyl-phenyl ether	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4-Nitroaniline	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
4-Nitrophenol	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Acetophenone	ND (0.944)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Aniline	ND (0.944)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Azobenzene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Benzoic Acid	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
bis(2-Chloroethoxy)methane	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
bis(2-Chloroethyl)ether	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
bis(2-chloroisopropyl)Ether	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
bis(2-Ethylhexyl)phthalate	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Butylbenzylphthalate	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Carbazole	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Dibenzofuran	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Diethylphthalate	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Dimethylphthalate	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Di-n-butylphthalate	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Di-n-octylphthalate	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Hexachlorobenzene	ND (0.236)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Hexachlorobutadiene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Hexachlorocyclopentadiene	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Hexachloroethane	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Isophorone	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Nitrobenzene	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
N-Nitrosodimethylamine	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
N-Nitroso-Di-n-Propylamine	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
N-nitrosodiphenylamine	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Pentachlorophenol	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Phenol	ND (0.471)		8270D		1	10/21/19 17:17	C9J0359	CJ91630
Pyridine	ND (2.36)		8270D		1	10/21/19 17:17	C9J0359	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*56 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*55 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*65 %*		*30-130*
Surrogate: 2-Fluorophenol	*58 %*		*30-130*
Surrogate: Nitrobenzene-d5	*56 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/17/19 10:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*50 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*77 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9 6-18in
Date Sampled: 10/16/19 14:45
Percent Solids: 75
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/17/19 10:05

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Acenaphthene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Acenaphthylene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Anthracene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Benzo(a)anthracene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Benzo(a)pyrene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Benzo(b)fluoranthene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Benzo(g,h,i)perylene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Benzo(k)fluoranthene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Chrysene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Dibenzo(a,h)Anthracene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Fluoranthene	**0.041** (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Fluorene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Indeno(1,2,3-cd)Pyrene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Naphthalene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Phenanthrene	ND (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630
Pyrene	**0.038** (0.024)		8270D SIM		1	10/22/19 6:27	C9J0386	CJ91630

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*58 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: Nitrobenzene-d5	*87 %*		*30-130*
Surrogate: p-Terphenyl-d14	*67 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/16/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-07
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,1,1-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,1,2-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,1-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,1-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,1-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2,3-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2,3-Trichloropropane	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2,4-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2-Dibromo-3-Chloropropane	ND (1.00)	0.200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2-Dibromoethane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,2-Dichloropropane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,3-Dichlorobenzene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1,4-Dioxane - Screen	ND (40.0)	38.0	8260B		1	10/17/19 12:58	C9J0335	CJ91750
1-Chlorohexane	ND (0.200)	0.0800	8260B		1	10/17/19 12:58	C9J0335	CJ91750
2,2-Dichloropropane	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
2-Butanone	ND (1.00)	0.680	8260B		1	10/17/19 12:58	C9J0335	CJ91750
2-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
2-Hexanone	ND (1.00)	0.300	8260B		1	10/17/19 12:58	C9J0335	CJ91750
4-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
4-Methyl-2-Pentanone	ND (1.00)	0.320	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Acetone	ND (1.00)	0.540	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Benzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Bromobenzene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/16/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-07
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Bromoform	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Bromomethane	ND (0.200)	0.0800	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Chlorobenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Chloroethane	ND (0.200)	0.0800	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Chloroform	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Chloromethane	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
cis-1,2-Dichloroethene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
cis-1,3-Dichloropropene	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Dibromochloromethane	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Dibromomethane	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Dichlorodifluoromethane	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Diethyl Ether	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Di-isopropyl ether	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Ethylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Hexachlorobutadiene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Methyl tert-Butyl Ether	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Methylene Chloride	ND (0.400)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Naphthalene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
n-Propylbenzene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Styrene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Tertiary-amyl methyl ether	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Tetrachloroethene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Tetrahydrofuran	ND (1.00)	0.320	8260B		1	10/17/19 12:58	C9J0335	CJ91750

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/16/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0560
ESS Laboratory Sample ID: 19J0560-07
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
trans-1,2-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/17/19 12:58	C9J0335	CJ91750
trans-1,3-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Trichloroethene	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Trichlorofluoromethane	ND (0.200)	0.0800	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Vinyl Acetate	ND (0.200)	0.100	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Vinyl Chloride	ND (0.200)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Xylene O	ND (0.200)	0.0200	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Xylene P,M	ND (0.400)	0.0400	8260B		1	10/17/19 12:58	C9J0335	CJ91750
Xylenes (Total)	ND (0.400)		8260B		1	10/17/19 12:58		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ91729 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Cobalt	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
Blank										
Thallium	ND	0.50	mg/kg wet							
Thallium	ND	100	mg/kg wet							
LCS										
Antimony	42.6	13.5	mg/kg wet	51.30		83	80-120			
Arsenic	206	6.76	mg/kg wet	202.0		102	80-120			
Barium	347	6.76	mg/kg wet	343.0		101	80-120			
Beryllium	48.0	0.30	mg/kg wet	52.10		92	80-120			
Cadmium	137	1.35	mg/kg wet	149.0		92	80-120			
Chromium	177	2.70	mg/kg wet	182.0		97	80-120			
Cobalt	168	2.70	mg/kg wet	171.0		98	80-120			
Copper	206	6.76	mg/kg wet	225.0		91	80-120			
Lead	344	13.5	mg/kg wet	333.0		103	80-120			
Nickel	161	6.76	mg/kg wet	167.0		97	80-120			
Selenium	163	13.5	mg/kg wet	169.0		96	80-120			
Silver	44.6	1.35	mg/kg wet	48.90		91	80-120			
Thallium	71.3	13.5	mg/kg wet	82.30		87	80-120			
Vanadium	227	2.70	mg/kg wet	227.0		100	80-120			
Zinc	425	6.76	mg/kg wet	459.0		93	80-120			
LCS										
Thallium	94.9	6.76	mg/kg wet	82.30		115	80-120			
LCS Dup										
Antimony	44.3	13.3	mg/kg wet	51.30		86	80-120	4	20	
Arsenic	211	6.67	mg/kg wet	202.0		104	80-120	2	20	
Barium	338	6.67	mg/kg wet	343.0		99	80-120	3	20	
Beryllium	49.0	0.29	mg/kg wet	52.10		94	80-120	2	20	
Cadmium	144	1.33	mg/kg wet	149.0		96	80-120	5	20	
Chromium	188	2.67	mg/kg wet	182.0		103	80-120	6	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ91729 - 3050B										
Cobalt	176	2.67	mg/kg wet	171.0		103	80-120	5	20	
Copper	216	6.67	mg/kg wet	225.0		96	80-120	5	20	
Lead	338	13.3	mg/kg wet	333.0		102	80-120	2	20	
Nickel	170	6.67	mg/kg wet	167.0		102	80-120	5	20	
Selenium	168	13.3	mg/kg wet	169.0		99	80-120	3	20	
Silver	46.4	1.33	mg/kg wet	48.90		95	80-120	4	20	
Thallium	70.7	13.3	mg/kg wet	82.30		86	80-120	0.7	20	
Vanadium	242	2.67	mg/kg wet	227.0		107	80-120	6	20	
Zinc	449	6.67	mg/kg wet	459.0		98	80-120	5	20	
LCS Dup										
Thallium	98.1	6.67	mg/kg wet	82.30		119	80-120	3	30	
Batch CJ91754 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	3.24	0.296	mg/kg wet	3.120		104	80-120			
LCS Dup										
Mercury	3.30	0.241	mg/kg wet	3.120		106	80-120	2	20	
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ91750 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ91750 - 5035										
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ91750 - 5035										
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*4.18*		mg/kg wet	*5.000*		*84*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*3.57*		mg/kg wet	*5.000*		*71*	*70-130*			
Surrogate: Dibromofluoromethane	*4.15*		mg/kg wet	*5.000*		*83*	*70-130*			
Surrogate: Toluene-d8	*3.79*		mg/kg wet	*5.000*		*76*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130			
1,1,1-Trichloroethane	1.97	0.200	mg/kg wet	2.000		98	70-130			
1,1,2,2-Tetrachloroethane	1.91	0.200	mg/kg wet	2.000		95	70-130			
1,1,2-Trichloroethane	2.03	0.200	mg/kg wet	2.000		102	70-130			
1,1-Dichloroethane	2.11	0.200	mg/kg wet	2.000		106	70-130			
1,1-Dichloroethene	2.36	0.200	mg/kg wet	2.000		118	70-130			
1,1-Dichloropropene	2.19	0.200	mg/kg wet	2.000		109	70-130			
1,2,3-Trichlorobenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
1,2,3-Trichloropropane	2.02	0.200	mg/kg wet	2.000		101	70-130			
1,2,4-Trichlorobenzene	2.05	0.200	mg/kg wet	2.000		102	70-130			
1,2,4-Trimethylbenzene	2.09	0.200	mg/kg wet	2.000		105	70-130			
1,2-Dibromo-3-Chloropropane	2.29	1.00	mg/kg wet	2.000		114	70-130			
1,2-Dibromoethane	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,2-Dichlorobenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
1,2-Dichloroethane	2.07	0.200	mg/kg wet	2.000		104	70-130			
1,2-Dichloropropane	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,3,5-Trimethylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130			
1,3-Dichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
1,3-Dichloropropane	2.05	0.200	mg/kg wet	2.000		102	70-130			
1,4-Dichlorobenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,4-Dioxane - Screen	68.9	40.0	mg/kg wet	40.00		172	44-241			
1-Chlorohexane	2.05	0.200	mg/kg wet	2.000		102	70-130			
2,2-Dichloropropane	2.25	0.200	mg/kg wet	2.000		112	70-130			
2-Butanone	9.66	1.00	mg/kg wet	10.00		97	70-130			
2-Chlorotoluene	1.98	0.200	mg/kg wet	2.000		99	70-130			
2-Hexanone	10.9	1.00	mg/kg wet	10.00		109	70-130			
4-Chlorotoluene	2.01	0.200	mg/kg wet	2.000		101	70-130			
4-Isopropyltoluene	2.08	0.200	mg/kg wet	2.000		104	70-130			
4-Methyl-2-Pentanone	9.12	1.00	mg/kg wet	10.00		91	70-130			
Acetone	12.3	1.00	mg/kg wet	10.00		123	70-130			
Benzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
Bromobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Bromochloromethane	2.02	0.200	mg/kg wet	2.000		101	70-130			
Bromodichloromethane	1.85	0.200	mg/kg wet	2.000		92	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ91750 - 5035										
Bromoform	2.00	0.200	mg/kg wet	2.000		100	70-130			
Bromomethane	1.83	0.200	mg/kg wet	2.000		91	70-130			
Carbon Disulfide	2.01	0.200	mg/kg wet	2.000		100	70-130			
Carbon Tetrachloride	2.14	0.200	mg/kg wet	2.000		107	70-130			
Chlorobenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
Chloroethane	1.85	0.200	mg/kg wet	2.000		92	70-130			
Chloroform	2.05	0.200	mg/kg wet	2.000		103	70-130			
Chloromethane	1.74	0.200	mg/kg wet	2.000		87	70-130			
cis-1,2-Dichloroethene	2.14	0.200	mg/kg wet	2.000		107	70-130			
cis-1,3-Dichloropropene	1.73	0.200	mg/kg wet	2.000		87	70-130			
Dibromochloromethane	1.97	0.200	mg/kg wet	2.000		99	70-130			
Dibromomethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
Dichlorodifluoromethane	1.52	0.200	mg/kg wet	2.000		76	70-130			
Diethyl Ether	2.12	0.200	mg/kg wet	2.000		106	70-130			
Di-isopropyl ether	2.07	0.200	mg/kg wet	2.000		104	70-130			
Ethyl tertiary-butyl ether	1.99	0.200	mg/kg wet	2.000		100	70-130			
Ethylbenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
Hexachlorobutadiene	2.07	0.200	mg/kg wet	2.000		103	70-130			
Isopropylbenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
Methyl tert-Butyl Ether	2.22	0.200	mg/kg wet	2.000		111	70-130			
Methylene Chloride	1.94	0.400	mg/kg wet	2.000		97	70-130			
Naphthalene	1.91	0.200	mg/kg wet	2.000		96	70-130			
n-Butylbenzene	2.09	0.200	mg/kg wet	2.000		105	70-130			
n-Propylbenzene	2.09	0.200	mg/kg wet	2.000		104	70-130			
sec-Butylbenzene	2.06	0.200	mg/kg wet	2.000		103	70-130			
Styrene	1.72	0.200	mg/kg wet	2.000		86	70-130			
tert-Butylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
Tertiary-amyl methyl ether	2.01	0.200	mg/kg wet	2.000		101	70-130			
Tetrachloroethene	2.06	0.200	mg/kg wet	2.000		103	70-130			
Tetrahydrofuran	1.74	1.00	mg/kg wet	2.000		87	70-130			
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
trans-1,2-Dichloroethene	2.14	0.200	mg/kg wet	2.000		107	70-130			
trans-1,3-Dichloropropene	1.95	0.200	mg/kg wet	2.000		98	70-130			
Trichloroethene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Trichlorofluoromethane	2.12	0.200	mg/kg wet	2.000		106	70-130			
Vinyl Acetate	1.95	0.200	mg/kg wet	2.000		98	70-130			
Vinyl Chloride	1.92	0.200	mg/kg wet	2.000		96	70-130			
Xylene O	2.01	0.200	mg/kg wet	2.000		101	70-130			
Xylene P,M	4.04	0.400	mg/kg wet	4.000		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.57*		mg/kg wet	*5.000*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.19*		mg/kg wet	*5.000*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*5.21*		mg/kg wet	*5.000*		*104*	*70-130*			
Surrogate: Toluene-d8	*4.99*		mg/kg wet	*5.000*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.64	0.200	mg/kg wet	2.000		82	70-130	3	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ91750 - 5035										
1,1,1-Trichloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	5	25	
1,1,2,2-Tetrachloroethane	2.06	0.200	mg/kg wet	2.000		103	70-130	8	25	
1,1,2-Trichloroethane	1.85	0.200	mg/kg wet	2.000		93	70-130	9	25	
1,1-Dichloroethane	1.99	0.200	mg/kg wet	2.000		99	70-130	6	25	
1,1-Dichloroethene	2.21	0.200	mg/kg wet	2.000		110	70-130	7	25	
1,1-Dichloropropene	2.01	0.200	mg/kg wet	2.000		100	70-130	9	25	
1,2,3-Trichlorobenzene	1.84	0.200	mg/kg wet	2.000		92	70-130	8	25	
1,2,3-Trichloropropane	1.99	0.200	mg/kg wet	2.000		99	70-130	2	25	
1,2,4-Trichlorobenzene	1.86	0.200	mg/kg wet	2.000		93	70-130	10	25	
1,2,4-Trimethylbenzene	2.06	0.200	mg/kg wet	2.000		103	70-130	1	25	
1,2-Dibromo-3-Chloropropane	2.22	1.00	mg/kg wet	2.000		111	70-130	3	25	
1,2-Dibromoethane	1.83	0.200	mg/kg wet	2.000		92	70-130	2	25	
1,2-Dichlorobenzene	1.99	0.200	mg/kg wet	2.000		100	70-130	0.1	25	
1,2-Dichloroethane	1.95	0.200	mg/kg wet	2.000		97	70-130	6	25	
1,2-Dichloropropane	1.93	0.200	mg/kg wet	2.000		97	70-130	2	25	
1,3,5-Trimethylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130	1	25	
1,3-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	2	25	
1,3-Dichloropropane	1.91	0.200	mg/kg wet	2.000		95	70-130	7	25	
1,4-Dichlorobenzene	1.84	0.200	mg/kg wet	2.000		92	70-130	3	25	
1,4-Dioxane - Screen	75.0	40.0	mg/kg wet	40.00		188	44-241	8	200	
1-Chlorohexane	2.01	0.200	mg/kg wet	2.000		101	70-130	2	25	
2,2-Dichloropropane	2.09	0.200	mg/kg wet	2.000		104	70-130	7	25	
2-Butanone	9.24	1.00	mg/kg wet	10.00		92	70-130	4	25	
2-Chlorotoluene	1.98	0.200	mg/kg wet	2.000		99	70-130	0.1	25	
2-Hexanone	10.9	1.00	mg/kg wet	10.00		109	70-130	0.2	25	
4-Chlorotoluene	2.02	0.200	mg/kg wet	2.000		101	70-130	0.2	25	
4-Isopropyltoluene	2.02	0.200	mg/kg wet	2.000		101	70-130	3	25	
4-Methyl-2-Pentanone	9.07	1.00	mg/kg wet	10.00		91	70-130	0.6	25	
Acetone	10.2	1.00	mg/kg wet	10.00		102	70-130	19	25	
Benzene	2.09	0.200	mg/kg wet	2.000		104	70-130	0.6	25	
Bromobenzene	1.86	0.200	mg/kg wet	2.000		93	70-130	3	25	
Bromochloromethane	1.89	0.200	mg/kg wet	2.000		94	70-130	7	25	
Bromodichloromethane	1.71	0.200	mg/kg wet	2.000		86	70-130	8	25	
Bromoform	1.94	0.200	mg/kg wet	2.000		97	70-130	3	25	
Bromomethane	1.69	0.200	mg/kg wet	2.000		84	70-130	8	25	
Carbon Disulfide	1.96	0.200	mg/kg wet	2.000		98	70-130	3	25	
Carbon Tetrachloride	2.05	0.200	mg/kg wet	2.000		102	70-130	4	25	
Chlorobenzene	1.87	0.200	mg/kg wet	2.000		93	70-130	2	25	
Chloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	0.3	25	
Chloroform	1.99	0.200	mg/kg wet	2.000		100	70-130	3	25	
Chloromethane	1.69	0.200	mg/kg wet	2.000		85	70-130	3	25	
cis-1,2-Dichloroethene	2.12	0.200	mg/kg wet	2.000		106	70-130	0.8	25	
cis-1,3-Dichloropropene	1.70	0.200	mg/kg wet	2.000		85	70-130	2	25	
Dibromochloromethane	1.84	0.200	mg/kg wet	2.000		92	70-130	7	25	
Dibromomethane	1.96	0.200	mg/kg wet	2.000		98	70-130	4	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ91750 - 5035										
Dichlorodifluoromethane	1.52	0.200	mg/kg wet	2.000		76	70-130	0.1	25	
Diethyl Ether	2.13	0.200	mg/kg wet	2.000		106	70-130	0.4	25	
Di-isopropyl ether	1.96	0.200	mg/kg wet	2.000		98	70-130	5	25	
Ethyl tertiary-butyl ether	2.00	0.200	mg/kg wet	2.000		100	70-130	0.4	25	
Ethylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	7	25	
Hexachlorobutadiene	1.94	0.200	mg/kg wet	2.000		97	70-130	6	25	
Isopropylbenzene	1.99	0.200	mg/kg wet	2.000		100	70-130	5	25	
Methyl tert-Butyl Ether	2.15	0.200	mg/kg wet	2.000		108	70-130	3	25	
Methylene Chloride	1.87	0.400	mg/kg wet	2.000		94	70-130	4	25	
Naphthalene	1.89	0.200	mg/kg wet	2.000		94	70-130	1	25	
n-Butylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130	0.8	25	
n-Propylbenzene	2.13	0.200	mg/kg wet	2.000		106	70-130	2	25	
sec-Butylbenzene	2.07	0.200	mg/kg wet	2.000		104	70-130	0.5	25	
Styrene	1.68	0.200	mg/kg wet	2.000		84	70-130	3	25	
tert-Butylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130	4	25	
Tertiary-amyl methyl ether	1.99	0.200	mg/kg wet	2.000		99	70-130	1	25	
Tetrachloroethene	1.83	0.200	mg/kg wet	2.000		92	70-130	11	25	
Tetrahydrofuran	1.87	1.00	mg/kg wet	2.000		93	70-130	7	25	
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130	0.2	25	
trans-1,2-Dichloroethene	2.18	0.200	mg/kg wet	2.000		109	70-130	2	25	
trans-1,3-Dichloropropene	1.91	0.200	mg/kg wet	2.000		96	70-130	2	25	
Trichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130	0.5	25	
Trichlorofluoromethane	2.07	0.200	mg/kg wet	2.000		103	70-130	3	25	
Vinyl Acetate	1.72	0.200	mg/kg wet	2.000		86	70-130	13	25	
Vinyl Chloride	1.89	0.200	mg/kg wet	2.000		95	70-130	1	25	
Xylene O	1.95	0.200	mg/kg wet	2.000		97	70-130	3	25	
Xylene P,M	3.98	0.400	mg/kg wet	4.000		99	70-130	1	25	
Surrogate: 1,2-Dichloroethane-d4	*5.18*		mg/kg wet	*5.000*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.85*		mg/kg wet	*5.000*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*5.23*		mg/kg wet	*5.000*		*105*	*70-130*			
Surrogate: Toluene-d8	*4.97*		mg/kg wet	*5.000*		*99*	*70-130*			
8081B Organochlorine Pesticides										
Batch CJ91709 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ91709 - 3546										
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0120*		mg/kg wet	*0.01250*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0122*		mg/kg wet	*0.01250*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0122*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0127*		mg/kg wet	*0.01250*		*101*	*30-150*			
LCS										
4,4´-DDD	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
4,4´-DDD [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
4,4´-DDE	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
4,4´-DDE [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140			
4,4´-DDT	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
4,4´-DDT [2C]	0.0128	0.0025	mg/kg wet	0.01250		103	40-140			
Aldrin	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ91709 - 3546										
Aldrin [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
alpha-BHC	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
alpha-BHC [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
alpha-Chlordane	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
alpha-Chlordane [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
beta-BHC	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
beta-BHC [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
delta-BHC	0.0077	0.0025	mg/kg wet	0.01250		62	40-140			
delta-BHC [2C]	0.0078	0.0025	mg/kg wet	0.01250		62	40-140			
Dieldrin	0.0127	0.0025	mg/kg wet	0.01250		102	40-140			
Dieldrin [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140			
Endosulfan I	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan I [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan II	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan II [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Endosulfan Sulfate	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Endosulfan Sulfate [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
Endrin	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
Endrin [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Endrin Aldehyde	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Endrin Aldehyde [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
Endrin Ketone	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
Endrin Ketone [2C]	0.0127	0.0025	mg/kg wet	0.01250		101	40-140			
gamma-BHC (Lindane)	0.0118	0.0015	mg/kg wet	0.01250		95	40-140			
gamma-BHC (Lindane) [2C]	0.0120	0.0015	mg/kg wet	0.01250		96	40-140			
gamma-Chlordane	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
gamma-Chlordane [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Heptachlor	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
Heptachlor [2C]	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
Heptachlor Epoxide	0.0127	0.0025	mg/kg wet	0.01250		102	40-140			
Heptachlor Epoxide [2C]	0.0128	0.0025	mg/kg wet	0.01250		103	40-140			
Hexachlorobenzene	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Hexachlorobenzene [2C]	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
Methoxychlor	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Methoxychlor [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Surrogate: Decachlorobiphenyl	*0.0120*		mg/kg wet	*0.01250*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0123*		mg/kg wet	*0.01250*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0124*		mg/kg wet	*0.01250*		*99*	*30-150*			
LCS Dup										
4,4´-DDD	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	5	30	
4,4´-DDD [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	6	30	
4,4´-DDE	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	5	30	
4,4´-DDE [2C]	0.0135	0.0025	mg/kg wet	0.01250		108	40-140	5	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ91709 - 3546										
4,4´-DDT	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	4	30	
4,4´-DDT [2C]	0.0134	0.0025	mg/kg wet	0.01250		108	40-140	5	30	
Aldrin	0.0127	0.0025	mg/kg wet	0.01250		101	40-140	4	30	
Aldrin [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	4	30	
alpha-BHC	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
alpha-BHC [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	4	30	
alpha-Chlordane	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	3	30	
alpha-Chlordane [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	4	30	
beta-BHC	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
beta-BHC [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	4	30	
delta-BHC	0.0081	0.0025	mg/kg wet	0.01250		65	40-140	5	30	
delta-BHC [2C]	0.0082	0.0025	mg/kg wet	0.01250		65	40-140	5	30	
Dieldrin	0.0133	0.0025	mg/kg wet	0.01250		106	40-140	4	30	
Dieldrin [2C]	0.0135	0.0025	mg/kg wet	0.01250		108	40-140	4	30	
Endosulfan I	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
Endosulfan I [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
Endosulfan II	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
Endosulfan II [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	5	30	
Endosulfan Sulfate	0.0117	0.0025	mg/kg wet	0.01250		94	40-140	5	30	
Endosulfan Sulfate [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	5	30	
Endrin	0.0128	0.0025	mg/kg wet	0.01250		102	40-140	4	30	
Endrin [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	4	30	
Endrin Aldehyde	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	5	30	
Endrin Aldehyde [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	6	30	
Endrin Ketone	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	5	30	
Endrin Ketone [2C]	0.0133	0.0025	mg/kg wet	0.01250		107	40-140	5	30	
gamma-BHC (Lindane)	0.0123	0.0015	mg/kg wet	0.01250		98	40-140	4	30	
gamma-BHC (Lindane) [2C]	0.0124	0.0015	mg/kg wet	0.01250		100	40-140	4	30	
gamma-Chlordane	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	4	30	
gamma-Chlordane [2C]	0.0127	0.0025	mg/kg wet	0.01250		102	40-140	4	30	
Heptachlor	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	3	30	
Heptachlor [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	3	30	
Heptachlor Epoxide	0.0132	0.0025	mg/kg wet	0.01250		105	40-140	4	30	
Heptachlor Epoxide [2C]	0.0133	0.0025	mg/kg wet	0.01250		107	40-140	4	30	
Hexachlorobenzene	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	4	30	
Hexachlorobenzene [2C]	0.0127	0.0025	mg/kg wet	0.01250		101	40-140	4	30	
Methoxychlor	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	4	30	
Methoxychlor [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	5	30	
Surrogate: Decachlorobiphenyl	*0.0121*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0124*		mg/kg wet	*0.01250*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0124*		mg/kg wet	*0.01250*		*99*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										

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Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ91704 - 3540C										
Blank										
Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0212*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0196*		mg/kg wet	*0.02500*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0188*		mg/kg wet	*0.02500*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0198*		mg/kg wet	*0.02500*		*79*	*30-150*			
LCS										
Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		94	40-140			
Aroclor 1016 [2C]	0.5	0.02	mg/kg wet	0.5000		101	40-140			
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		99	40-140			
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		103	40-140			
Surrogate: Decachlorobiphenyl	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0208*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		92	40-140	3	30	
Aroclor 1016 [2C]	0.5	0.02	mg/kg wet	0.5000		99	40-140	2	30	
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		97	40-140	1	30	
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		102	40-140	0.6	30	
Surrogate: Decachlorobiphenyl	*0.0222*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0198*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0199*		mg/kg wet	*0.02500*		*79*	*30-150*			
8100M Total Petroleum Hydrocarbons										

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Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ91710 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
Surrogate: O-Terphenyl	*4.69*		mg/kg wet	*5.000*		*94*	*40-140*			
LCS										
Decane (C10)	1.7	0.2	mg/kg wet	2.500		67	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		82	40-140			
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		63	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		90	40-140			
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Total Petroleum Hydrocarbons	29.6	37.5	mg/kg wet	35.00		85	40-140			
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Surrogate: O-Terphenyl	*4.67*		mg/kg wet	*5.000*		*93*	*40-140*			
LCS Dup										
Decane (C10)	1.7	0.2	mg/kg wet	2.500		67	40-140	0.8	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140	0.9	25	
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		85	40-140	3	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		87	40-140	3	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		82	40-140	0.05	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	4	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		64	30-140	1	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ91710 - 3546										
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140	3	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		80	40-140	1	25	
Total Petroleum Hydrocarbons	29.2	37.5	mg/kg wet	35.00		83	40-140	2	25	
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		89	40-140	3	25	
Surrogate: O-Terphenyl	*4.50*		mg/kg wet	*5.000*		*90*	*40-140*			
8270D Semi-Volatile Organic Compounds										
Batch CJ91630 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91630 - 3546										
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.26*		mg/kg wet	*3.333*		*68*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.54*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.53*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.55*		mg/kg wet	*3.333*		*76*	*30-130*			
Surrogate: 2-Fluorophenol	*3.78*		mg/kg wet	*5.000*		*76*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.45*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: Phenol-d6	*3.43*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.73*		mg/kg wet	*3.333*		*112*	*30-130*			
LCS										
1,1-Biphenyl	2.56	0.333	mg/kg wet	3.333		77	40-140			
1,2,4-Trichlorobenzene	2.58	0.333	mg/kg wet	3.333		77	40-140			
1,2-Dichlorobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140			
1,3-Dichlorobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140			
1,4-Dichlorobenzene	2.32	0.333	mg/kg wet	3.333		70	40-140			
2,3,4,6-Tetrachlorophenol	2.78	1.67	mg/kg wet	3.333		83	30-130			
2,4,5-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130			
2,4,6-Trichlorophenol	2.92	0.333	mg/kg wet	3.333		88	30-130			
2,4-Dichlorophenol	2.75	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dimethylphenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
2,4-Dinitrophenol	3.12	1.67	mg/kg wet	3.333		94	30-130			
2,4-Dinitrotoluene	2.80	0.333	mg/kg wet	3.333		84	40-140			
2,6-Dinitrotoluene	2.66	0.333	mg/kg wet	3.333		80	40-140			
2-Chloronaphthalene	2.55	0.333	mg/kg wet	3.333		76	40-140			
2-Chlorophenol	2.43	0.333	mg/kg wet	3.333		73	30-130			

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Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91630 - 3546										
2-Methylphenol	2.47	0.333	mg/kg wet	3.333		74	30-130			
2-Nitroaniline	2.21	0.333	mg/kg wet	3.333		66	40-140			
2-Nitrophenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
3,3´-Dichlorobenzidine	2.44	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.36	0.667	mg/kg wet	6.667		65	30-130			
3-Nitroaniline	2.30	0.333	mg/kg wet	3.333		69	40-140			
4,6-Dinitro-2-Methylphenol	3.30	1.67	mg/kg wet	3.333		99	30-130			
4-Bromophenyl-phenylether	3.07	0.333	mg/kg wet	3.333		92	40-140			
4-Chloro-3-Methylphenol	2.47	0.333	mg/kg wet	3.333		74	30-130			
4-Chloroaniline	1.69	0.667	mg/kg wet	3.333		51	40-140			
4-Chloro-phenyl-phenyl ether	2.77	0.333	mg/kg wet	3.333		83	40-140			
4-Nitroaniline	2.42	0.333	mg/kg wet	3.333		72	40-140			
4-Nitrophenol	2.42	1.67	mg/kg wet	3.333		72	30-130			
Acetophenone	2.02	0.667	mg/kg wet	3.333		61	40-140			
Aniline	1.84	0.667	mg/kg wet	3.333		55	40-140			
Azobenzene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Benzoic Acid	2.76	1.67	mg/kg wet	3.333		83	40-140			
Benzyl Alcohol	2.02	0.333	mg/kg wet	3.333		60	40-140			
bis(2-Chloroethoxy)methane	2.45	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethyl)ether	2.29	0.333	mg/kg wet	3.333		69	40-140			
bis(2-chloroisopropyl)Ether	2.33	0.333	mg/kg wet	3.333		70	40-140			
bis(2-Ethylhexyl)phthalate	3.39	0.333	mg/kg wet	3.333		102	40-140			
Butylbenzylphthalate	3.18	0.333	mg/kg wet	3.333		95	40-140			
Carbazole	2.68	0.333	mg/kg wet	3.333		80	40-140			
Dibenzofuran	2.56	0.333	mg/kg wet	3.333		77	40-140			
Diethylphthalate	2.82	0.333	mg/kg wet	3.333		85	40-140			
Dimethylphthalate	2.74	0.333	mg/kg wet	3.333		82	40-140			
Di-n-butylphthalate	2.91	0.333	mg/kg wet	3.333		87	40-140			
Di-n-octylphthalate	3.40	0.333	mg/kg wet	3.333		102	40-140			
Hexachlorobenzene	3.07	0.167	mg/kg wet	3.333		92	40-140			
Hexachlorobutadiene	2.75	0.333	mg/kg wet	3.333		82	40-140			
Hexachlorocyclopentadiene	2.69	1.67	mg/kg wet	3.333		81	40-140			
Hexachloroethane	2.36	0.333	mg/kg wet	3.333		71	40-140			
Isophorone	2.25	0.333	mg/kg wet	3.333		68	40-140			
Nitrobenzene	2.41	0.333	mg/kg wet	3.333		72	40-140			
N-Nitrosodimethylamine	1.91	0.333	mg/kg wet	3.333		57	40-140			
N-Nitroso-Di-n-Propylamine	2.27	0.333	mg/kg wet	3.333		68	40-140			
N-nitrosodiphenylamine	2.93	0.333	mg/kg wet	3.333		88	40-140			
Pentachlorophenol	3.40	1.67	mg/kg wet	3.333		102	30-130			
Phenol	2.27	0.333	mg/kg wet	3.333		68	30-130			
Pyridine	2.04	1.67	mg/kg wet	3.333		61	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.48*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.90*		mg/kg wet	*5.000*		*98*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.94*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.94*		mg/kg wet	*3.333*		*88*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91630 - 3546										
Surrogate: 2-Fluorophenol	*4.11*		mg/kg wet	*5.000*		*82*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.71*		mg/kg wet	*3.333*		*81*	*30-130*			
Surrogate: Phenol-d6	*3.76*		mg/kg wet	*5.000*		*75*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.94*		mg/kg wet	*3.333*		*118*	*30-130*			
LCS Dup										
1,1-Biphenyl	2.25	0.333	mg/kg wet	3.333		68	40-140	13	30	
1,2,4-Trichlorobenzene	2.23	0.333	mg/kg wet	3.333		67	40-140	15	30	
1,2-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		63	40-140	11	30	
1,3-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	10	30	
1,4-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	11	30	
2,3,4,6-Tetrachlorophenol	2.50	1.67	mg/kg wet	3.333		75	30-130	10	30	
2,4,5-Trichlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130	12	30	
2,4,6-Trichlorophenol	2.60	0.333	mg/kg wet	3.333		78	30-130	12	30	
2,4-Dichlorophenol	2.34	0.333	mg/kg wet	3.333		70	30-130	16	30	
2,4-Dimethylphenol	2.19	0.333	mg/kg wet	3.333		66	30-130	16	30	
2,4-Dinitrophenol	2.97	1.67	mg/kg wet	3.333		89	30-130	5	30	
2,4-Dinitrotoluene	2.60	0.333	mg/kg wet	3.333		78	40-140	7	30	
2,6-Dinitrotoluene	2.40	0.333	mg/kg wet	3.333		72	40-140	10	30	
2-Chloronaphthalene	2.20	0.333	mg/kg wet	3.333		66	40-140	15	30	
2-Chlorophenol	2.10	0.333	mg/kg wet	3.333		63	30-130	14	30	
2-Methylphenol	2.06	0.333	mg/kg wet	3.333		62	30-130	18	30	
2-Nitroaniline	2.00	0.333	mg/kg wet	3.333		60	40-140	10	30	
2-Nitrophenol	2.15	0.333	mg/kg wet	3.333		65	30-130	16	30	
3,3´-Dichlorobenzidine	2.21	0.667	mg/kg wet	3.333		66	40-140	10	30	
3+4-Methylphenol	3.83	0.667	mg/kg wet	6.667		57	30-130	13	30	
3-Nitroaniline	2.11	0.333	mg/kg wet	3.333		63	40-140	9	30	
4,6-Dinitro-2-Methylphenol	3.08	1.67	mg/kg wet	3.333		92	30-130	7	30	
4-Bromophenyl-phenylether	2.75	0.333	mg/kg wet	3.333		82	40-140	11	30	
4-Chloro-3-Methylphenol	2.19	0.333	mg/kg wet	3.333		66	30-130	12	30	
4-Chloroaniline	1.43	0.667	mg/kg wet	3.333		43	40-140	16	30	
4-Chloro-phenyl-phenyl ether	2.45	0.333	mg/kg wet	3.333		73	40-140	12	30	
4-Nitroaniline	2.30	0.333	mg/kg wet	3.333		69	40-140	5	30	
4-Nitrophenol	2.28	1.67	mg/kg wet	3.333		68	30-130	6	30	
Acetophenone	1.78	0.667	mg/kg wet	3.333		53	40-140	13	30	
Aniline	1.58	0.667	mg/kg wet	3.333		48	40-140	15	30	
Azobenzene	2.36	0.333	mg/kg wet	3.333		71	40-140	9	30	
Benzoic Acid	2.54	1.67	mg/kg wet	3.333		76	40-140	8	30	
Benzyl Alcohol	1.70	0.333	mg/kg wet	3.333		51	40-140	17	30	
bis(2-Chloroethoxy)methane	2.04	0.333	mg/kg wet	3.333		61	40-140	18	30	
bis(2-Chloroethyl)ether	2.00	0.333	mg/kg wet	3.333		60	40-140	14	30	
bis(2-chloroisopropyl)Ether	1.95	0.333	mg/kg wet	3.333		59	40-140	18	30	
bis(2-Ethylhexyl)phthalate	3.05	0.333	mg/kg wet	3.333		92	40-140	11	30	
Butylbenzylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140	12	30	
Carbazole	2.54	0.333	mg/kg wet	3.333		76	40-140	5	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91630 - 3546										
Dibenzofuran	2.28	0.333	mg/kg wet	3.333		68	40-140	12	30	
Diethylphthalate	2.55	0.333	mg/kg wet	3.333		76	40-140	10	30	
Dimethylphthalate	2.45	0.333	mg/kg wet	3.333		74	40-140	11	30	
Di-n-butylphthalate	2.68	0.333	mg/kg wet	3.333		80	40-140	8	30	
Di-n-octylphthalate	3.01	0.333	mg/kg wet	3.333		90	40-140	12	30	
Hexachlorobenzene	2.78	0.167	mg/kg wet	3.333		83	40-140	10	30	
Hexachlorobutadiene	2.35	0.333	mg/kg wet	3.333		70	40-140	16	30	
Hexachlorocyclopentadiene	2.27	1.67	mg/kg wet	3.333		68	40-140	17	30	
Hexachloroethane	2.08	0.333	mg/kg wet	3.333		62	40-140	12	30	
Isophorone	1.86	0.333	mg/kg wet	3.333		56	40-140	19	30	
Nitrobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	15	30	
N-Nitrosodimethylamine	1.79	0.333	mg/kg wet	3.333		54	40-140	6	30	
N-Nitroso-Di-n-Propylamine	1.91	0.333	mg/kg wet	3.333		57	40-140	17	30	
N-nitrosodiphenylamine	2.72	0.333	mg/kg wet	3.333		82	40-140	8	30	
Pentachlorophenol	3.16	1.67	mg/kg wet	3.333		95	30-130	7	30	
Phenol	1.98	0.333	mg/kg wet	3.333		59	30-130	14	30	
Pyridine	1.88	1.67	mg/kg wet	3.333		56	40-140	8	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.27*		mg/kg wet	*3.333*		*68*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.46*		mg/kg wet	*5.000*		*89*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.50*		mg/kg wet	*5.000*		*70*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.57*		mg/kg wet	*3.333*		*77*	*30-130*			
Surrogate: 2-Fluorophenol	*3.75*		mg/kg wet	*5.000*		*75*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.40*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: Phenol-d6	*3.36*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.55*		mg/kg wet	*3.333*		*106*	*30-130*			
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ91630 - 3546										
Blank										
2-Methylnaphthalene	ND	0.017	mg/kg wet							
Acenaphthene	ND	0.017	mg/kg wet							
Acenaphthylene	ND	0.017	mg/kg wet							
Anthracene	ND	0.017	mg/kg wet							
Benzo(a)anthracene	ND	0.017	mg/kg wet							
Benzo(a)pyrene	ND	0.017	mg/kg wet							
Benzo(b)fluoranthene	ND	0.017	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.017	mg/kg wet							
Benzo(k)fluoranthene	ND	0.017	mg/kg wet							
Chrysene	ND	0.017	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.017	mg/kg wet							
Fluoranthene	ND	0.017	mg/kg wet							
Fluorene	ND	0.017	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.017	mg/kg wet							
Naphthalene	ND	0.017	mg/kg wet							
Phenanthrene	ND	0.017	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ91630 - 3546										
Pyrene	ND	0.017	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.37*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.43*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.44*		mg/kg wet	*3.333*		*103*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.14*		mg/kg wet	*3.333*		*94*	*30-130*			
LCS										
2-Methylnaphthalene	3.21	0.170	mg/kg wet	3.333		96	40-140			
Acenaphthene	3.38	0.170	mg/kg wet	3.333		101	40-140			
Acenaphthylene	3.34	0.170	mg/kg wet	3.333		100	40-140			
Anthracene	3.58	0.170	mg/kg wet	3.333		107	40-140			
Benzo(a)anthracene	3.58	0.170	mg/kg wet	3.333		108	40-140			
Benzo(a)pyrene	3.57	0.170	mg/kg wet	3.333		107	40-140			
Benzo(b)fluoranthene	3.72	0.170	mg/kg wet	3.333		111	40-140			
Benzo(g,h,i)perylene	3.48	0.170	mg/kg wet	3.333		104	40-140			
Benzo(k)fluoranthene	3.58	0.170	mg/kg wet	3.333		107	40-140			
Chrysene	3.77	0.170	mg/kg wet	3.333		113	40-140			
Dibenzo(a,h)Anthracene	3.62	0.170	mg/kg wet	3.333		109	40-140			
Fluoranthene	3.63	0.170	mg/kg wet	3.333		109	40-140			
Fluorene	3.49	0.170	mg/kg wet	3.333		105	40-140			
Indeno(1,2,3-cd)Pyrene	3.58	0.170	mg/kg wet	3.333		107	40-140			
Naphthalene	3.03	0.170	mg/kg wet	3.333		91	40-140			
Phenanthrene	3.41	0.170	mg/kg wet	3.333		102	40-140			
Pyrene	3.81	0.170	mg/kg wet	3.333		114	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*3.14*		mg/kg wet	*3.333*		*94*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.52*		mg/kg wet	*3.333*		*106*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.99*		mg/kg wet	*3.333*		*120*	*30-130*			
Surrogate: p-Terphenyl-d14	*4.10*		mg/kg wet	*3.333*		*123*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.64	0.170	mg/kg wet	3.333		79	40-140	19	30	
Acenaphthene	2.97	0.170	mg/kg wet	3.333		89	40-140	13	30	
Acenaphthylene	2.94	0.170	mg/kg wet	3.333		88	40-140	13	30	
Anthracene	3.32	0.170	mg/kg wet	3.333		100	40-140	8	30	
Benzo(a)anthracene	3.31	0.170	mg/kg wet	3.333		99	40-140	8	30	
Benzo(a)pyrene	3.29	0.170	mg/kg wet	3.333		99	40-140	8	30	
Benzo(b)fluoranthene	3.45	0.170	mg/kg wet	3.333		103	40-140	7	30	
Benzo(g,h,i)perylene	3.18	0.170	mg/kg wet	3.333		95	40-140	9	30	
Benzo(k)fluoranthene	3.24	0.170	mg/kg wet	3.333		97	40-140	10	30	
Chrysene	3.45	0.170	mg/kg wet	3.333		104	40-140	9	30	
Dibenzo(a,h)Anthracene	3.33	0.170	mg/kg wet	3.333		100	40-140	8	30	
Fluoranthene	3.39	0.170	mg/kg wet	3.333		102	40-140	7	30	
Fluorene	3.12	0.170	mg/kg wet	3.333		94	40-140	11	30	
Indeno(1,2,3-cd)Pyrene	3.30	0.170	mg/kg wet	3.333		99	40-140	8	30	
Naphthalene	2.58	0.170	mg/kg wet	3.333		77	40-140	16	30	
Phenanthrene	3.16	0.170	mg/kg wet	3.333		95	40-140	8	30	
Pyrene	3.50	0.170	mg/kg wet	3.333		105	40-140	9	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ91630 - 3546										
Surrogate: 1,2-Dichlorobenzene-d4	*2.92*		mg/kg wet	*3.333*		*88*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*3.10*		mg/kg wet	*3.333*		*93*	*30-130*			
Surrogate: Nitrobenzene-d5	*3.67*		mg/kg wet	*3.333*		*110*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.96*		mg/kg wet	*3.333*		*119*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0560

Notes and Definitions

U	Analyte included in the analysis, but not detected
S-	Surrogate recovery(ies) below lower control limit (S-).
Q	Calibration required quadratic regression (Q).
J	Reported between MDL and MRL
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0560

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 19J0560
Date Received: 10/16/2019
Project Due Date: 10/23/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	399376	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	399392	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	399393	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	399394	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	399375	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	399389	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	399390	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	399391	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	399374	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	399386	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	399387	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	399388	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	399373	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	399383	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	399384	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	399385	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	399372	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
05	399380	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	399381	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	399382	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	399371	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
06	399377	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	399378	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0560

Date Received: 10/16/2019

06	399379	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	399370	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Were all containers scanned into storage/lab? Initials

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/16/19 2105

Reviewed By: Date & Time: 10/16/19 2107

Delivered By: 10/16/19 2140

CHAIN OF CUSTODY

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

ESS Lab # 1950560
Reporting Limits
Electonic Deliverables: ☑ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Company Name: GZA	Project #: 34644	Project Name: Mtk - Area Landfill	
Contact Person: Richard Carlone	Address: 100 Valley St, Suite 300		
City: Providence	State: RI	Zip Code: 02909	PO #:
Telephone Number:	FAX Number:	Email Address: richard.carlone@gza.com	

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	TOC	Metals 1,2	SVOC	TPH	Pest.	PCBs
	10/16/19	0715	Grab	SW	SSW-1	X	X	X	X	X	X	X
	10/16/19	1010	Grab	SW	SSW-10	X	X	X	X	X	X	X
1	10/16/19	0800	Grab	Sed.	SSW-1 (0-6")	X		X	X	X	X	X
2	10/16/19	0800	Grab	sed.	SSW-1 (6-18")	X		X	X	X	X	X
	10/16/19	0800	Grab	sed.	SSW-1 (18-36") [3]	X		X	X	X	X	X
3 4	10/16/19	1310	Grab	sed.	SSW-10 (0-6")	X		X	X	X	X	X
4 5A	10/16/19	1310	Grab	sed.	SSW-10 (6-18")	X		X	X	X	X	X
	10/16/19	1310	Grab	sed.	SSW-10 (18-36") [3]	X		X	X	X	X	X
5 6	10/16/19	1445	Grab	sed.	SSW-9 (0-6")	X		X	X	X	X	X
6 7A	10/16/19	1445	Grab	sed.	SSW-9 (6-18")	X		X	X	X	X	X
						V	V	P/A	AG	AG	AG	AG
						7	7	3	1	1	1	1
						2	2	4	1	1	1	1
					Number of Containers per Sample:	3	2	13	23	13	13	23

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Laboratory Use Only
Cooler Present: ✓ ○ Drop Off
Seals Intact: ○ Pickup
Cooler Temperature: 3.5, 1.7C RLP

Sampled by: Rowan Hayes (RCH)

Comments: Please specify "Other" preservative and containers types in this space
All SW samples were field filtered.
1. SW metals: 1S solid waste, mercury, iron
2. Sed metals: 1S solid waste, mercury
3. Sed samples to from (18-36") place on HOLD until other results come back. please

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/16/19 1753	10/16/19 1740		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CHAIN OF CUSTODY

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

ESS Lab # 19J0560

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits
Electonic Deliverables: ☑ Data Checker ☑ Excel ☐ Other (Please Specify →) PDF

Company Name	Project #	Project Name
GZA	34640	Trink - Away Landfill

Contact Person	Address	
Richard Carlone	148 Valley St, Suite 300	

City	State	Zip Code	PO #
Providence	RI	02909	

Telephone Number	FAX Number	Email Address
		richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC	SVOC	TAL	Pest.	PCB	Metals
	10/16/19	1415	Grab	Sed.	SSW-4 (18-30")	X	X	X	X	X	X
	10/16/19	0900	Grab (20ml)	SW	Trip Blank	X					
78	10/16/19	0900	Grab	Sed.	Trip Blank	X					

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	V	AG	AG	AG	AG	AG	AG (120ml)
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	1	1	1	1	1	1	
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Other*	6	1	1	1	1	1	
											Number of Containers per Sample:	1	←		3		→	

Laboratory Use Only
Cooler Present: ✓ ○ Drop Off
Seals Intact: ○ Pickup
Cooler Temperature: 3-5, 0.5 °C RLC

Sampled by: Ruvan Hayes

Please specify "Other" preservative and containers types in this space

Comments:
1. Sed metals: IS solid waste, mercury
2. Sed samples (18-30") place on HOLD until other results come back.
page 2 of 2

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/16/19 1733	10/16/19 1740		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
	10/16/19		

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19J0620

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:52 pm, Oct 29, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

SAMPLE RECEIPT

The following samples were received on October 17, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0620-01	SSW-8 0-6in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-02	SSW-8 6-18in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-03	SSW-11 0-6in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-04	SSW-11 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-05	SSW-7 0-6in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-06	SSW-7 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-07	SSW-6 0-6in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-08	SSW-6 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-09	SSW-5 0-6in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-10	SSW-5 6-18in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0620-11	Trip Blank	Sediment	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J0620

PROJECT NARRATIVE

8270D Semi-Volatile Organic Compounds

C9J0338-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (98% @ 80-120%), 4,6-Dinitro-2-Methylphenol (100% @ 80-120%), Benzoic Acid (88% @ 80-120%), Pentachlorophenol (113% @ 80-120%)

C9J0338-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Hexachlorobutadiene (27% @ 20%), Hexachlorocyclopentadiene (26% @ 20%)

C9J0359-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (87% @ 80-120%), 4,6-Dinitro-2-Methylphenol (98% @ 80-120%), Benzoic Acid (81% @ 80-120%), Pentachlorophenol (109% @ 80-120%)

C9J0359-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Hexachlorobutadiene (22% @ 20%)

C9J0359-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (22% @ 20%), N-Nitrosodimethylamine (29% @ 20%), Pyridine (25% @ 20%)

C9J0360-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (90% @ 80-120%), 4,6-Dinitro-2-Methylphenol (105% @ 80-120%), Benzoic Acid (88% @ 80-120%)

C9J0384-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (107% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (104% @ 80-120%), Pentachlorophenol (106% @ 80-120%)

8270D(SIM) Polynuclear Aromatic Hydrocarbons

C9J0421-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Methylnaphthalene (30% @ 20%)

Total Metals

CJ92155-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Cadmium (77% @ 80-120%)

CJ92156-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Mercury (124% @ 80-120%)

CJ92156-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Mercury (41% @ 20%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J0620

DATA USABILITY LINKS

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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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (7.20)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Arsenic	**8.98** (3.60)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Barium	**23.6** (3.60)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Beryllium	**0.30** (0.16)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Cadmium	ND (0.72)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Chromium	**8.77** (1.44)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Cobalt	**7.48** (1.44)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Copper	**25.5** (3.60)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Lead	**17.7** (7.20)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Mercury	ND (0.036)		7471B		1	MKS	10/22/19 13:20	0.94	40	CJ92156
Nickel	**18.5** (3.60)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Selenium	ND (7.20)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Silver	ND (0.72)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Thallium	ND (0.72)		6020A		1	NAR	10/23/19 10:13	2.37	100	CJ92155
Vanadium	**12.7** (1.44)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155
Zinc	**115** (3.60)		6010C		1	BJV	10/22/19 4:58	2.37	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (2.52)	0.504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (101)	95.8	8260B		1	10/22/19 14:58	C9J0403	CJ92241
1-Chlorohexane	ND (0.504)	0.202	8260B		1	10/22/19 14:58	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
2-Butanone	ND (2.52)	1.71	8260B		1	10/22/19 14:58	C9J0403	CJ92241
2-Chlorotoluene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
2-Hexanone	ND (2.52)	0.756	8260B		1	10/22/19 14:58	C9J0403	CJ92241
4-Chlorotoluene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (2.52)	0.807	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Acetone	ND (2.52)	1.36	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Benzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Bromobenzene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Bromodichloromethane	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Bromoform	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Bromomethane	ND (0.504)	0.202	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Carbon Disulfide	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Chlorobenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Chloroethane	ND (0.504)	0.202	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Chloroform	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Chloromethane	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Dibromochloromethane	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Dibromomethane	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Diethyl Ether	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Di-isopropyl ether	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Ethylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Isopropylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Methylene Chloride	**J 0.308** (1.01)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Naphthalene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
n-Butylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
n-Propylbenzene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
sec-Butylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Styrene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
tert-Butylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Tetrachloroethene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Tetrahydrofuran	ND (2.52)	0.807	8260B		1	10/22/19 14:58	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.504)	0.151	8260B		1	10/22/19 14:58	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Trichloroethene	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.504)	0.202	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Vinyl Acetate	ND (0.504)	0.252	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Vinyl Chloride	ND (0.504)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Xylene O	ND (0.504)	0.0504	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Xylene P,M	ND (1.01)	0.101	8260B		1	10/22/19 14:58	C9J0403	CJ92241
Xylenes (Total)	ND (1.01)		8260B		1	10/22/19 14:58		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*107 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*90 %*		*70-130*
Surrogate: Dibromofluoromethane	*107 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
4,4´-DDE	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
4,4´-DDT	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Aldrin	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
alpha-BHC	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
alpha-Chlordane	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
beta-BHC	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Chlordane (Total)	ND (0.0536)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
delta-BHC	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Dieldrin	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Endosulfan I	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Endosulfan II	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Endrin	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Endrin Ketone	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0027)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
gamma-Chlordane	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Heptachlor	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Methoxychlor	ND (0.0045)		8081B		1	10/24/19 21:39	C9J0478	CJ92110
Toxaphene	ND (0.223)		8081B		1	10/24/19 21:39	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*57 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*63 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1221	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1232	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1242	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1248	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1254	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1260	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1262	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803
Aroclor 1268	ND (0.09)		8082A		1	10/21/19 19:12		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (66.6)		8100M		1	10/21/19 14:43	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*84 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/18/19 15:26

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
1,2,4-Trichlorobenzene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
1,2-Dichlorobenzene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
1,3-Dichlorobenzene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
1,4-Dichlorobenzene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,3,4,6-Tetrachlorophenol	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,4,5-Trichlorophenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,4,6-Trichlorophenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,4-Dichlorophenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,4-Dimethylphenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,4-Dinitrophenol	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,4-Dinitrotoluene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2,6-Dinitrotoluene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2-Chloronaphthalene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2-Chlorophenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2-Methylphenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2-Nitroaniline	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
2-Nitrophenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
3,3´-Dichlorobenzidine	ND (1.19)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
3+4-Methylphenol	ND (1.19)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
3-Nitroaniline	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4,6-Dinitro-2-Methylphenol	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4-Bromophenyl-phenylether	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4-Chloro-3-Methylphenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4-Chloroaniline	ND (1.19)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4-Chloro-phenyl-phenyl ether	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4-Nitroaniline	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
4-Nitrophenol	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Acetophenone	ND (1.19)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Aniline	ND (1.19)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Azobenzene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Benzoic Acid	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/18/19 15:26

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
bis(2-Chloroethoxy)methane	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
bis(2-Chloroethyl)ether	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
bis(2-chloroisopropyl)Ether	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
bis(2-Ethylhexyl)phthalate	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Butylbenzylphthalate	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Carbazole	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Dibenzofuran	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Diethylphthalate	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Dimethylphthalate	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Di-n-butylphthalate	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Di-n-octylphthalate	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Hexachlorobenzene	ND (0.299)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Hexachlorobutadiene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Hexachlorocyclopentadiene	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Hexachloroethane	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Isophorone	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Nitrobenzene	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
N-Nitrosodimethylamine	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
N-Nitroso-Di-n-Propylamine	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
N-nitrosodiphenylamine	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Pentachlorophenol	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Phenol	ND (0.596)		8270D		1	10/21/19 17:46	C9J0359	CJ91807
Pyridine	ND (2.99)		8270D		1	10/21/19 17:46	C9J0359	CJ91807

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*70 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*101 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*72 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*82 %*		*30-130*
Surrogate: 2-Fluorophenol	*70 %*		*30-130*
Surrogate: Nitrobenzene-d5	*71 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/18/19 15:26

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*65 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*100 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 0-6in
Date Sampled: 10/17/19 07:45
Percent Solids: 59
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/18/19 15:26

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Acenaphthene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Acenaphthylene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Anthracene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Benzo(a)anthracene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Benzo(a)pyrene	**0.035** (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Benzo(b)fluoranthene	**0.054** (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Benzo(g,h,i)perylene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Benzo(k)fluoranthene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Chrysene	**0.042** (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Dibenzo(a,h)Anthracene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Fluoranthene	**0.071** (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Fluorene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Indeno(1,2,3-cd)Pyrene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Naphthalene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Phenanthrene	ND (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807
Pyrene	**0.064** (0.030)		8270D SIM		1	10/22/19 7:15	C9J0386	CJ91807

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.86)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Arsenic	**3.94** (2.93)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Barium	**22.4** (2.93)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Beryllium	**0.27** (0.13)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Cadmium	ND (0.59)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Chromium	**9.80** (1.17)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Cobalt	**5.47** (1.17)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Copper	**17.0** (2.93)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Lead	**7.47** (5.86)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Mercury	ND (0.018)		7471B		1	MKS	10/22/19 13:35	1.38	40	CJ92156
Nickel	**16.8** (2.93)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Selenium	ND (5.86)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Silver	ND (0.59)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Thallium	ND (0.59)		6020A		1	NAR	10/23/19 10:17	2.14	100	CJ92155
Vanadium	**11.4** (1.17)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155
Zinc	**90.2** (2.93)		6010C		1	BJV	10/22/19 5:29	2.14	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 17.4
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.34)	0.267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (53.4)	50.7	8260B		1	10/22/19 15:25	C9J0403	CJ92241
1-Chlorohexane	ND (0.267)	0.107	8260B		1	10/22/19 15:25	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
2-Butanone	ND (1.34)	0.908	8260B		1	10/22/19 15:25	C9J0403	CJ92241
2-Chlorotoluene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
2-Hexanone	ND (1.34)	0.401	8260B		1	10/22/19 15:25	C9J0403	CJ92241
4-Chlorotoluene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.34)	0.427	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Acetone	ND (1.34)	0.721	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Benzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Bromobenzene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 17.4
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Bromodichloromethane	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Bromoform	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Bromomethane	ND (0.267)	0.107	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Carbon Disulfide	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Chlorobenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Chloroethane	ND (0.267)	0.107	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Chloroform	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Chloromethane	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Dibromochloromethane	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Dibromomethane	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Diethyl Ether	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Di-isopropyl ether	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Ethylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Isopropylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Methylene Chloride	**J 0.134** (0.534)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Naphthalene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
n-Butylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
n-Propylbenzene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
sec-Butylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Styrene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
tert-Butylbenzene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Tetrachloroethene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Tetrahydrofuran	ND (1.34)	0.427	8260B		1	10/22/19 15:25	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 17.4
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.267)	0.0801	8260B		1	10/22/19 15:25	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Trichloroethene	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.267)	0.107	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Vinyl Acetate	ND (0.267)	0.134	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Vinyl Chloride	ND (0.267)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Xylene O	ND (0.267)	0.0267	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Xylene P,M	ND (0.534)	0.0534	8260B		1	10/22/19 15:25	C9J0403	CJ92241
Xylenes (Total)	ND (0.534)		8260B		1	10/22/19 15:25		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*94 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 20.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
4,4´-DDE	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
4,4´-DDT	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Aldrin	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
alpha-BHC	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
alpha-Chlordane	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
beta-BHC	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Chlordane (Total)	ND (0.0364)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
delta-BHC	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Dieldrin	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Endosulfan I	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Endosulfan II	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Endrin	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Endrin Ketone	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
gamma-Chlordane	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Heptachlor	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Methoxychlor	ND (0.0030)		8081B		1	10/24/19 22:10	C9J0478	CJ92110
Toxaphene	ND (0.151)		8081B		1	10/24/19 22:10	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*57 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*52 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1221	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1232	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1242	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1248	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1254	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1260	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1262	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803
Aroclor 1268	ND (0.06)		8082A		1	10/21/19 19:31		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (46.8)		8100M		1	10/21/19 15:15	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/18/19 15:26

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
1,2,4-Trichlorobenzene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
1,2-Dichlorobenzene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
1,3-Dichlorobenzene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
1,4-Dichlorobenzene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,3,4,6-Tetrachlorophenol	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,4,5-Trichlorophenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,4,6-Trichlorophenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,4-Dichlorophenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,4-Dimethylphenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,4-Dinitrophenol	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,4-Dinitrotoluene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2,6-Dinitrotoluene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2-Chloronaphthalene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2-Chlorophenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2-Methylphenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2-Nitroaniline	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
2-Nitrophenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
3,3´-Dichlorobenzidine	ND (0.837)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
3+4-Methylphenol	ND (0.837)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
3-Nitroaniline	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4,6-Dinitro-2-Methylphenol	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4-Bromophenyl-phenylether	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4-Chloro-3-Methylphenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4-Chloroaniline	ND (0.837)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4-Chloro-phenyl-phenyl ether	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4-Nitroaniline	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
4-Nitrophenol	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Acetophenone	ND (0.837)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Aniline	ND (0.837)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Azobenzene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Benzoic Acid	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/18/19 15:26

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
bis(2-Chloroethoxy)methane	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
bis(2-Chloroethyl)ether	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
bis(2-chloroisopropyl)Ether	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
bis(2-Ethylhexyl)phthalate	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Butylbenzylphthalate	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Carbazole	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Dibenzofuran	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Diethylphthalate	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Dimethylphthalate	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Di-n-butylphthalate	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Di-n-octylphthalate	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Hexachlorobenzene	ND (0.209)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Hexachlorobutadiene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Hexachlorocyclopentadiene	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Hexachloroethane	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Isophorone	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Nitrobenzene	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
N-Nitrosodimethylamine	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
N-Nitroso-Di-n-Propylamine	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
N-nitrosodiphenylamine	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Pentachlorophenol	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Phenol	ND (0.418)		8270D		1	10/21/19 18:15	C9J0359	CJ91807
Pyridine	ND (2.09)		8270D		1	10/21/19 18:15	C9J0359	CJ91807

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*95 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*69 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*80 %*		*30-130*
Surrogate: 2-Fluorophenol	*69 %*		*30-130*
Surrogate: Nitrobenzene-d5	*68 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/18/19 15:26

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*62 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*92 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8 6-18in
Date Sampled: 10/17/19 07:45
Percent Solids: 80
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/18/19 15:26

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Acenaphthene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Acenaphthylene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Anthracene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Benzo(a)anthracene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Benzo(a)pyrene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Benzo(b)fluoranthene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Benzo(g,h,i)perylene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Benzo(k)fluoranthene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Chrysene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Dibenzo(a,h)Anthracene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Fluoranthene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Fluorene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Indeno(1,2,3-cd)Pyrene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Naphthalene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Phenanthrene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807
Pyrene	ND (0.021)		8270D SIM		1	10/22/19 8:03	C9J0386	CJ91807

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.59)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Arsenic	**3.67** (1.79)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Barium	**11.2** (1.79)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Beryllium	**0.23** (0.08)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Cadmium	ND (0.36)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Chromium	**3.12** (0.72)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Cobalt	**2.98** (0.72)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Copper	**5.31** (1.79)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Lead	**6.36** (3.59)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Mercury	ND (0.017)		7471B		1	MKS	10/22/19 13:45	1.35	40	CJ92156
Nickel	**4.36** (1.79)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Selenium	ND (3.59)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Silver	ND (0.36)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Thallium	ND (3.59)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Vanadium	**4.94** (0.72)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155
Zinc	**37.5** (1.79)		6010C		1	BJV	10/22/19 5:48	3.27	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 19.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.07)	0.213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (42.7)	40.6	8260B		1	10/22/19 15:51	C9J0403	CJ92241
1-Chlorohexane	ND (0.213)	0.0854	8260B		1	10/22/19 15:51	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
2-Butanone	ND (1.07)	0.726	8260B		1	10/22/19 15:51	C9J0403	CJ92241
2-Chlorotoluene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
2-Hexanone	ND (1.07)	0.320	8260B		1	10/22/19 15:51	C9J0403	CJ92241
4-Chlorotoluene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.07)	0.341	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Acetone	ND (1.07)	0.576	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Benzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Bromobenzene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 19.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Bromodichloromethane	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Bromoform	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Bromomethane	ND (0.213)	0.0854	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Carbon Disulfide	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Chlorobenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Chloroethane	ND (0.213)	0.0854	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Chloroform	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Chloromethane	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Dibromochloromethane	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Dibromomethane	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Diethyl Ether	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Di-isopropyl ether	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Ethylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Isopropylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Methylene Chloride	**J 0.0662** (0.427)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Naphthalene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
n-Butylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
n-Propylbenzene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
sec-Butylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Styrene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
tert-Butylbenzene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Tetrachloroethene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Tetrahydrofuran	ND (1.07)	0.341	8260B		1	10/22/19 15:51	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 19.7
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.213)	0.0640	8260B		1	10/22/19 15:51	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Trichloroethene	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.213)	0.0854	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Vinyl Acetate	ND (0.213)	0.107	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Vinyl Chloride	ND (0.213)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Xylene O	ND (0.213)	0.0213	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Xylene P,M	ND (0.427)	0.0427	8260B		1	10/22/19 15:51	C9J0403	CJ92241
Xylenes (Total)	ND (0.427)		8260B		1	10/22/19 15:51		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*87 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*90 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
4,4´-DDE	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
4,4´-DDT	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Aldrin	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
alpha-BHC	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
alpha-Chlordane	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
beta-BHC	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Chlordane (Total)	ND (0.0359)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
delta-BHC	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Dieldrin	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Endosulfan I	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Endosulfan II	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Endrin	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Endrin Ketone	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
gamma-Chlordane	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Heptachlor	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Methoxychlor	ND (0.0030)		8081B		1	10/24/19 22:40	C9J0478	CJ92110
Toxaphene	ND (0.150)		8081B		1	10/24/19 22:40	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1221	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1232	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1242	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1248	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1254	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1260	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1262	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803
Aroclor 1268	ND (0.06)		8082A		1	10/21/19 19:50		CJ91803

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 20.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**70.3** (42.5)		8100M		1	10/21/19 15:47	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2-Chlorophenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2-Methylphenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2-Nitroaniline	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
2-Nitrophenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.799)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
3+4-Methylphenol	ND (0.799)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
3-Nitroaniline	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4-Chloroaniline	ND (0.799)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4-Nitroaniline	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
4-Nitrophenol	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Acetophenone	ND (0.799)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Aniline	ND (0.799)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Azobenzene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Benzoic Acid	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Butylbenzylphthalate	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Carbazole	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Dibenzofuran	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Diethylphthalate	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Dimethylphthalate	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Hexachlorobenzene	ND (0.200)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Hexachloroethane	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Isophorone	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Nitrobenzene	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Pentachlorophenol	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Phenol	ND (0.399)		8270D		1	10/21/19 21:47	C9J0360	CJ92111
Pyridine	ND (2.00)		8270D		1	10/21/19 21:47	C9J0360	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*72 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*71 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: 2-Fluorophenol	*73 %*		*30-130*
Surrogate: Nitrobenzene-d5	*67 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*72 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*82 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 0-6in
Date Sampled: 10/17/19 09:45
Percent Solids: 85
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Acenaphthene	ND (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Acenaphthylene	**0.113** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Anthracene	**0.093** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Benzo(a)anthracene	**0.238** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Benzo(a)pyrene	**0.182** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Benzo(b)fluoranthene	**0.308** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Benzo(g,h,i)perylene	**0.146** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Benzo(k)fluoranthene	**0.095** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Chrysene	**0.279** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	**0.040** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Fluoranthene	**0.516** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Fluorene	**0.025** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	**0.147** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Naphthalene	ND (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Phenanthrene	**0.380** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111
Pyrene	**0.543** (0.020)		8270D SIM		1	10/23/19 7:15	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.39)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Arsenic	**7.98** (2.70)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Barium	**23.3** (2.70)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Beryllium	**0.38** (0.12)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Cadmium	ND (0.54)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Chromium	**11.0** (1.08)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Cobalt	**8.47** (1.08)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Copper	**19.5** (2.70)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Lead	**17.2** (5.39)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Mercury	**0.027** (0.015)		7471B		1	MKS	10/22/19 13:47	1.84	40	CJ92156
Nickel	**13.4** (2.70)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Selenium	ND (5.39)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Silver	ND (0.54)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Thallium	ND (5.39)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Vanadium	**21.3** (1.08)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155
Zinc	**47.1** (2.70)		6010C		1	BJV	10/22/19 5:52	2.67	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 12.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (2.17)	0.433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (86.7)	82.3	8260B		1	10/22/19 16:18	C9J0403	CJ92241
1-Chlorohexane	ND (0.433)	0.173	8260B		1	10/22/19 16:18	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
2-Butanone	ND (2.17)	1.47	8260B		1	10/22/19 16:18	C9J0403	CJ92241
2-Chlorotoluene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
2-Hexanone	ND (2.17)	0.650	8260B		1	10/22/19 16:18	C9J0403	CJ92241
4-Chlorotoluene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (2.17)	0.693	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Acetone	ND (2.17)	1.17	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Benzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Bromobenzene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 12.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Bromodichloromethane	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Bromoform	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Bromomethane	ND (0.433)	0.173	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Carbon Disulfide	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Chlorobenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Chloroethane	ND (0.433)	0.173	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Chloroform	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Chloromethane	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Dibromochloromethane	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Dibromomethane	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Diethyl Ether	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Di-isopropyl ether	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Ethylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Isopropylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Methylene Chloride	**J 0.139** (0.867)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Naphthalene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
n-Butylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
n-Propylbenzene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
sec-Butylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Styrene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
tert-Butylbenzene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Tetrachloroethene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Tetrahydrofuran	ND (2.17)	0.693	8260B		1	10/22/19 16:18	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 12.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.433)	0.130	8260B		1	10/22/19 16:18	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Trichloroethene	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.433)	0.173	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Vinyl Acetate	ND (0.433)	0.217	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Vinyl Chloride	ND (0.433)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Xylene O	ND (0.433)	0.0433	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Xylene P,M	ND (0.867)	0.0867	8260B		1	10/22/19 16:18	C9J0403	CJ92241
Xylenes (Total)	ND (0.867)		8260B		1	10/22/19 16:18		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*94 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*87 %*		*70-130*
Surrogate: Dibromofluoromethane	*93 %*		*70-130*
Surrogate: Toluene-d8	*91 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD [2C]	**0.0229** (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
4,4´-DDE	**0.0046** (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
4,4´-DDT	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Aldrin	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
alpha-BHC	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
alpha-Chlordane	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
beta-BHC	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Chlordane (Total)	ND (0.0441)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
delta-BHC	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Dieldrin	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Endosulfan I	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Endosulfan II	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Endrin	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Endrin Ketone	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0022)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
gamma-Chlordane	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Heptachlor	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Methoxychlor	ND (0.0037)		8081B		1	10/24/19 23:11	C9J0478	CJ92110
Toxaphene	ND (0.184)		8081B		1	10/24/19 23:11	C9J0478	CJ92110

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*54 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*56 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1221	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1232	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1242	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1248	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1254	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1260	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1262	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803
Aroclor 1268	ND (0.07)		8082A		1	10/21/19 20:09		CJ91803

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (56.2)		8100M		1	10/21/19 16:19	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*92 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2-Chlorophenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2-Methylphenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2-Nitroaniline	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
2-Nitrophenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.917)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
3+4-Methylphenol	ND (0.917)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
3-Nitroaniline	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4-Chloroaniline	ND (0.917)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4-Nitroaniline	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
4-Nitrophenol	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Acetophenone	ND (0.917)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Aniline	ND (0.917)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Azobenzene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Benzoic Acid	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Butylbenzylphthalate	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Carbazole	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Dibenzofuran	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Diethylphthalate	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Dimethylphthalate	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Hexachlorobenzene	ND (0.230)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Hexachloroethane	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Isophorone	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Nitrobenzene	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Pentachlorophenol	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Phenol	ND (0.458)		8270D		1	10/21/19 22:14	C9J0360	CJ92111
Pyridine	ND (2.30)		8270D		1	10/21/19 22:14	C9J0360	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*81 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*69 %*		*30-130*
Surrogate: 2-Fluorophenol	*83 %*		*30-130*
Surrogate: Nitrobenzene-d5	*75 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*85 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 6-18in
Date Sampled: 10/17/19 09:45
Percent Solids: 69
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Acenaphthene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Acenaphthylene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Anthracene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Benzo(a)anthracene	**0.027** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Benzo(a)pyrene	**0.026** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Benzo(b)fluoranthene	**0.038** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Chrysene	**0.035** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Fluoranthene	**0.057** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Fluorene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Naphthalene	ND (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Phenanthrene	**0.024** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111
Pyrene	**0.067** (0.023)		8270D SIM		1	10/23/19 8:02	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.76)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Arsenic	**5.75** (2.38)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Barium	**16.9** (2.38)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Beryllium	**0.28** (0.10)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Cadmium	ND (0.48)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Chromium	**7.01** (0.95)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Cobalt	**4.67** (0.95)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Copper	**11.4** (2.38)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Lead	**8.90** (4.76)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Mercury	ND (0.036)		7471B		1	MKS	10/22/19 13:49	0.75	40	CJ92156
Nickel	**10.6** (2.38)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Selenium	ND (4.76)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Silver	ND (0.48)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Thallium	ND (4.76)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Vanadium	**8.86** (0.95)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155
Zinc	**23.1** (2.38)		6010C		1	BJV	10/22/19 5:56	2.88	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.84)	0.368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,4-Dichlorobenzene	**J 0.103** (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (73.7)	70.0	8260B		1	10/22/19 16:45	C9J0403	CJ92241
1-Chlorohexane	ND (0.368)	0.147	8260B		1	10/22/19 16:45	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
2-Butanone	ND (1.84)	1.25	8260B		1	10/22/19 16:45	C9J0403	CJ92241
2-Chlorotoluene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
2-Hexanone	ND (1.84)	0.553	8260B		1	10/22/19 16:45	C9J0403	CJ92241
4-Chlorotoluene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.84)	0.589	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Acetone	ND (1.84)	0.995	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Benzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Bromobenzene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Bromodichloromethane	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Bromoform	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Bromomethane	ND (0.368)	0.147	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Carbon Disulfide	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Chlorobenzene	**J 0.151** (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Chloroethane	ND (0.368)	0.147	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Chloroform	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Chloromethane	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Dibromochloromethane	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Dibromomethane	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Diethyl Ether	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Di-isopropyl ether	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Ethylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Isopropylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Methylene Chloride	**J 0.103** (0.737)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Naphthalene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
n-Butylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
n-Propylbenzene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
sec-Butylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Styrene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
tert-Butylbenzene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Tetrachloroethene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Tetrahydrofuran	ND (1.84)	0.589	8260B		1	10/22/19 16:45	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.368)	0.111	8260B		1	10/22/19 16:45	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Trichloroethene	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.368)	0.147	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Vinyl Acetate	ND (0.368)	0.184	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Vinyl Chloride	ND (0.368)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Xylene O	ND (0.368)	0.0368	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Xylene P,M	ND (0.737)	0.0737	8260B		1	10/22/19 16:45	C9J0403	CJ92241
Xylenes (Total)	ND (0.737)		8260B		1	10/22/19 16:45		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*90 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*81 %*		*70-130*
Surrogate: Dibromofluoromethane	*91 %*		*70-130*
Surrogate: Toluene-d8	*85 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
4,4´-DDE	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
4,4´-DDT	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Aldrin	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
alpha-BHC	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
alpha-Chlordane	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
beta-BHC	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Chlordane (Total)	ND (0.0394)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
delta-BHC	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Dieldrin	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Endosulfan I	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Endosulfan II	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Endrin	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Endrin Ketone	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0020)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
gamma-Chlordane	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Heptachlor	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Methoxychlor	ND (0.0033)		8081B		1	10/24/19 23:42	C9J0478	CJ92110
Toxaphene	ND (0.164)		8081B		1	10/24/19 23:42	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*63 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1221	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1232	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1242	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1248	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1254	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1260	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1262	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803
Aroclor 1268	ND (0.07)		8082A		1	10/21/19 20:28		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*65 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 20
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (51.5)		8100M		1	10/21/19 16:52	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*92 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2-Chlorophenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2-Methylphenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2-Nitroaniline	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
2-Nitrophenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.974)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
3+4-Methylphenol	ND (0.974)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
3-Nitroaniline	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4-Chloroaniline	ND (0.974)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4-Nitroaniline	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
4-Nitrophenol	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Acetophenone	ND (0.974)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Aniline	ND (0.974)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Azobenzene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Benzoic Acid	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Butylbenzylphthalate	**19.5** (4.86)		8270D		10	10/22/19 21:48	C9J0360	CJ92111
Carbazole	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Dibenzofuran	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Diethylphthalate	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Dimethylphthalate	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Hexachlorobenzene	ND (0.244)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Hexachloroethane	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Isophorone	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Nitrobenzene	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Pentachlorophenol	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Phenol	ND (0.486)		8270D		1	10/21/19 22:40	C9J0360	CJ92111
Pyridine	ND (2.44)		8270D		1	10/21/19 22:40	C9J0360	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*85 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*66 %*		*30-130*
Surrogate: 2-Fluorophenol	*81 %*		*30-130*
Surrogate: Nitrobenzene-d5	*71 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*77 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*87 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 0-6in
Date Sampled: 10/17/19 11:53
Percent Solids: 73
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Acenaphthene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Acenaphthylene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Anthracene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Benzo(a)anthracene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Benzo(a)pyrene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Benzo(b)fluoranthene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Chrysene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Fluoranthene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Fluorene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Naphthalene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Phenanthrene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111
Pyrene	ND (0.025)		8270D SIM		1	10/23/19 8:49	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.06)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Arsenic	**4.31** (2.03)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Barium	**11.4** (2.03)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Beryllium	**0.20** (0.09)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Cadmium	ND (0.41)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Chromium	**6.73** (0.81)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Cobalt	**4.38** (0.81)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Copper	**8.42** (2.03)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Lead	**5.03** (4.06)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Mercury	ND (0.026)		7471B		1	MKS	10/22/19 13:51	0.95	40	CJ92156
Nickel	**10.0** (2.03)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Selenium	ND (4.06)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Silver	ND (0.41)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Thallium	ND (4.06)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Vanadium	**8.52** (0.81)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155
Zinc	**19.1** (2.03)		6010C		1	BJV	10/22/19 8:17	3.11	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 17.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.32)	0.264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,4-Dichlorobenzene	**J 0.0527** (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (52.7)	50.1	8260B		1	10/22/19 17:11	C9J0403	CJ92241
1-Chlorohexane	ND (0.264)	0.105	8260B		1	10/22/19 17:11	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
2-Butanone	ND (1.32)	0.897	8260B		1	10/22/19 17:11	C9J0403	CJ92241
2-Chlorotoluene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
2-Hexanone	ND (1.32)	0.396	8260B		1	10/22/19 17:11	C9J0403	CJ92241
4-Chlorotoluene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.32)	0.422	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Acetone	ND (1.32)	0.712	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Benzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Bromobenzene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 17.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Bromodichloromethane	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Bromoform	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Bromomethane	ND (0.264)	0.105	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Carbon Disulfide	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Chlorobenzene	**J 0.0791** (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Chloroethane	ND (0.264)	0.105	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Chloroform	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Chloromethane	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Dibromochloromethane	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Dibromomethane	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Diethyl Ether	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Di-isopropyl ether	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Ethylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Isopropylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Methylene Chloride	**J 0.0738** (0.527)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Naphthalene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
n-Butylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
n-Propylbenzene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
sec-Butylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Styrene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
tert-Butylbenzene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Tetrachloroethene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Tetrahydrofuran	ND (1.32)	0.422	8260B		1	10/22/19 17:11	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 17.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.264)	0.0791	8260B		1	10/22/19 17:11	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Trichloroethene	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.264)	0.105	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Vinyl Acetate	ND (0.264)	0.132	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Vinyl Chloride	ND (0.264)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Xylene O	ND (0.264)	0.0264	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Xylene P,M	ND (0.527)	0.0527	8260B		1	10/22/19 17:11	C9J0403	CJ92241
Xylenes (Total)	ND (0.527)		8260B		1	10/22/19 17:11		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*88 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*70 %*		*70-130*
Surrogate: Dibromofluoromethane	*82 %*		*70-130*
Surrogate: Toluene-d8	*73 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
4,4´-DDE	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
4,4´-DDT	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Aldrin	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
alpha-BHC	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
alpha-Chlordane	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
beta-BHC	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Chlordane (Total)	ND (0.0388)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
delta-BHC	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Dieldrin	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Endosulfan I	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Endosulfan II	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Endrin	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Endrin Ketone	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0019)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
gamma-Chlordane	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Heptachlor	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Methoxychlor	ND (0.0032)		8081B		1	10/25/19 0:12	C9J0478	CJ92110
Toxaphene	ND (0.162)		8081B		1	10/25/19 0:12	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1221	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1232	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1242	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1248	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1254	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1260	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1262	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803
Aroclor 1268	ND (0.06)		8082A		1	10/21/19 20:48		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 20.3
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (46.6)		8100M		1	10/21/19 17:24	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*96 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2-Chlorophenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2-Methylphenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2-Nitroaniline	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
2-Nitrophenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.864)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
3+4-Methylphenol	ND (0.864)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
3-Nitroaniline	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4-Chloroaniline	ND (0.864)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4-Nitroaniline	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
4-Nitrophenol	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Acetophenone	ND (0.864)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Aniline	ND (0.864)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Azobenzene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Benzoic Acid	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Butylbenzylphthalate	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Carbazole	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Dibenzofuran	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Diethylphthalate	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Dimethylphthalate	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Hexachlorobenzene	ND (0.216)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Hexachloroethane	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Isophorone	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Nitrobenzene	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Pentachlorophenol	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Phenol	ND (0.432)		8270D		1	10/21/19 23:06	C9J0360	CJ92111
Pyridine	ND (2.16)		8270D		1	10/21/19 23:06	C9J0360	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*70 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*83 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*78 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*71 %*		*30-130*
Surrogate: 2-Fluorophenol	*80 %*		*30-130*
Surrogate: Nitrobenzene-d5	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*77 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*82 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 6-18in
Date Sampled: 10/17/19 11:53
Percent Solids: 79
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Acenaphthene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Acenaphthylene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Anthracene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Benzo(a)anthracene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Benzo(a)pyrene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Benzo(b)fluoranthene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Chrysene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Fluoranthene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Fluorene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Naphthalene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Phenanthrene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111
Pyrene	ND (0.022)		8270D SIM		1	10/23/19 9:35	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.71)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Arsenic	**9.07** (1.85)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Barium	**46.2** (1.85)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Beryllium	**0.12** (0.08)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Cadmium	**0.45** (0.37)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Chromium	**4.67** (0.74)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Cobalt	**3.68** (0.74)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Copper	**22.7** (1.85)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Lead	**16.3** (3.71)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Mercury	**0.035** (0.032)		7471B		1	MKS	10/22/19 13:53	0.78	40	CJ92156
Nickel	**29.9** (1.85)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Selenium	ND (3.71)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Silver	ND (0.37)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Thallium	ND (0.37)		6020A		1	NAR	10/22/19 14:53	3.45	100	CJ92155
Vanadium	**9.22** (0.74)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155
Zinc	**131** (1.85)		6010C		1	BJV	10/22/19 6:17	3.45	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 13.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.73)	0.346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (69.3)	65.8	8260B		1	10/22/19 17:38	C9J0403	CJ92241
1-Chlorohexane	ND (0.346)	0.139	8260B		1	10/22/19 17:38	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
2-Butanone	ND (1.73)	1.18	8260B		1	10/22/19 17:38	C9J0403	CJ92241
2-Chlorotoluene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
2-Hexanone	ND (1.73)	0.519	8260B		1	10/22/19 17:38	C9J0403	CJ92241
4-Chlorotoluene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.73)	0.554	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Acetone	ND (1.73)	0.935	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Benzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Bromobenzene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 13.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Bromodichloromethane	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Bromoform	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Bromomethane	ND (0.346)	0.139	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Carbon Disulfide	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Chlorobenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Chloroethane	ND (0.346)	0.139	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Chloroform	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Chloromethane	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Dibromochloromethane	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Dibromomethane	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Diethyl Ether	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Di-isopropyl ether	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Ethylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Isopropylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Methylene Chloride	**J 0.0935** (0.693)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Naphthalene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
n-Butylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
n-Propylbenzene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
sec-Butylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Styrene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
tert-Butylbenzene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Tetrachloroethene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Tetrahydrofuran	ND (1.73)	0.554	8260B		1	10/22/19 17:38	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 13.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.346)	0.104	8260B		1	10/22/19 17:38	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Trichloroethene	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.346)	0.139	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Vinyl Acetate	ND (0.346)	0.173	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Vinyl Chloride	ND (0.346)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Xylene O	ND (0.346)	0.0346	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Xylene P,M	ND (0.693)	0.0693	8260B		1	10/22/19 17:38	C9J0403	CJ92241
Xylenes (Total)	ND (0.693)		8260B		1	10/22/19 17:38		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*83 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*72 %*		*70-130*
Surrogate: Dibromofluoromethane	*82 %*		*70-130*
Surrogate: Toluene-d8	*78 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
4,4´-DDE	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
4,4´-DDT	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Aldrin	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
alpha-BHC	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
alpha-Chlordane	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
beta-BHC	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Chlordane (Total)	ND (0.0367)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
delta-BHC	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Dieldrin	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Endosulfan I	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Endosulfan II	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Endrin	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Endrin Ketone	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
gamma-Chlordane	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Heptachlor	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Methoxychlor	ND (0.0031)		8081B		1	10/25/19 0:43	C9J0478	CJ92110
Toxaphene	ND (0.153)		8081B		1	10/25/19 0:43	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*71 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1221	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1232	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1242	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1248	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1254	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1260	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1262	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803
Aroclor 1268	ND (0.07)		8082A		1	10/21/19 21:07		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*65 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 20
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (47.9)		8100M		1	10/21/19 17:56	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2-Chlorophenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2-Methylphenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2-Nitroaniline	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
2-Nitrophenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.805)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
3+4-Methylphenol	ND (0.805)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
3-Nitroaniline	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4-Chloroaniline	ND (0.805)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4-Nitroaniline	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
4-Nitrophenol	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Acetophenone	ND (0.805)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Aniline	ND (0.805)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Azobenzene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Benzoic Acid	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Butylbenzylphthalate	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Carbazole	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Dibenzofuran	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Diethylphthalate	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Dimethylphthalate	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Hexachlorobenzene	ND (0.201)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Hexachloroethane	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Isophorone	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Nitrobenzene	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Pentachlorophenol	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Phenol	ND (0.402)		8270D		1	10/21/19 23:32	C9J0360	CJ92111
Pyridine	ND (2.01)		8270D		1	10/21/19 23:32	C9J0360	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*73 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*77 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: 2-Fluorophenol	*79 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*83 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 0-6in
Date Sampled: 10/17/19 14:07
Percent Solids: 78
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-07
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Acenaphthene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Acenaphthylene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Anthracene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Benzo(a)anthracene	**0.032** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Benzo(a)pyrene	**0.027** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Benzo(b)fluoranthene	**0.035** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Chrysene	**0.030** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Fluoranthene	**0.058** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Fluorene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Naphthalene	ND (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Phenanthrene	**0.030** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111
Pyrene	**0.052** (0.021)		8270D SIM		1	10/23/19 10:23	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.47)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Arsenic	ND (2.23)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Barium	**28.7** (2.23)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Beryllium	**0.19** (0.10)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Cadmium	ND (0.45)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Chromium	**7.98** (0.89)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Cobalt	**3.78** (0.89)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Copper	**12.2** (2.23)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Lead	**9.91** (4.47)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Mercury	ND (0.025)		7471B		1	MKS	10/22/19 13:59	1.16	40	CJ92156
Nickel	**14.0** (2.23)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Selenium	ND (4.47)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Silver	ND (0.45)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Thallium	ND (4.47)		6010C		1	KJK	10/22/19 6:22	3.22	100	CJ92155
Vanadium	**10.1** (0.89)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155
Zinc	**67.1** (2.23)		6010C		1	BJV	10/22/19 6:22	3.22	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 10.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (2.42)	0.484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (96.7)	91.9	8260B		1	10/22/19 18:05	C9J0403	CJ92241
1-Chlorohexane	ND (0.484)	0.193	8260B		1	10/22/19 18:05	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
2-Butanone	ND (2.42)	1.64	8260B		1	10/22/19 18:05	C9J0403	CJ92241
2-Chlorotoluene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
2-Hexanone	ND (2.42)	0.726	8260B		1	10/22/19 18:05	C9J0403	CJ92241
4-Chlorotoluene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (2.42)	0.774	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Acetone	ND (2.42)	1.31	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Benzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Bromobenzene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 10.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Bromodichloromethane	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Bromoform	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Bromomethane	ND (0.484)	0.193	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Carbon Disulfide	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Chlorobenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Chloroethane	ND (0.484)	0.193	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Chloroform	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Chloromethane	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Dibromochloromethane	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Dibromomethane	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Diethyl Ether	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Di-isopropyl ether	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Ethylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Isopropylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Methylene Chloride	**J 0.198** (0.967)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Naphthalene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
n-Butylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
n-Propylbenzene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
sec-Butylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Styrene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
tert-Butylbenzene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Tetrachloroethene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Tetrahydrofuran	ND (2.42)	0.774	8260B		1	10/22/19 18:05	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 10.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.484)	0.145	8260B		1	10/22/19 18:05	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Trichloroethene	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.484)	0.193	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Vinyl Acetate	ND (0.484)	0.242	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Vinyl Chloride	ND (0.484)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Xylene O	ND (0.484)	0.0484	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Xylene P,M	ND (0.967)	0.0967	8260B		1	10/22/19 18:05	C9J0403	CJ92241
Xylenes (Total)	ND (0.967)		8260B		1	10/22/19 18:05		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*108 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*90 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
4,4´-DDE	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
4,4´-DDT	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Aldrin	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
alpha-BHC	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
alpha-Chlordane	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
beta-BHC	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Chlordane (Total)	ND (0.0443)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
delta-BHC	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Dieldrin	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Endosulfan I	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Endosulfan II	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Endrin	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Endrin Ketone	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0022)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
gamma-Chlordane	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Heptachlor	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Methoxychlor	ND (0.0037)		8081B		1	10/25/19 1:13	C9J0478	CJ92110
Toxaphene	ND (0.184)		8081B		1	10/25/19 1:13	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 20.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1221	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1232	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1242	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1248	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1254	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1260	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1262	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803
Aroclor 1268	ND (0.07)		8082A		1	10/21/19 21:26		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (56.2)		8100M		1	10/21/19 18:29	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*92 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2-Chlorophenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2-Methylphenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2-Nitroaniline	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
2-Nitrophenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.929)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
3+4-Methylphenol	ND (0.929)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
3-Nitroaniline	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4-Chloroaniline	ND (0.929)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4-Nitroaniline	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
4-Nitrophenol	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Acetophenone	ND (0.929)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Aniline	ND (0.929)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Azobenzene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Benzoic Acid	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Butylbenzylphthalate	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Carbazole	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Dibenzofuran	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Diethylphthalate	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Dimethylphthalate	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Hexachlorobenzene	ND (0.233)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Hexachloroethane	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Isophorone	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Nitrobenzene	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Pentachlorophenol	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Phenol	ND (0.464)		8270D		1	10/21/19 23:58	C9J0360	CJ92111
Pyridine	ND (2.33)		8270D		1	10/21/19 23:58	C9J0360	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*77 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*90 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*83 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*77 %*		*30-130*
Surrogate: 2-Fluorophenol	*86 %*		*30-130*
Surrogate: Nitrobenzene-d5	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*83 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*92 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6 6-18in
Date Sampled: 10/17/19 14:07
Percent Solids: 70
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-08
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Acenaphthene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Acenaphthylene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Anthracene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Benzo(a)anthracene	**0.033** (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Benzo(a)pyrene	**0.030** (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Benzo(b)fluoranthene	**0.036** (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Chrysene	**0.030** (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Fluoranthene	**0.048** (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Fluorene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Naphthalene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Phenanthrene	ND (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111
Pyrene	**0.050** (0.024)		8270D SIM		1	10/23/19 11:10	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.50)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Arsenic	**4.11** (1.75)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Barium	**60.9** (1.75)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Beryllium	**0.25** (0.08)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Cadmium	ND (0.35)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Chromium	**7.40** (0.70)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Cobalt	**9.52** (0.70)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Copper	**15.1** (1.75)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Lead	**9.21** (3.50)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Mercury	**0.061** (0.037)		7471B		1	MKS	10/22/19 14:02	0.67	40	CJ92156
Nickel	**19.4** (1.75)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Selenium	ND (3.50)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Silver	ND (0.35)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Thallium	ND (0.35)		6020A		1	NAR	10/22/19 14:57	3.54	100	CJ92155
Vanadium	**8.99** (0.70)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155
Zinc	**114** (1.75)		6010C		1	BJV	10/22/19 6:26	3.54	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 15.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.41)	0.281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (56.2)	53.4	8260B		1	10/22/19 18:31	C9J0403	CJ92241
1-Chlorohexane	ND (0.281)	0.112	8260B		1	10/22/19 18:31	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
2-Butanone	ND (1.41)	0.955	8260B		1	10/22/19 18:31	C9J0403	CJ92241
2-Chlorotoluene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
2-Hexanone	ND (1.41)	0.422	8260B		1	10/22/19 18:31	C9J0403	CJ92241
4-Chlorotoluene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.41)	0.450	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Acetone	ND (1.41)	0.759	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Benzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Bromobenzene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 15.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Bromodichloromethane	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Bromoform	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Bromomethane	ND (0.281)	0.112	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Carbon Disulfide	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Chlorobenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Chloroethane	ND (0.281)	0.112	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Chloroform	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Chloromethane	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Dibromochloromethane	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Dibromomethane	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Diethyl Ether	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Di-isopropyl ether	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Ethylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Isopropylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Methylene Chloride	**J 0.0955** (0.562)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Naphthalene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
n-Butylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
n-Propylbenzene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
sec-Butylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Styrene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
tert-Butylbenzene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Tetrachloroethene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Tetrahydrofuran	ND (1.41)	0.450	8260B		1	10/22/19 18:31	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 15.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.281)	0.0843	8260B		1	10/22/19 18:31	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Trichloroethene	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.281)	0.112	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Vinyl Acetate	ND (0.281)	0.141	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Vinyl Chloride	ND (0.281)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Xylene O	ND (0.281)	0.0281	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Xylene P,M	ND (0.562)	0.0562	8260B		1	10/22/19 18:31	C9J0403	CJ92241
Xylenes (Total)	ND (0.562)		8260B		1	10/22/19 18:31		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*110 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*102 %*		*70-130*
Surrogate: Dibromofluoromethane	*104 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 19
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
4,4´-DDE	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
4,4´-DDT	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Aldrin	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
alpha-BHC	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
alpha-Chlordane [2C]	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
beta-BHC	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Chlordane (Total)	ND (0.0391)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
delta-BHC	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Dieldrin	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Endosulfan I	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Endosulfan II	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Endrin	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Endrin Ketone	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0020)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
gamma-Chlordane	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Heptachlor	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Methoxychlor	ND (0.0033)		8081B		1	10/25/19 4:48	C9J0478	CJ92110
Toxaphene	ND (0.163)		8081B		1	10/25/19 4:48	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1221	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1232	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1242	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1248	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1254	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1260	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1262	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803
Aroclor 1268	ND (0.06)		8082A		1	10/21/19 21:45		CJ91803

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 19.6
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (47.4)		8100M		1	10/21/19 19:01	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*89 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
1,2,4-Trichlorobenzene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
1,2-Dichlorobenzene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
1,3-Dichlorobenzene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
1,4-Dichlorobenzene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,4,5-Trichlorophenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,4,6-Trichlorophenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,4-Dichlorophenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,4-Dimethylphenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,4-Dinitrophenol	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,4-Dinitrotoluene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2,6-Dinitrotoluene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2-Chloronaphthalene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2-Chlorophenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2-Methylphenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2-Nitroaniline	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
2-Nitrophenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
3,3´-Dichlorobenzidine	ND (0.842)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
3+4-Methylphenol	ND (0.842)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
3-Nitroaniline	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4-Bromophenyl-phenylether	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4-Chloro-3-Methylphenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4-Chloroaniline	ND (0.842)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4-Nitroaniline	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
4-Nitrophenol	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Acetophenone	ND (0.842)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Aniline	ND (0.842)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Azobenzene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Benzoic Acid	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
bis(2-Chloroethoxy)methane	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
bis(2-Chloroethyl)ether	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Butylbenzylphthalate	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Carbazole	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Dibenzofuran	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Diethylphthalate	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Dimethylphthalate	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Di-n-butylphthalate	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Di-n-octylphthalate	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Hexachlorobenzene	ND (0.211)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Hexachlorobutadiene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Hexachlorocyclopentadiene	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Hexachloroethane	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Isophorone	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Nitrobenzene	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
N-Nitrosodimethylamine	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
N-nitrosodiphenylamine	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Pentachlorophenol	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Phenol	ND (0.421)		8270D		1	10/22/19 0:25	C9J0360	CJ92111
Pyridine	ND (2.11)		8270D		1	10/22/19 0:25	C9J0360	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*75 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*64 %*		*30-130*
Surrogate: 2-Fluorophenol	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*74 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*83 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 0-6in
Date Sampled: 10/17/19 15:00
Percent Solids: 81
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-09
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Acenaphthene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Acenaphthylene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Anthracene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Benzo(a)anthracene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Benzo(a)pyrene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Benzo(b)fluoranthene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Chrysene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Fluoranthene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Fluorene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Naphthalene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Phenanthrene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111
Pyrene	ND (0.021)		8270D SIM		1	10/23/19 11:57	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.89)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Arsenic	**9.30** (2.44)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Barium	**79.2** (2.44)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Beryllium	**0.68** (0.11)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Cadmium	ND (0.49)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Chromium	**18.6** (0.98)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Cobalt	**14.6** (0.98)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Copper	**28.3** (2.44)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Lead	**16.4** (4.89)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Mercury	ND (0.019)		7471B		1	MKS	10/22/19 14:04	1.18	40	CJ92156
Nickel	**31.2** (2.44)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Selenium	ND (4.89)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Silver	ND (0.49)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Thallium	ND (0.49)		6020A		1	NAR	10/22/19 15:02	2.29	100	CJ92155
Vanadium	**20.8** (0.98)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155
Zinc	**152** (2.44)		6010C		1	BJV	10/22/19 6:30	2.29	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.20)	0.240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (48.1)	45.6	8260B		1	10/22/19 18:57	C9J0403	CJ92241
1-Chlorohexane	ND (0.240)	0.0961	8260B		1	10/22/19 18:57	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
2-Butanone	ND (1.20)	0.817	8260B		1	10/22/19 18:57	C9J0403	CJ92241
2-Chlorotoluene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
2-Hexanone	ND (1.20)	0.360	8260B		1	10/22/19 18:57	C9J0403	CJ92241
4-Chlorotoluene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.20)	0.384	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Acetone	ND (1.20)	0.649	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Benzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Bromobenzene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Bromodichloromethane	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Bromoform	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Bromomethane	ND (0.240)	0.0961	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Carbon Disulfide	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Chlorobenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Chloroethane	ND (0.240)	0.0961	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Chloroform	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Chloromethane	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Dibromochloromethane	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Dibromomethane	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Diethyl Ether	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Di-isopropyl ether	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Ethylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Isopropylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Methylene Chloride	**J 0.0769** (0.481)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Naphthalene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
n-Butylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
n-Propylbenzene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
sec-Butylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Styrene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
tert-Butylbenzene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Tetrachloroethene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Tetrahydrofuran	ND (1.20)	0.384	8260B		1	10/22/19 18:57	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.240)	0.0721	8260B		1	10/22/19 18:57	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Trichloroethene	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.240)	0.0961	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Vinyl Acetate	ND (0.240)	0.120	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Vinyl Chloride	ND (0.240)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Xylene O	ND (0.240)	0.0240	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Xylene P,M	ND (0.481)	0.0481	8260B		1	10/22/19 18:57	C9J0403	CJ92241
Xylenes (Total)	ND (0.481)		8260B		1	10/22/19 18:57		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*126 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*110 %*		*70-130*
Surrogate: Dibromofluoromethane	*128 %*		*70-130*
Surrogate: Toluene-d8	*116 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
4,4´-DDE	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
4,4´-DDT	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Aldrin	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
alpha-BHC	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
alpha-Chlordane [2C]	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
beta-BHC	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Chlordane (Total)	ND (0.0344)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
delta-BHC	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Dieldrin	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Endosulfan I	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Endosulfan II	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Endosulfan Sulfate	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Endrin	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Endrin Aldehyde	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Endrin Ketone	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
gamma-BHC (Lindane)	ND (0.0017)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
gamma-Chlordane	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Heptachlor	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Heptachlor Epoxide	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Hexachlorobenzene	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Methoxychlor	ND (0.0029)		8081B		1	10/25/19 5:19	C9J0478	CJ92110
Toxaphene	ND (0.143)		8081B		1	10/25/19 5:19	C9J0478	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*79 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/18/19 16:35

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1221	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1232	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1242	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1248	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1254	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1260	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1262	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803
Aroclor 1268	ND (0.06)		8082A		1	10/21/19 22:04		CJ91803

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*82 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/18/19 15:26

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (43.7)		8100M		1	10/21/19 19:33	C9J0374	CJ91809

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,4-Dinitrophenol	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2-Chlorophenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2-Methylphenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2-Nitroaniline	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
2-Nitrophenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (0.746)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
3+4-Methylphenol	ND (0.746)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
3-Nitroaniline	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4-Chloroaniline	ND (0.746)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4-Nitroaniline	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
4-Nitrophenol	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Acetophenone	ND (0.746)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Aniline	ND (0.746)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Azobenzene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Benzoic Acid	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Carbazole	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Dibenzofuran	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Diethylphthalate	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Dimethylphthalate	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Hexachlorobenzene	ND (0.187)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Hexachloroethane	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Isophorone	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Nitrobenzene	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Pentachlorophenol	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Phenol	ND (0.373)		8270D		1	10/22/19 15:30	C9J0384	CJ92111
Pyridine	ND (1.87)		8270D		1	10/22/19 15:30	C9J0384	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*71 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*72 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*76 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*74 %*		*30-130*
Surrogate: 2-Fluorophenol	*76 %*		*30-130*
Surrogate: Nitrobenzene-d5	*72 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*72 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*88 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 6-18in
Date Sampled: 10/17/19 15:00
Percent Solids: 89
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-10
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Acenaphthene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Acenaphthylene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Anthracene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Benzo(a)anthracene	**0.020** (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Benzo(a)pyrene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Benzo(b)fluoranthene	**0.025** (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Benzo(g,h,i)perylene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Benzo(k)fluoranthene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Chrysene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Dibenzo(a,h)Anthracene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Fluoranthene	**0.039** (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Fluorene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Naphthalene	ND (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Phenanthrene	**0.023** (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111
Pyrene	**0.035** (0.019)		8270D SIM		1	10/23/19 12:46	C9J0421	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/17/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-11
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.00)	0.200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (40.0)	38.0	8260B		1	10/22/19 12:18	C9J0403	CJ92241
1-Chlorohexane	ND (0.200)	0.0800	8260B		1	10/22/19 12:18	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
2-Butanone	ND (1.00)	0.680	8260B		1	10/22/19 12:18	C9J0403	CJ92241
2-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
2-Hexanone	ND (1.00)	0.300	8260B		1	10/22/19 12:18	C9J0403	CJ92241
4-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.00)	0.320	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Acetone	ND (1.00)	0.540	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Benzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Bromobenzene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/17/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-11
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Bromoform	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Bromomethane	ND (0.200)	0.0800	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Chlorobenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Chloroethane	ND (0.200)	0.0800	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Chloroform	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Chloromethane	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Dibromochloromethane	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Dibromomethane	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Diethyl Ether	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Di-isopropyl ether	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Ethylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Methylene Chloride	**J 0.0680** (0.400)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Naphthalene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
n-Propylbenzene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Styrene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Tetrachloroethene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Tetrahydrofuran	ND (1.00)	0.320	8260B		1	10/22/19 12:18	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/17/19 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0620
ESS Laboratory Sample ID: 19J0620-11
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/22/19 12:18	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Trichloroethene	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.200)	0.0800	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Vinyl Acetate	ND (0.200)	0.100	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Vinyl Chloride	ND (0.200)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Xylene O	ND (0.200)	0.0200	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Xylene P,M	ND (0.400)	0.0400	8260B		1	10/22/19 12:18	C9J0403	CJ92241
Xylenes (Total)	ND (0.400)		8260B		1	10/22/19 12:18		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*109 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*91 %*		*70-130*
Surrogate: Dibromofluoromethane	*107 %*		*70-130*
Surrogate: Toluene-d8	*95 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Total Metals

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ92155 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Cobalt	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
Blank										
Thallium	ND	0.50	mg/kg wet							
LCS										
Antimony	36.5	14.7	mg/kg wet	51.30		71	40-160			
Arsenic	178	7.35	mg/kg wet	202.0		88	80-120			
Barium	309	7.35	mg/kg wet	343.0		90	80-120			
Beryllium	44.7	0.32	mg/kg wet	52.10		86	80-120			
Cadmium	118	1.47	mg/kg wet	149.0		80	80-120			
Chromium	157	2.94	mg/kg wet	182.0		86	80-120			
Cobalt	144	2.94	mg/kg wet	171.0		84	80-120			
Copper	193	7.35	mg/kg wet	225.0		86	80-120			
Lead	291	14.7	mg/kg wet	333.0		87	80-120			
Nickel	145	7.35	mg/kg wet	167.0		87	80-120			
Selenium	151	14.7	mg/kg wet	169.0		90	80-120			
Silver	42.7	1.47	mg/kg wet	48.90		87	80-120			
Thallium	64.6	14.7	mg/kg wet	82.30		78	62-139			
Vanadium	200	2.94	mg/kg wet	227.0		88	80-120			
Zinc	381	7.35	mg/kg wet	459.0		83	80-120			
LCS										
Thallium	76.5	7.35	mg/kg wet	82.30		93	80-120			
LCS Dup										
Antimony	35.2	13.9	mg/kg wet	51.30		69	40-160	4	20	
Arsenic	167	6.94	mg/kg wet	202.0		83	80-120	6	20	
Barium	294	6.94	mg/kg wet	343.0		86	80-120	5	20	
Beryllium	43.0	0.31	mg/kg wet	52.10		82	80-120	4	20	
Cadmium	114	1.39	mg/kg wet	149.0		77	80-120	4	20	B-
Chromium	152	2.78	mg/kg wet	182.0		83	80-120	4	20	
Cobalt	139	2.78	mg/kg wet	171.0		81	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ92155 - 3050B										
Copper	187	6.94	mg/kg wet	225.0		83	80-120	3	20	
Lead	279	13.9	mg/kg wet	333.0		84	80-120	4	20	
Nickel	140	6.94	mg/kg wet	167.0		84	80-120	4	20	
Selenium	142	13.9	mg/kg wet	169.0		84	80-120	6	20	
Silver	41.2	1.39	mg/kg wet	48.90		84	80-120	3	20	
Thallium	61.0	13.9	mg/kg wet	82.30		74	62-139	6	20	
Vanadium	192	2.78	mg/kg wet	227.0		85	80-120	4	20	
Zinc	366	6.94	mg/kg wet	459.0		80	80-120	4	20	
LCS Dup										
Thallium	74.1	6.94	mg/kg wet	82.30		90	80-120	3	30	
Batch CJ92156 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	2.57	0.261	mg/kg wet	3.120		82	80-120			
LCS Dup										
Mercury	3.88	0.319	mg/kg wet	3.120		124	80-120	41	20	D+, B+
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*4.21*		mg/kg wet	*5.000*		*84*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*3.85*		mg/kg wet	*5.000*		*77*	*70-130*			
Surrogate: Dibromofluoromethane	*4.49*		mg/kg wet	*5.000*		*90*	*70-130*			
Surrogate: Toluene-d8	*3.94*		mg/kg wet	*5.000*		*79*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.63	0.200	mg/kg wet	2.000		82	70-130			
1,1,1-Trichloroethane	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,1,2,2-Tetrachloroethane	1.71	0.200	mg/kg wet	2.000		85	70-130			
1,1,2-Trichloroethane	1.88	0.200	mg/kg wet	2.000		94	70-130			
1,1-Dichloroethane	1.93	0.200	mg/kg wet	2.000		97	70-130			
1,1-Dichloroethene	2.21	0.200	mg/kg wet	2.000		111	70-130			
1,1-Dichloropropene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,2,3-Trichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,2,3-Trichloropropane	1.75	0.200	mg/kg wet	2.000		87	70-130			
1,2,4-Trichlorobenzene	1.76	0.200	mg/kg wet	2.000		88	70-130			
1,2,4-Trimethylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,2-Dibromo-3-Chloropropane	1.99	1.00	mg/kg wet	2.000		99	70-130			
1,2-Dibromoethane	1.73	0.200	mg/kg wet	2.000		86	70-130			
1,2-Dichlorobenzene	1.85	0.200	mg/kg wet	2.000		93	70-130			
1,2-Dichloroethane	1.95	0.200	mg/kg wet	2.000		98	70-130			
1,2-Dichloropropane	1.83	0.200	mg/kg wet	2.000		92	70-130			
1,3,5-Trimethylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,3-Dichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,3-Dichloropropane	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,4-Dichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,4-Dioxane - Screen	73.7	40.0	mg/kg wet	40.00		184	44-241			
1-Chlorohexane	1.86	0.200	mg/kg wet	2.000		93	70-130			
2,2-Dichloropropane	2.17	0.200	mg/kg wet	2.000		108	70-130			
2-Butanone	8.66	1.00	mg/kg wet	10.00		87	70-130			
2-Chlorotoluene	1.88	0.200	mg/kg wet	2.000		94	70-130			
2-Hexanone	9.25	1.00	mg/kg wet	10.00		92	70-130			
4-Chlorotoluene	1.82	0.200	mg/kg wet	2.000		91	70-130			
4-Isopropyltoluene	1.92	0.200	mg/kg wet	2.000		96	70-130			
4-Methyl-2-Pentanone	7.94	1.00	mg/kg wet	10.00		79	70-130			
Acetone	9.32	1.00	mg/kg wet	10.00		93	70-130			
Benzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
Bromobenzene	1.85	0.200	mg/kg wet	2.000		92	70-130			
Bromochloromethane	1.86	0.200	mg/kg wet	2.000		93	70-130			
Bromodichloromethane	1.65	0.200	mg/kg wet	2.000		83	70-130			
Bromoform	1.81	0.200	mg/kg wet	2.000		91	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Bromomethane	1.72	0.200	mg/kg wet	2.000		86	70-130			
Carbon Disulfide	1.92	0.200	mg/kg wet	2.000		96	70-130			
Carbon Tetrachloride	2.10	0.200	mg/kg wet	2.000		105	70-130			
Chlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Chloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130			
Chloroform	2.06	0.200	mg/kg wet	2.000		103	70-130			
Chloromethane	1.65	0.200	mg/kg wet	2.000		82	70-130			
cis-1,2-Dichloroethene	2.13	0.200	mg/kg wet	2.000		107	70-130			
cis-1,3-Dichloropropene	1.62	0.200	mg/kg wet	2.000		81	70-130			
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		93	70-130			
Dibromomethane	1.94	0.200	mg/kg wet	2.000		97	70-130			
Dichlorodifluoromethane	1.52	0.200	mg/kg wet	2.000		76	70-130			
Diethyl Ether	1.84	0.200	mg/kg wet	2.000		92	70-130			
Di-isopropyl ether	1.85	0.200	mg/kg wet	2.000		92	70-130			
Ethyl tertiary-butyl ether	1.76	0.200	mg/kg wet	2.000		88	70-130			
Ethylbenzene	1.84	0.200	mg/kg wet	2.000		92	70-130			
Hexachlorobutadiene	1.83	0.200	mg/kg wet	2.000		91	70-130			
Isopropylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Methyl tert-Butyl Ether	2.02	0.200	mg/kg wet	2.000		101	70-130			
Methylene Chloride	1.86	0.400	mg/kg wet	2.000		93	70-130			
Naphthalene	1.59	0.200	mg/kg wet	2.000		80	70-130			
n-Butylbenzene	1.99	0.200	mg/kg wet	2.000		99	70-130			
n-Propylbenzene	1.86	0.200	mg/kg wet	2.000		93	70-130			
sec-Butylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Styrene	1.61	0.200	mg/kg wet	2.000		80	70-130			
tert-Butylbenzene	1.84	0.200	mg/kg wet	2.000		92	70-130			
Tertiary-amyl methyl ether	1.76	0.200	mg/kg wet	2.000		88	70-130			
Tetrachloroethene	1.93	0.200	mg/kg wet	2.000		96	70-130			
Tetrahydrofuran	1.54	1.00	mg/kg wet	2.000		77	70-130			
Toluene	1.95	0.200	mg/kg wet	2.000		97	70-130			
trans-1,2-Dichloroethene	2.17	0.200	mg/kg wet	2.000		108	70-130			
trans-1,3-Dichloropropene	1.77	0.200	mg/kg wet	2.000		88	70-130			
Trichloroethene	2.03	0.200	mg/kg wet	2.000		101	70-130			
Trichlorofluoromethane	2.17	0.200	mg/kg wet	2.000		109	70-130			
Vinyl Acetate	1.64	0.200	mg/kg wet	2.000		82	70-130			
Vinyl Chloride	1.85	0.200	mg/kg wet	2.000		93	70-130			
Xylene O	1.83	0.200	mg/kg wet	2.000		92	70-130			
Xylene P,M	3.83	0.400	mg/kg wet	4.000		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.49*		mg/kg wet	*5.000*		*110*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.11*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*5.47*		mg/kg wet	*5.000*		*109*	*70-130*			
Surrogate: Toluene-d8	*4.98*		mg/kg wet	*5.000*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130	4	25	
1,1,1-Trichloroethane	1.95	0.200	mg/kg wet	2.000		97	70-130	0.1	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
1,1,2,2-Tetrachloroethane	1.84	0.200	mg/kg wet	2.000		92	70-130	8	25	
1,1,2-Trichloroethane	1.95	0.200	mg/kg wet	2.000		98	70-130	4	25	
1,1-Dichloroethane	2.00	0.200	mg/kg wet	2.000		100	70-130	4	25	
1,1-Dichloroethene	2.20	0.200	mg/kg wet	2.000		110	70-130	0.6	25	
1,1-Dichloropropene	2.00	0.200	mg/kg wet	2.000		100	70-130	0.7	25	
1,2,3-Trichlorobenzene	1.76	0.200	mg/kg wet	2.000		88	70-130	3	25	
1,2,3-Trichloropropane	1.81	0.200	mg/kg wet	2.000		90	70-130	3	25	
1,2,4-Trichlorobenzene	1.85	0.200	mg/kg wet	2.000		92	70-130	5	25	
1,2,4-Trimethylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	
1,2-Dibromo-3-Chloropropane	1.95	1.00	mg/kg wet	2.000		98	70-130	2	25	
1,2-Dibromoethane	1.72	0.200	mg/kg wet	2.000		86	70-130	0.5	25	
1,2-Dichlorobenzene	1.84	0.200	mg/kg wet	2.000		92	70-130	0.8	25	
1,2-Dichloroethane	1.95	0.200	mg/kg wet	2.000		98	70-130	0.2	25	
1,2-Dichloropropane	1.88	0.200	mg/kg wet	2.000		94	70-130	2	25	
1,3,5-Trimethylbenzene	1.89	0.200	mg/kg wet	2.000		95	70-130	0.3	25	
1,3-Dichlorobenzene	1.87	0.200	mg/kg wet	2.000		93	70-130	3	25	
1,3-Dichloropropane	1.87	0.200	mg/kg wet	2.000		93	70-130	0.6	25	
1,4-Dichlorobenzene	1.83	0.200	mg/kg wet	2.000		91	70-130	2	25	
1,4-Dioxane - Screen	52.0	40.0	mg/kg wet	40.00		130	44-241	34	200	
1-Chlorohexane	1.90	0.200	mg/kg wet	2.000		95	70-130	2	25	
2,2-Dichloropropane	2.16	0.200	mg/kg wet	2.000		108	70-130	0.4	25	
2-Butanone	8.82	1.00	mg/kg wet	10.00		88	70-130	2	25	
2-Chlorotoluene	1.91	0.200	mg/kg wet	2.000		96	70-130	2	25	
2-Hexanone	9.62	1.00	mg/kg wet	10.00		96	70-130	4	25	
4-Chlorotoluene	1.96	0.200	mg/kg wet	2.000		98	70-130	8	25	
4-Isopropyltoluene	1.94	0.200	mg/kg wet	2.000		97	70-130	0.9	25	
4-Methyl-2-Pentanone	7.95	1.00	mg/kg wet	10.00		80	70-130	0.1	25	
Acetone	8.66	1.00	mg/kg wet	10.00		87	70-130	7	25	
Benzene	2.07	0.200	mg/kg wet	2.000		103	70-130	4	25	
Bromobenzene	1.82	0.200	mg/kg wet	2.000		91	70-130	1	25	
Bromochloromethane	1.99	0.200	mg/kg wet	2.000		99	70-130	7	25	
Bromodichloromethane	1.73	0.200	mg/kg wet	2.000		87	70-130	5	25	
Bromoform	1.88	0.200	mg/kg wet	2.000		94	70-130	4	25	
Bromomethane	1.75	0.200	mg/kg wet	2.000		87	70-130	2	25	
Carbon Disulfide	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Carbon Tetrachloride	2.07	0.200	mg/kg wet	2.000		103	70-130	2	25	
Chlorobenzene	1.87	0.200	mg/kg wet	2.000		94	70-130	2	25	
Chloroethane	1.69	0.200	mg/kg wet	2.000		84	70-130	0.9	25	
Chloroform	2.18	0.200	mg/kg wet	2.000		109	70-130	6	25	
Chloromethane	1.66	0.200	mg/kg wet	2.000		83	70-130	1	25	
cis-1,2-Dichloroethene	2.09	0.200	mg/kg wet	2.000		104	70-130	2	25	
cis-1,3-Dichloropropene	1.71	0.200	mg/kg wet	2.000		85	70-130	5	25	
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		94	70-130	0.4	25	
Dibromomethane	1.99	0.200	mg/kg wet	2.000		100	70-130	3	25	
Dichlorodifluoromethane	1.42	0.200	mg/kg wet	2.000		71	70-130	7	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Diethyl Ether	1.98	0.200	mg/kg wet	2.000		99	70-130	8	25	
Di-isopropyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130	5	25	
Ethyl tertiary-butyl ether	1.80	0.200	mg/kg wet	2.000		90	70-130	3	25	
Ethylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	7	25	
Hexachlorobutadiene	1.74	0.200	mg/kg wet	2.000		87	70-130	5	25	
Isopropylbenzene	1.97	0.200	mg/kg wet	2.000		99	70-130	3	25	
Methyl tert-Butyl Ether	2.09	0.200	mg/kg wet	2.000		104	70-130	3	25	
Methylene Chloride	1.88	0.400	mg/kg wet	2.000		94	70-130	0.9	25	
Naphthalene	1.60	0.200	mg/kg wet	2.000		80	70-130	0.3	25	
n-Butylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	1	25	
n-Propylbenzene	1.93	0.200	mg/kg wet	2.000		96	70-130	4	25	
sec-Butylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	3	25	
Styrene	1.67	0.200	mg/kg wet	2.000		83	70-130	4	25	
tert-Butylbenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	2	25	
Tertiary-amyl methyl ether	1.87	0.200	mg/kg wet	2.000		93	70-130	6	25	
Tetrachloroethene	1.87	0.200	mg/kg wet	2.000		94	70-130	3	25	
Tetrahydrofuran	1.70	1.00	mg/kg wet	2.000		85	70-130	10	25	
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130	3	25	
trans-1,2-Dichloroethene	2.16	0.200	mg/kg wet	2.000		108	70-130	0.3	25	
trans-1,3-Dichloropropene	1.81	0.200	mg/kg wet	2.000		90	70-130	2	25	
Trichloroethene	2.06	0.200	mg/kg wet	2.000		103	70-130	2	25	
Trichlorofluoromethane	2.02	0.200	mg/kg wet	2.000		101	70-130	8	25	
Vinyl Acetate	1.70	0.200	mg/kg wet	2.000		85	70-130	4	25	
Vinyl Chloride	1.82	0.200	mg/kg wet	2.000		91	70-130	2	25	
Xylene O	1.97	0.200	mg/kg wet	2.000		99	70-130	7	25	
Xylene P,M	3.88	0.400	mg/kg wet	4.000		97	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*5.33*		mg/kg wet	*5.000*		*107*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.09*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*5.36*		mg/kg wet	*5.000*		*107*	*70-130*			
Surrogate: Toluene-d8	*4.97*		mg/kg wet	*5.000*		*99*	*70-130*			
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ92110 - 3546										
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0300	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0300	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Toxaphene	ND	0.125	mg/kg wet							
Toxaphene [2C]	ND	0.125	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
LCS										
4,4´-DDD	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
4,4´-DDD [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
4,4´-DDE	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
4,4´-DDE [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
4,4´-DDT	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
4,4´-DDT [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
Aldrin	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Aldrin [2C]	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
alpha-BHC	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
alpha-BHC [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140			
alpha-Chlordane	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
alpha-Chlordane [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
beta-BHC	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
beta-BHC [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
delta-BHC	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
delta-BHC [2C]	0.0098	0.0025	mg/kg wet	0.01250		79	40-140			
Dieldrin	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Dieldrin [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endosulfan I	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endosulfan I [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Endosulfan II	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endosulfan II [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan Sulfate	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Endosulfan Sulfate [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Endrin	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endrin [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Endrin Aldehyde	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Endrin Aldehyde [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endrin Ketone	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Endrin Ketone [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
gamma-BHC (Lindane)	0.0106	0.0015	mg/kg wet	0.01250		85	40-140			
gamma-BHC (Lindane) [2C]	0.0103	0.0015	mg/kg wet	0.01250		83	40-140			
gamma-Chlordane	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
gamma-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		84	40-140			
Heptachlor	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
Heptachlor [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Heptachlor Epoxide	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor Epoxide [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140			
Hexachlorobenzene	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Hexachlorobenzene [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
Methoxychlor	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Methoxychlor [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Surrogate: Decachlorobiphenyl	*0.0108*		mg/kg wet	*0.01250*		*86*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0102*		mg/kg wet	*0.01250*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
LCS Dup										
4,4´-DDD	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	0.3	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
4,4´-DDD [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	0.9	30	
4,4´-DDE	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	0.7	30	
4,4´-DDE [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	0.6	30	
4,4´-DDT	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	0.5	30	
4,4´-DDT [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	1	30	
Aldrin	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	3	30	
Aldrin [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	3	30	
alpha-BHC	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	4	30	
alpha-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	4	30	
alpha-Chlordane	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
alpha-Chlordane [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	2	30	
beta-BHC	0.0109	0.0025	mg/kg wet	0.01250		88	40-140	1	30	
beta-BHC [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
delta-BHC	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.5	30	
delta-BHC [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	0.4	30	
Dieldrin	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	2	30	
Dieldrin [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	1	30	
Endosulfan I	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	3	30	
Endosulfan I [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	2	30	
Endosulfan II	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	1	30	
Endosulfan II [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.4	30	
Endosulfan Sulfate	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	0.7	30	
Endosulfan Sulfate [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	0.5	30	
Endrin	0.0111	0.0025	mg/kg wet	0.01250		88	40-140	7	30	
Endrin [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140	6	30	
Endrin Aldehyde	0.0100	0.0025	mg/kg wet	0.01250		80	40-140	4	30	
Endrin Aldehyde [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	5	30	
Endrin Ketone	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	1	30	
Endrin Ketone [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140	5	30	
gamma-BHC (Lindane)	0.0109	0.0015	mg/kg wet	0.01250		88	40-140	3	30	
gamma-BHC (Lindane) [2C]	0.0106	0.0015	mg/kg wet	0.01250		85	40-140	3	30	
gamma-Chlordane	0.0109	0.0025	mg/kg wet	0.01250		88	40-140	2	30	
gamma-Chlordane [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	2	30	
Heptachlor	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
Heptachlor [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	3	30	
Heptachlor Epoxide	0.0118	0.0025	mg/kg wet	0.01250		95	40-140	2	30	
Heptachlor Epoxide [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	2	30	
Hexachlorobenzene	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	4	30	
Hexachlorobenzene [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	4	30	
Methoxychlor	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	2	30	
Methoxychlor [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0109*		mg/kg wet	*0.01250*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0112*		mg/kg wet	*0.01250*		*90*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ91803 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0198*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0164*		mg/kg wet	*0.02500*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0177*		mg/kg wet	*0.02500*		*71*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		97	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		95	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		98	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		99	40-140			
Surrogate: Decachlorobiphenyl	*0.0207*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0209*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0180*		mg/kg wet	*0.02500*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0179*		mg/kg wet	*0.02500*		*72*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		90	40-140	7	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		88	40-140	8	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		97	40-140	1	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		98	40-140	1	30	
Surrogate: Decachlorobiphenyl	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0207*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0156*		mg/kg wet	*0.02500*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0156*		mg/kg wet	*0.02500*		*62*	*30-150*			
8100M Total Petroleum Hydrocarbons										

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Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ91809 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
Surrogate: O-Terphenyl	*4.36*		mg/kg wet	*5.000*		*87*	*40-140*			
LCS										
Decane (C10)	1.8	0.2	mg/kg wet	2.500		71	40-140			
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		76	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500		80	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		93	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		68	30-140			
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Total Petroleum Hydrocarbons	28.9	37.5	mg/kg wet	35.00		83	40-140			
Triacontane (C30)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Surrogate: O-Terphenyl	*4.53*		mg/kg wet	*5.000*		*91*	*40-140*			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		75	40-140	6	25	
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		86	40-140	0.7	25	
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		78	40-140	3	25	
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		86	40-140	0.8	25	
Hexadecane (C16)	2.1	0.2	mg/kg wet	2.500		83	40-140	4	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		95	40-140	2	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140	1	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140	0.6	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		84	40-140	1	25	

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Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ91809 - 3546										
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		86	40-140	1	25	
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		83	40-140	5	25	
Total Petroleum Hydrocarbons	29.4	37.5	mg/kg wet	35.00		84	40-140	2	25	
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		87	40-140	0.9	25	
Surrogate: O-Terphenyl	*4.50*		mg/kg wet	*5.000*		*90*	*40-140*			
8270D Semi-Volatile Organic Compounds										
Batch CJ91807 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91807 - 3546										
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*1.88*		mg/kg wet	*3.333*		*56*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.01*		mg/kg wet	*5.000*		*60*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*2.92*		mg/kg wet	*5.000*		*58*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.06*		mg/kg wet	*3.333*		*62*	*30-130*			
Surrogate: 2-Fluorophenol	*3.04*		mg/kg wet	*5.000*		*61*	*30-130*			
Surrogate: Nitrobenzene-d5	*1.87*		mg/kg wet	*3.333*		*56*	*30-130*			
Surrogate: Phenol-d6	*2.81*		mg/kg wet	*5.000*		*56*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.04*		mg/kg wet	*3.333*		*91*	*30-130*			
LCS										
1,1-Biphenyl	2.19	0.333	mg/kg wet	3.333		66	40-140			
1,2,4-Trichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140			
1,2-Dichlorobenzene	1.92	0.333	mg/kg wet	3.333		58	40-140			
1,3-Dichlorobenzene	1.89	0.333	mg/kg wet	3.333		57	40-140			
1,4-Dichlorobenzene	1.89	0.333	mg/kg wet	3.333		57	40-140			
2,3,4,6-Tetrachlorophenol	2.79	1.67	mg/kg wet	3.333		84	30-130			
2,4,5-Trichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130			
2,4,6-Trichlorophenol	2.63	0.333	mg/kg wet	3.333		79	30-130			
2,4-Dichlorophenol	2.44	0.333	mg/kg wet	3.333		73	30-130			
2,4-Dimethylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	2.82	0.333	mg/kg wet	3.333		85	40-140			
2,6-Dinitrotoluene	2.48	0.333	mg/kg wet	3.333		75	40-140			
2-Chloronaphthalene	2.18	0.333	mg/kg wet	3.333		65	40-140			
2-Chlorophenol	2.02	0.333	mg/kg wet	3.333		61	30-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91807 - 3546										
2-Methylphenol	2.08	0.333	mg/kg wet	3.333		62	30-130			
2-Nitroaniline	2.05	0.333	mg/kg wet	3.333		61	40-140			
2-Nitrophenol	2.11	0.333	mg/kg wet	3.333		63	30-130			
3,3´-Dichlorobenzidine	2.41	0.667	mg/kg wet	3.333		72	40-140			
3+4-Methylphenol	3.93	0.667	mg/kg wet	6.667		59	30-130			
3-Nitroaniline	2.31	0.333	mg/kg wet	3.333		69	40-140			
4,6-Dinitro-2-Methylphenol	2.77	1.67	mg/kg wet	3.333		83	30-130			
4-Bromophenyl-phenylether	2.71	0.333	mg/kg wet	3.333		81	40-140			
4-Chloro-3-Methylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
4-Chloroaniline	1.71	0.667	mg/kg wet	3.333		51	40-140			
4-Chloro-phenyl-phenyl ether	2.64	0.333	mg/kg wet	3.333		79	40-140			
4-Nitroaniline	2.33	0.333	mg/kg wet	3.333		70	40-140			
4-Nitrophenol	2.48	1.67	mg/kg wet	3.333		74	30-130			
Acetophenone	1.73	0.667	mg/kg wet	3.333		52	40-140			
Aniline	1.50	0.667	mg/kg wet	3.333		45	40-140			
Azobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140			
Benzoic Acid	1.97	1.67	mg/kg wet	3.333		59	40-140			
Benzyl Alcohol	1.64	0.333	mg/kg wet	3.333		49	40-140			
bis(2-Chloroethoxy)methane	1.98	0.333	mg/kg wet	3.333		60	40-140			
bis(2-Chloroethyl)ether	1.88	0.333	mg/kg wet	3.333		56	40-140			
bis(2-chloroisopropyl)Ether	1.82	0.333	mg/kg wet	3.333		55	40-140			
bis(2-Ethylhexyl)phthalate	2.64	0.333	mg/kg wet	3.333		79	40-140			
Butylbenzylphthalate	2.46	0.333	mg/kg wet	3.333		74	40-140			
Carbazole	2.65	0.333	mg/kg wet	3.333		80	40-140			
Dibenzofuran	2.37	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	2.71	0.333	mg/kg wet	3.333		81	40-140			
Dimethylphthalate	2.61	0.333	mg/kg wet	3.333		78	40-140			
Di-n-butylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140			
Di-n-octylphthalate	2.35	0.333	mg/kg wet	3.333		71	40-140			
Hexachlorobenzene	2.84	0.167	mg/kg wet	3.333		85	40-140			
Hexachlorobutadiene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Hexachlorocyclopentadiene	2.03	1.67	mg/kg wet	3.333		61	40-140			
Hexachloroethane	1.85	0.333	mg/kg wet	3.333		56	40-140			
Isophorone	1.88	0.333	mg/kg wet	3.333		56	40-140			
Nitrobenzene	1.93	0.333	mg/kg wet	3.333		58	40-140			
N-Nitrosodimethylamine	1.54	0.333	mg/kg wet	3.333		46	40-140			
N-Nitroso-Di-n-Propylamine	1.91	0.333	mg/kg wet	3.333		57	40-140			
N-nitrosodiphenylamine	2.58	0.333	mg/kg wet	3.333		77	40-140			
Pentachlorophenol	3.07	1.67	mg/kg wet	3.333		92	30-130			
Phenol	1.95	0.333	mg/kg wet	3.333		59	30-130			
Pyridine	1.55	1.67	mg/kg wet	3.333		46	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*1.97*		mg/kg wet	*3.333*		*59*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.40*		mg/kg wet	*5.000*		*88*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.21*		mg/kg wet	*5.000*		*64*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.38*		mg/kg wet	*3.333*		*71*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91807 - 3546										
Surrogate: 2-Fluorophenol	*3.26*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.07*		mg/kg wet	*3.333*		*62*	*30-130*			
Surrogate: Phenol-d6	*3.14*		mg/kg wet	*5.000*		*63*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.87*		mg/kg wet	*3.333*		*86*	*30-130*			
LCS Dup										
1,1-Biphenyl	2.12	0.333	mg/kg wet	3.333		64	40-140	3	30	
1,2,4-Trichlorobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	3	30	
1,2-Dichlorobenzene	1.88	0.333	mg/kg wet	3.333		56	40-140	2	30	
1,3-Dichlorobenzene	1.85	0.333	mg/kg wet	3.333		55	40-140	2	30	
1,4-Dichlorobenzene	1.87	0.333	mg/kg wet	3.333		56	40-140	1	30	
2,3,4,6-Tetrachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	2	30	
2,4,5-Trichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	0.1	30	
2,4,6-Trichlorophenol	2.70	0.333	mg/kg wet	3.333		81	30-130	2	30	
2,4-Dichlorophenol	2.33	0.333	mg/kg wet	3.333		70	30-130	5	30	
2,4-Dimethylphenol	2.14	0.333	mg/kg wet	3.333		64	30-130	4	30	
2,4-Dinitrophenol	2.87	1.67	mg/kg wet	3.333		86	30-130	16	30	
2,4-Dinitrotoluene	2.84	0.333	mg/kg wet	3.333		85	40-140	0.5	30	
2,6-Dinitrotoluene	2.55	0.333	mg/kg wet	3.333		76	40-140	3	30	
2-Chloronaphthalene	2.10	0.333	mg/kg wet	3.333		63	40-140	3	30	
2-Chlorophenol	1.94	0.333	mg/kg wet	3.333		58	30-130	4	30	
2-Methylphenol	1.97	0.333	mg/kg wet	3.333		59	30-130	6	30	
2-Nitroaniline	2.06	0.333	mg/kg wet	3.333		62	40-140	0.4	30	
2-Nitrophenol	2.05	0.333	mg/kg wet	3.333		62	30-130	3	30	
3,3´-Dichlorobenzidine	2.63	0.667	mg/kg wet	3.333		79	40-140	9	30	
3+4-Methylphenol	3.68	0.667	mg/kg wet	6.667		55	30-130	6	30	
3-Nitroaniline	2.48	0.333	mg/kg wet	3.333		74	40-140	7	30	
4,6-Dinitro-2-Methylphenol	3.03	1.67	mg/kg wet	3.333		91	30-130	9	30	
4-Bromophenyl-phenylether	2.84	0.333	mg/kg wet	3.333		85	40-140	5	30	
4-Chloro-3-Methylphenol	2.34	0.333	mg/kg wet	3.333		70	30-130	2	30	
4-Chloroaniline	1.91	0.667	mg/kg wet	3.333		57	40-140	11	30	
4-Chloro-phenyl-phenyl ether	2.60	0.333	mg/kg wet	3.333		78	40-140	1	30	
4-Nitroaniline	2.41	0.333	mg/kg wet	3.333		72	40-140	3	30	
4-Nitrophenol	2.40	1.67	mg/kg wet	3.333		72	30-130	3	30	
Acetophenone	1.64	0.667	mg/kg wet	3.333		49	40-140	5	30	
Aniline	1.51	0.667	mg/kg wet	3.333		45	40-140	0.6	30	
Azobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140	16	30	
Benzoic Acid	2.21	1.67	mg/kg wet	3.333		66	40-140	11	30	
Benzyl Alcohol	1.87	0.333	mg/kg wet	3.333		56	40-140	13	30	
bis(2-Chloroethoxy)methane	1.92	0.333	mg/kg wet	3.333		58	40-140	3	30	
bis(2-Chloroethyl)ether	1.84	0.333	mg/kg wet	3.333		55	40-140	2	30	
bis(2-chloroisopropyl)Ether	1.78	0.333	mg/kg wet	3.333		53	40-140	2	30	
bis(2-Ethylhexyl)phthalate	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Butylbenzylphthalate	2.63	0.333	mg/kg wet	3.333		79	40-140	7	30	
Carbazole	2.66	0.333	mg/kg wet	3.333		80	40-140	0.1	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91807 - 3546										
Dibenzofuran	2.33	0.333	mg/kg wet	3.333		70	40-140	2	30	
Diethylphthalate	2.73	0.333	mg/kg wet	3.333		82	40-140	1	30	
Dimethylphthalate	2.62	0.333	mg/kg wet	3.333		79	40-140	0.4	30	
Di-n-butylphthalate	2.69	0.333	mg/kg wet	3.333		81	40-140	0.2	30	
Di-n-octylphthalate	2.74	0.333	mg/kg wet	3.333		82	40-140	15	30	
Hexachlorobenzene	2.92	0.167	mg/kg wet	3.333		88	40-140	3	30	
Hexachlorobutadiene	2.20	0.333	mg/kg wet	3.333		66	40-140	0.4	30	
Hexachlorocyclopentadiene	2.04	1.67	mg/kg wet	3.333		61	40-140	0.6	30	
Hexachloroethane	1.83	0.333	mg/kg wet	3.333		55	40-140	1	30	
Isophorone	1.80	0.333	mg/kg wet	3.333		54	40-140	4	30	
Nitrobenzene	1.87	0.333	mg/kg wet	3.333		56	40-140	3	30	
N-Nitrosodimethylamine	1.51	0.333	mg/kg wet	3.333		45	40-140	2	30	
N-Nitroso-Di-n-Propylamine	1.80	0.333	mg/kg wet	3.333		54	40-140	6	30	
N-nitrosodiphenylamine	2.68	0.333	mg/kg wet	3.333		80	40-140	4	30	
Pentachlorophenol	3.23	1.67	mg/kg wet	3.333		97	30-130	5	30	
Phenol	1.85	0.333	mg/kg wet	3.333		56	30-130	5	30	
Pyridine	1.49	1.67	mg/kg wet	3.333		45	40-140	4	30	
Surrogate: 1,2-Dichlorobenzene-d4	*1.88*		mg/kg wet	*3.333*		*56*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*4.39*		mg/kg wet	*5.000*		*88*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.02*		mg/kg wet	*5.000*		*60*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.24*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: 2-Fluorophenol	*3.11*		mg/kg wet	*5.000*		*62*	*30-130*			
Surrogate: Nitrobenzene-d5	*1.98*		mg/kg wet	*3.333*		*60*	*30-130*			
Surrogate: Phenol-d6	*2.91*		mg/kg wet	*5.000*		*58*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.08*		mg/kg wet	*3.333*		*92*	*30-130*			
Batch CJ92111 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.46*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.96*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.86*		mg/kg wet	*5.000*		*77*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.38*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: 2-Fluorophenol	*4.25*		mg/kg wet	*5.000*		*85*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.41*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: Phenol-d6	*3.93*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.81*		mg/kg wet	*3.333*		*84*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
LCS										
1,1-Biphenyl	2.02	0.333	mg/kg wet	3.333		61	40-140			
1,2,4-Trichlorobenzene	2.00	0.333	mg/kg wet	3.333		60	40-140			
1,2-Dichlorobenzene	1.92	0.333	mg/kg wet	3.333		58	40-140			
1,3-Dichlorobenzene	1.93	0.333	mg/kg wet	3.333		58	40-140			
1,4-Dichlorobenzene	1.85	0.333	mg/kg wet	3.333		55	40-140			
2,3,4,6-Tetrachlorophenol	1.92	1.67	mg/kg wet	3.333		58	30-130			
2,4,5-Trichlorophenol	2.25	0.333	mg/kg wet	3.333		67	30-130			
2,4,6-Trichlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dichlorophenol	2.01	0.333	mg/kg wet	3.333		60	30-130			
2,4-Dimethylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130			
2,4-Dinitrophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
2,4-Dinitrotoluene	2.07	0.333	mg/kg wet	3.333		62	40-140			
2,6-Dinitrotoluene	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Chloronaphthalene	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Chlorophenol	2.02	0.333	mg/kg wet	3.333		61	30-130			
2-Methylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130			
2-Nitroaniline	1.79	0.333	mg/kg wet	3.333		54	40-140			
2-Nitrophenol	2.03	0.333	mg/kg wet	3.333		61	30-130			
3,3´-Dichlorobenzidine	1.88	0.667	mg/kg wet	3.333		56	40-140			
3+4-Methylphenol	4.27	0.667	mg/kg wet	6.667		64	30-130			
3-Nitroaniline	1.90	0.333	mg/kg wet	3.333		57	40-140			
4,6-Dinitro-2-Methylphenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
4-Bromophenyl-phenylether	1.93	0.333	mg/kg wet	3.333		58	40-140			
4-Chloro-3-Methylphenol	1.96	0.333	mg/kg wet	3.333		59	30-130			
4-Chloroaniline	1.61	0.667	mg/kg wet	3.333		48	40-140			
4-Chloro-phenyl-phenyl ether	2.03	0.333	mg/kg wet	3.333		61	40-140			
4-Nitroaniline	1.79	0.333	mg/kg wet	3.333		54	40-140			
4-Nitrophenol	1.91	1.67	mg/kg wet	3.333		57	30-130			
Acetophenone	1.99	0.667	mg/kg wet	3.333		60	40-140			
Aniline	1.62	0.667	mg/kg wet	3.333		49	40-140			
Azobenzene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Benzoic Acid	2.09	1.67	mg/kg wet	3.333		63	40-140			
Benzyl Alcohol	1.86	0.333	mg/kg wet	3.333		56	40-140			
bis(2-Chloroethoxy)methane	2.02	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Chloroethyl)ether	1.96	0.333	mg/kg wet	3.333		59	40-140			
bis(2-chloroisopropyl)Ether	1.88	0.333	mg/kg wet	3.333		57	40-140			
bis(2-Ethylhexyl)phthalate	2.08	0.333	mg/kg wet	3.333		62	40-140			
Butylbenzylphthalate	2.14	0.333	mg/kg wet	3.333		64	40-140			
Carbazole	1.98	0.333	mg/kg wet	3.333		59	40-140			
Dibenzofuran	2.01	0.333	mg/kg wet	3.333		60	40-140			
Diethylphthalate	2.04	0.333	mg/kg wet	3.333		61	40-140			
Dimethylphthalate	2.13	0.333	mg/kg wet	3.333		64	40-140			
Di-n-butylphthalate	1.93	0.333	mg/kg wet	3.333		58	40-140			
Di-n-octylphthalate	2.03	0.333	mg/kg wet	3.333		61	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
Hexachlorobenzene	1.93	0.167	mg/kg wet	3.333		58	40-140			
Hexachlorobutadiene	2.01	0.333	mg/kg wet	3.333		60	40-140			
Hexachlorocyclopentadiene	1.72	1.67	mg/kg wet	3.333		52	40-140			
Hexachloroethane	1.93	0.333	mg/kg wet	3.333		58	40-140			
Isophorone	1.84	0.333	mg/kg wet	3.333		55	40-140			
Nitrobenzene	2.00	0.333	mg/kg wet	3.333		60	40-140			
N-Nitrosodimethylamine	1.56	0.333	mg/kg wet	3.333		47	40-140			
N-Nitroso-Di-n-Propylamine	1.94	0.333	mg/kg wet	3.333		58	40-140			
N-nitrosodiphenylamine	2.02	0.333	mg/kg wet	3.333		61	40-140			
Pentachlorophenol	2.06	1.67	mg/kg wet	3.333		62	30-130			
Phenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
Pyridine	1.61	1.67	mg/kg wet	3.333		48	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.03*		mg/kg wet	*3.333*		*61*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.23*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.36*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: 2-Fluorophenol	*3.46*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.44*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.37*		mg/kg wet	*3.333*		*71*	*30-130*			
LCS Dup										
1,1-Biphenyl	2.29	0.333	mg/kg wet	3.333		69	40-140	12	30	
1,2,4-Trichlorobenzene	2.18	0.333	mg/kg wet	3.333		66	40-140	9	30	
1,2-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	10	30	
1,3-Dichlorobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	10	30	
1,4-Dichlorobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	10	30	
2,3,4,6-Tetrachlorophenol	2.14	1.67	mg/kg wet	3.333		64	30-130	11	30	
2,4,5-Trichlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130	12	30	
2,4,6-Trichlorophenol	2.51	0.333	mg/kg wet	3.333		75	30-130	12	30	
2,4-Dichlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130	10	30	
2,4-Dimethylphenol	2.23	0.333	mg/kg wet	3.333		67	30-130	8	30	
2,4-Dinitrophenol	2.24	1.67	mg/kg wet	3.333		67	30-130	7	30	
2,4-Dinitrotoluene	2.36	0.333	mg/kg wet	3.333		71	40-140	13	30	
2,6-Dinitrotoluene	2.20	0.333	mg/kg wet	3.333		66	40-140	10	30	
2-Chloronaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	14	30	
2-Chlorophenol	2.27	0.333	mg/kg wet	3.333		68	30-130	12	30	
2-Methylphenol	2.25	0.333	mg/kg wet	3.333		67	30-130	9	30	
2-Nitroaniline	2.05	0.333	mg/kg wet	3.333		61	40-140	14	30	
2-Nitrophenol	2.21	0.333	mg/kg wet	3.333		66	30-130	9	30	
3,3´-Dichlorobenzidine	2.04	0.667	mg/kg wet	3.333		61	40-140	8	30	
3+4-Methylphenol	4.72	0.667	mg/kg wet	6.667		71	30-130	10	30	
3-Nitroaniline	2.07	0.333	mg/kg wet	3.333		62	40-140	8	30	
4,6-Dinitro-2-Methylphenol	2.50	1.67	mg/kg wet	3.333		75	30-130	10	30	
4-Bromophenyl-phenylether	2.12	0.333	mg/kg wet	3.333		64	40-140	9	30	
4-Chloro-3-Methylphenol	2.17	0.333	mg/kg wet	3.333		65	30-130	10	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
4-Chloroaniline	1.75	0.667	mg/kg wet	3.333		53	40-140	8	30	
4-Chloro-phenyl-phenyl ether	2.28	0.333	mg/kg wet	3.333		69	40-140	12	30	
4-Nitroaniline	1.97	0.333	mg/kg wet	3.333		59	40-140	10	30	
4-Nitrophenol	2.12	1.67	mg/kg wet	3.333		63	30-130	10	30	
Acetophenone	2.17	0.667	mg/kg wet	3.333		65	40-140	9	30	
Aniline	1.80	0.667	mg/kg wet	3.333		54	40-140	10	30	
Azobenzene	2.11	0.333	mg/kg wet	3.333		63	40-140	7	30	
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140	11	30	
Benzyl Alcohol	1.92	0.333	mg/kg wet	3.333		58	40-140	3	30	
bis(2-Chloroethoxy)methane	2.22	0.333	mg/kg wet	3.333		66	40-140	9	30	
bis(2-Chloroethyl)ether	2.16	0.333	mg/kg wet	3.333		65	40-140	10	30	
bis(2-chloroisopropyl)Ether	2.12	0.333	mg/kg wet	3.333		63	40-140	12	30	
bis(2-Ethylhexyl)phthalate	2.37	0.333	mg/kg wet	3.333		71	40-140	13	30	
Butylbenzylphthalate	2.30	0.333	mg/kg wet	3.333		69	40-140	8	30	
Carbazole	2.18	0.333	mg/kg wet	3.333		65	40-140	10	30	
Dibenzofuran	2.31	0.333	mg/kg wet	3.333		69	40-140	14	30	
Diethylphthalate	2.33	0.333	mg/kg wet	3.333		70	40-140	13	30	
Dimethylphthalate	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
Di-n-butylphthalate	2.20	0.333	mg/kg wet	3.333		66	40-140	13	30	
Di-n-octylphthalate	2.40	0.333	mg/kg wet	3.333		72	40-140	17	30	
Hexachlorobenzene	2.28	0.167	mg/kg wet	3.333		68	40-140	17	30	
Hexachlorobutadiene	2.21	0.333	mg/kg wet	3.333		66	40-140	10	30	
Hexachlorocyclopentadiene	2.03	1.67	mg/kg wet	3.333		61	40-140	16	30	
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140	9	30	
Isophorone	1.96	0.333	mg/kg wet	3.333		59	40-140	6	30	
Nitrobenzene	2.06	0.333	mg/kg wet	3.333		62	40-140	3	30	
N-Nitrosodimethylamine	1.83	0.333	mg/kg wet	3.333		55	40-140	16	30	
N-Nitroso-Di-n-Propylamine	2.16	0.333	mg/kg wet	3.333		65	40-140	11	30	
N-nitrosodiphenylamine	2.18	0.333	mg/kg wet	3.333		65	40-140	7	30	
Pentachlorophenol	2.33	1.67	mg/kg wet	3.333		70	30-130	12	30	
Phenol	2.53	0.333	mg/kg wet	3.333		76	30-130	10	30	
Pyridine	1.86	1.67	mg/kg wet	3.333		56	40-140	15	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.45*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.53*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorophenol	*3.69*		mg/kg wet	*5.000*		*74*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.15*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.60*		mg/kg wet	*5.000*		*72*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.52*		mg/kg wet	*3.333*		*75*	*30-130*			
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ91807 - 3546										
Blank										
2-Methylnaphthalene	ND	0.017	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ91807 - 3546										
Acenaphthene	ND	0.017	mg/kg wet							
Acenaphthylene	ND	0.017	mg/kg wet							
Anthracene	ND	0.017	mg/kg wet							
Benzo(a)anthracene	ND	0.017	mg/kg wet							
Benzo(a)pyrene	ND	0.017	mg/kg wet							
Benzo(b)fluoranthene	ND	0.017	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.017	mg/kg wet							
Benzo(k)fluoranthene	ND	0.017	mg/kg wet							
Chrysene	ND	0.017	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.017	mg/kg wet							
Fluoranthene	ND	0.017	mg/kg wet							
Fluorene	ND	0.017	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.017	mg/kg wet							
Naphthalene	ND	0.017	mg/kg wet							
Phenanthrene	ND	0.017	mg/kg wet							
Pyrene	ND	0.017	mg/kg wet							
LCS										
2-Methylnaphthalene	2.26	0.170	mg/kg wet	3.333		68	40-140			
Acenaphthene	2.65	0.170	mg/kg wet	3.333		80	40-140			
Acenaphthylene	2.65	0.170	mg/kg wet	3.333		79	40-140			
Anthracene	2.97	0.170	mg/kg wet	3.333		89	40-140			
Benzo(a)anthracene	2.91	0.170	mg/kg wet	3.333		87	40-140			
Benzo(a)pyrene	2.84	0.170	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	3.03	0.170	mg/kg wet	3.333		91	40-140			
Benzo(g,h,i)perylene	2.76	0.170	mg/kg wet	3.333		83	40-140			
Benzo(k)fluoranthene	2.81	0.170	mg/kg wet	3.333		84	40-140			
Chrysene	3.04	0.170	mg/kg wet	3.333		91	40-140			
Dibenzo(a,h)Anthracene	2.86	0.170	mg/kg wet	3.333		86	40-140			
Fluoranthene	3.00	0.170	mg/kg wet	3.333		90	40-140			
Fluorene	2.84	0.170	mg/kg wet	3.333		85	40-140			
Indeno(1,2,3-cd)Pyrene	2.87	0.170	mg/kg wet	3.333		86	40-140			
Naphthalene	2.12	0.170	mg/kg wet	3.333		63	40-140			
Phenanthrene	2.82	0.170	mg/kg wet	3.333		85	40-140			
Pyrene	3.08	0.170	mg/kg wet	3.333		93	40-140			
LCS Dup										
2-Methylnaphthalene	2.07	0.170	mg/kg wet	3.333		62	40-140	9	30	
Acenaphthene	2.48	0.170	mg/kg wet	3.333		74	40-140	7	30	
Acenaphthylene	2.46	0.170	mg/kg wet	3.333		74	40-140	7	30	
Anthracene	2.86	0.170	mg/kg wet	3.333		86	40-140	4	30	
Benzo(a)anthracene	2.77	0.170	mg/kg wet	3.333		83	40-140	5	30	
Benzo(a)pyrene	2.71	0.170	mg/kg wet	3.333		81	40-140	4	30	
Benzo(b)fluoranthene	2.93	0.170	mg/kg wet	3.333		88	40-140	4	30	
Benzo(g,h,i)perylene	2.68	0.170	mg/kg wet	3.333		81	40-140	3	30	
Benzo(k)fluoranthene	2.68	0.170	mg/kg wet	3.333		80	40-140	5	30	
Chrysene	2.92	0.170	mg/kg wet	3.333		88	40-140	4	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ91807 - 3546										
Dibenzo(a,h)Anthracene	2.75	0.170	mg/kg wet	3.333		82	40-140	4	30	
Fluoranthene	2.87	0.170	mg/kg wet	3.333		86	40-140	4	30	
Fluorene	2.69	0.170	mg/kg wet	3.333		81	40-140	6	30	
Indeno(1,2,3-cd)Pyrene	2.75	0.170	mg/kg wet	3.333		83	40-140	4	30	
Naphthalene	1.97	0.170	mg/kg wet	3.333		59	40-140	7	30	
Phenanthrene	2.70	0.170	mg/kg wet	3.333		81	40-140	4	30	
Pyrene	2.91	0.170	mg/kg wet	3.333		87	40-140	6	30	
Batch CJ92111 - 3546										
Blank										
2-Methylnaphthalene	ND	0.017	mg/kg wet							
Acenaphthene	ND	0.017	mg/kg wet							
Acenaphthylene	ND	0.017	mg/kg wet							
Anthracene	ND	0.017	mg/kg wet							
Benzo(a)anthracene	ND	0.017	mg/kg wet							
Benzo(a)pyrene	ND	0.017	mg/kg wet							
Benzo(b)fluoranthene	ND	0.017	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.017	mg/kg wet							
Benzo(k)fluoranthene	ND	0.017	mg/kg wet							
Chrysene	ND	0.017	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.017	mg/kg wet							
Fluoranthene	ND	0.017	mg/kg wet							
Fluorene	ND	0.017	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.017	mg/kg wet							
Naphthalene	ND	0.017	mg/kg wet							
Phenanthrene	ND	0.017	mg/kg wet							
Pyrene	ND	0.017	mg/kg wet							
LCS										
2-Methylnaphthalene	1.85	0.085	mg/kg wet	3.333		56	40-140			
Acenaphthene	1.98	0.085	mg/kg wet	3.333		59	40-140			
Acenaphthylene	1.97	0.085	mg/kg wet	3.333		59	40-140			
Anthracene	1.97	0.085	mg/kg wet	3.333		59	40-140			
Benzo(a)anthracene	1.91	0.085	mg/kg wet	3.333		57	40-140			
Benzo(a)pyrene	1.84	0.085	mg/kg wet	3.333		55	40-140			
Benzo(b)fluoranthene	1.91	0.085	mg/kg wet	3.333		57	40-140			
Benzo(g,h,i)perylene	1.76	0.085	mg/kg wet	3.333		53	40-140			
Benzo(k)fluoranthene	1.88	0.085	mg/kg wet	3.333		56	40-140			
Chrysene	1.97	0.085	mg/kg wet	3.333		59	40-140			
Dibenzo(a,h)Anthracene	1.83	0.085	mg/kg wet	3.333		55	40-140			
Fluoranthene	1.94	0.085	mg/kg wet	3.333		58	40-140			
Fluorene	1.96	0.085	mg/kg wet	3.333		59	40-140			
Indeno(1,2,3-cd)Pyrene	1.94	0.085	mg/kg wet	3.333		58	40-140			
Naphthalene	1.80	0.085	mg/kg wet	3.333		54	40-140			
Phenanthrene	1.86	0.085	mg/kg wet	3.333		56	40-140			
Pyrene	2.02	0.085	mg/kg wet	3.333		61	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0620

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ92111 - 3546										
LCS Dup										
2-Methylnaphthalene	2.02	0.085	mg/kg wet	3.333		60	40-140	9	30	
Acenaphthene	2.18	0.085	mg/kg wet	3.333		65	40-140	9	30	
Acenaphthylene	2.17	0.085	mg/kg wet	3.333		65	40-140	9	30	
Anthracene	2.14	0.085	mg/kg wet	3.333		64	40-140	8	30	
Benzo(a)anthracene	2.08	0.085	mg/kg wet	3.333		62	40-140	9	30	
Benzo(a)pyrene	2.04	0.085	mg/kg wet	3.333		61	40-140	10	30	
Benzo(b)fluoranthene	2.24	0.085	mg/kg wet	3.333		67	40-140	16	30	
Benzo(g,h,i)perylene	2.02	0.085	mg/kg wet	3.333		61	40-140	14	30	
Benzo(k)fluoranthene	1.95	0.085	mg/kg wet	3.333		58	40-140	4	30	
Chrysene	2.16	0.085	mg/kg wet	3.333		65	40-140	9	30	
Dibenzo(a,h)Anthracene	2.11	0.085	mg/kg wet	3.333		63	40-140	14	30	
Fluoranthene	2.12	0.085	mg/kg wet	3.333		64	40-140	9	30	
Fluorene	2.14	0.085	mg/kg wet	3.333		64	40-140	9	30	
Indeno(1,2,3-cd)Pyrene	2.08	0.085	mg/kg wet	3.333		62	40-140	7	30	
Naphthalene	1.95	0.085	mg/kg wet	3.333		59	40-140	8	30	
Phenanthrene	2.03	0.085	mg/kg wet	3.333		61	40-140	9	30	
Pyrene	2.20	0.085	mg/kg wet	3.333		66	40-140	8	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J0620

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
J	Reported between MDL and MRL
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
B+	Blank Spike recovery is above upper control limit (B+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0620

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 19J0620
Date Received: 10/17/2019
Project Due Date: 10/24/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: ~~2.0~~ 3.1 jjs 10/24/19 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / ~~NA~~
10. Were any analyses received outside of hold time? Yes / ~~No~~

11. Any Subcontracting needed? Yes / ~~No~~
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? ~~Yes~~ / No
    a. Air bubbles in aqueous VOAs? ~~Yes~~ / No
    b. Does methanol cover soil completely? ~~Yes~~ / No / NA
13. Are the samples properly preserved? ~~Yes~~ / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / ~~No~~
    a. Was there a need to contact the client? Yes / ~~No~~
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	399985	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	400038	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	400039	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	400040	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	399984	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	400035	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400036	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400037	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	399983	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	400032	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400033	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400034	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	399982	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	400029	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400030	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400031	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	399981	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
05	400026	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400027	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400028	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	399980	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
06	400023	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	400024	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0620

Date Received: 10/17/2019

06	400025	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	399979	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	400020	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	400021	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	400022	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	399978	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	400017	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	400018	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	400019	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	399977	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	400014	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	400015	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	400016	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	399976	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	400011	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	400012	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	400013	Yes	NA	Yes	8 oz. Jar - Unpres	NP

2nd Review

Were all containers scanned into storage/lab? Initials

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/18/19 13:42

Reviewed By: Date & Time: 10/18/19 15:00

Delivered By: 10/18/19 11:50

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 19J0620
Date Received: 10/17/2019
Project Due Date: 10/24/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.0 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / ~~NA~~
10. Were any analyses received outside of hold time? Yes / ~~No~~

11. Any Subcontracting needed? Yes / ~~No~~
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? ~~Yes~~ / No
    a. Air bubbles in aqueous VOAs? ~~Yes~~ / No
    b. Does methanol cover soil completely? ~~Yes~~ / No / NA

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / ~~No~~
    a. Was there a need to contact the client? Yes / ~~No~~
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	399985	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	400038	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	400039	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	400040	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	399984	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	400035	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400036	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400037	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	399983	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	400032	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400033	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400034	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	399982	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	400029	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400030	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400031	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	399981	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
05	400026	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400027	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400028	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	399980	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
06	400023	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	400024	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0620

Date Received: 10/17/2019

06	400025	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	399979	Yes	NA	Yes	VOA Vial - Methanol	MeOH
07	400020	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	400021	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	400022	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	399978	Yes	NA	Yes	VOA Vial - Methanol	MeOH
08	400017	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	400018	Yes	NA	Yes	8 oz. Jar - Unpres	NP
08	400019	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	399977	Yes	NA	Yes	VOA Vial - Methanol	MeOH
09	400014	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	400015	Yes	NA	Yes	8 oz. Jar - Unpres	NP
09	400016	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	399976	Yes	NA	Yes	VOA Vial - Methanol	MeOH
10	400011	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	400012	Yes	NA	Yes	8 oz. Jar - Unpres	NP
10	400013	Yes	NA	Yes	8 oz. Jar - Unpres	NP

2nd Review

Were all containers scanned into storage/lab? Initials

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/18/19 13:42

Reviewed By: Date & Time: 10/18/19 15:00

Delivered By: 10/18/19 11:50

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

CHAIN OF CUSTODY

ESS Lab # 1950620

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits
Electronic Deliverables: [X] Data Checker [X] Other (Please Specify →) PDF [X] Excel

Company Name	Project #	Project Name
GZA	34640	Tuck-Away Landfill

Contact Person: Richard Carlone
Address: 188 Valley Street, Suite 300
City: Providence | State: RI | Zip Code: 02909 | PO #:
Telephone Number: | FAX Number: | Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	SVOC	TPH	PCB	Pest.	Metals[1]
1	10/17/19	0745	Grab	Sed.	SSW-8 (0-6")	X	X	X	X	X	X
2	10/17/19	0745	Grab	Sed.	SSW-8 (6-18")	X	X	X	X	X	X
	10/17/19	0745	Grab	Sed.	SSW-8 (18-36")[2]	X	X	X	X	X	X
3	10/17/19	0945	Grab	Sed.	SSW-11 (0-6")	X	X	X	X	X	X
4	10/17/19	0945	Grab	Sed.	SSW-11 (6-18")	X	X	X	X	X	X
	10/17/19	0945	Grab	Sed.	SSW-11 (18-36")[2]	X	X	X	X	X	X
5	10/17/19	1153	Grab	Sed.	SSW-7 (0-6")	X	X	X	X	X	X
6	10/17/19	1153	Grab	Sed.	SSW-7 (6-18")	X	X	X	X	X	X
	10/17/19	1153	Grab	Sed.	SSW-7 (18-36")[2]	X	X	X	X	X	X
7	10/17/19	1407	Grab	Sed.	SSW-6 (0-6")	X	X	X	X	X	X
					Container Type: AC-Air Cassette, AG-Amber Glass, B-BOD Bottle, C-Cubitainer, J-Jar, O-Other, P-Poly, S-Sterile, V-Vial	V	AG	AG	AG	AG	AG
					Container Volume: 1-100 mL, 2-2.5 gal, 3-250 mL, 4-300 mL, 5-500 mL, 6-1L, 7-VOA, 8-2 oz, 9-4 oz, 10-8 oz, 11-Other*	7	10	10	10	10	10
					Preservation Code: 1-Non Preserved, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-Methanol, 7-Na2S2O3, 8-ZnAce, NaOH, 9-NH4Cl, 10-DI H2O, 11-Other*	6	1	1	1	1	1
					Number of Containers per Sample:	1	← 3 →				

Laboratory Use Only
Cooler Present: [initials] ○ Drop Off
Seals Intact: [initials] ○ Pickup
Cooler Temperature: 2.0 2.9 °C 3.1

Sampled by: Rowan Hawes
Please specify "Other" preservative and containers types in this space
Comments:
1. Sed metals: 15 solid waste, mercury
2. Sed samples (18-36") place on HOLD until other results come back
page 1 of 2

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/17/19 1600	[signature] 10/17/19 1608		
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

CHAIN OF CUSTODY

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

ESS Lab # 19J0620
Reporting Limits
Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA	Turn Time: 5 Days	Project #: 34648	Project Name: Mik-Andy Landfill
Contact Person: Richard Carlone	Regulatory State: RI	Address: 100 Valley St. Suite 300	
City: Providence	State: RI	Zip Code: 02909	PO #:
Telephone Number:	FAX Number:	Email Address: richard.carlone@gza.com	

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC	SVOC	TPH	PCB	Pest.	Metals
8	10/17/19	1407	Grab	Sed.	SSW-6 (6-18")	X	X	X	X	X	X
	10/17/19	1407	Grab	Sed.	SSW-6 (18-36")2	X	X	X	X	X	X
9	10/17/19	1500	Grab	Sed.	SSW-5 (0-6")	X	X	X	X	X	X
10	10/17/19	1500	Grab	Sed.	SSW-5 (6-18")	X	X	X	X	X	X
	10/17/19	1500	Grab	Sed.	SSW-5 (18-36")2	X	X	X	X	X	X
11	10/17/19	0400			Trip Blank	X					

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial	V	AG	AG	AG	AG	AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	2	10	10	10	10	10
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*	6	1	1	1	1	1
Number of Containers per Sample:	1	←		3		→

Laboratory Use Only
Cooler Present: X ○ Drop Off
Seals Intact: NA ○ Pickup
Cooler Temperature: 2.0, 2.9 3.1

Sampled by: Ryan Hamer

Comments: Please specify "Other" preservative and containers types in this space
1. sed. metals: 15 solid waste, mercury
2. sed. samples (18-36") place on HOLD until other results come back.
page 2 of 2

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/17/19 1600	10/17/19 1608		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19J0646

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:48 pm, Oct 29, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

SAMPLE RECEIPT

The following samples were received on October 18, 2019 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice and therefore meet regulatory criteria.

Lab Number	Sample Name	Matrix	Analysis
19J0646-01	SSW-2 0-6in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0646-02	SSW-2 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0646-03	SSW-3 0-6in	Sediment	6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0646-04	SSW-3 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0646-05	SSW-4 0-6in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0646-06	SSW-4 6-18in	Sediment	6010C, 7471B, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM
19J0646-07	Trip Blank	Sediment	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

CJ92327-BS1 **Blank Spike recovery is below lower control limit (B-).**
Dichlorodifluoromethane (59% @ 70-130%)

CJ92327-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Dichlorodifluoromethane (64% @ 70-130%)

8081B Organochlorine Pesticides

19J0646-03 **Lower value is used due to matrix interferences (LC).**
alpha-Chlordane [2C]

19J0646-03 **Percent difference between primary and confirmation results exceeds 40% (P).**
alpha-Chlordane [2C]

19J0646-04 **Lower value is used due to matrix interferences (LC).**
alpha-Chlordane [2C]

19J0646-04 **Percent difference between primary and confirmation results exceeds 40% (P).**
alpha-Chlordane [2C]

8270D Semi-Volatile Organic Compounds

C9J0360-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (90% @ 80-120%), 4,6-Dinitro-2-Methylphenol (105% @ 80-120%), Benzoic Acid (88% @ 80-120%)

C9J0384-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (107% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (104% @ 80-120%), Pentachlorophenol (106% @ 80-120%)

8270D(SIM) Polynuclear Aromatic Hydrocarbons

C9J0474-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Methylnaphthalene (30% @ 20%)

Total Metals

CJ92155-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Cadmium (77% @ 80-120%)

CJ92156-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Mercury (124% @ 80-120%)

CJ92156-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Mercury (41% @ 20%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J0646

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (7.07)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Arsenic	**6.25** (3.53)		6010C		1	KJK	10/22/19 6:35	2.16	100	CJ92155
Barium	**23.7** (3.53)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Beryllium	**0.32** (0.16)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Cadmium	ND (0.71)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Chromium	**7.82** (1.41)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Cobalt	**5.88** (1.41)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Copper	**15.2** (3.53)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Lead	**59.0** (7.07)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Mercury	**0.057** (0.029)		7471B		1	MKS	10/22/19 14:06	1.04	40	CJ92156
Nickel	**10.2** (3.53)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Selenium	ND (7.07)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Silver	ND (0.71)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Thallium	ND (0.71)		6020A		1	NAR	10/23/19 10:22	2.16	100	CJ92155
Vanadium	**13.1** (1.41)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155
Zinc	**28.1** (3.53)		6010C		1	BJV	10/22/19 6:35	2.16	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 11.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (2.52)	0.504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (101)	95.7	8260B		1	10/22/19 12:44	C9J0403	CJ92241
1-Chlorohexane	ND (0.504)	0.202	8260B		1	10/22/19 12:44	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
2-Butanone	ND (2.52)	1.71	8260B		1	10/22/19 12:44	C9J0403	CJ92241
2-Chlorotoluene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
2-Hexanone	ND (2.52)	0.756	8260B		1	10/22/19 12:44	C9J0403	CJ92241
4-Chlorotoluene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (2.52)	0.806	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Acetone	ND (2.52)	1.36	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Benzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Bromobenzene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 11.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Bromodichloromethane	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Bromoform	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Bromomethane	ND (0.504)	0.202	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Carbon Disulfide	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Chlorobenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Chloroethane	ND (0.504)	0.202	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Chloroform	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Chloromethane	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Dibromochloromethane	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Dibromomethane	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Diethyl Ether	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Di-isopropyl ether	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Ethylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Isopropylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Methylene Chloride	**J 0.176** (1.01)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Naphthalene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
n-Butylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
n-Propylbenzene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
sec-Butylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Styrene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
tert-Butylbenzene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Tetrachloroethene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Tetrahydrofuran	ND (2.52)	0.806	8260B		1	10/22/19 12:44	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 11.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.504)	0.151	8260B		1	10/22/19 12:44	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Trichloroethene	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.504)	0.202	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Vinyl Acetate	ND (0.504)	0.252	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Vinyl Chloride	ND (0.504)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Xylene O	ND (0.504)	0.0504	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Xylene P,M	ND (1.01)	0.101	8260B		1	10/22/19 12:44	C9J0403	CJ92241
Xylenes (Total)	ND (1.01)		8260B		1	10/22/19 12:44		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*94 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*84 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*88 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
4,4´-DDE	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
4,4´-DDT	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Aldrin	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
alpha-BHC	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
alpha-Chlordane	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
beta-BHC	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Chlordane (Total)	ND (0.0472)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
delta-BHC	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Dieldrin	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Endosulfan I	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Endosulfan II	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Endosulfan Sulfate	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Endrin	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Endrin Aldehyde	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Endrin Ketone	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
gamma-BHC (Lindane)	ND (0.0024)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
gamma-Chlordane	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Heptachlor	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Heptachlor Epoxide	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Hexachlorobenzene	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Methoxychlor	ND (0.0039)		8081B		1	10/25/19 16:49	C9J0484	CJ92110
Toxaphene	ND (0.197)		8081B		1	10/25/19 16:49	C9J0484	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/21/19 16:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1221	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1232	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1242	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1248	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1254	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1260	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1262	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106
Aroclor 1268	ND (0.08)		8082A		1	10/22/19 16:19		CJ92106

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 20.9
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/21/19 11:07

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**62.8** (54.8)		8100M		1	10/22/19 3:40	C9J0374	CJ92112

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*89 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,4-Dinitrophenol	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2-Chlorophenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2-Methylphenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2-Nitroaniline	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
2-Nitrophenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (0.986)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
3+4-Methylphenol	ND (0.986)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
3-Nitroaniline	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4-Chloroaniline	ND (0.986)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4-Nitroaniline	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
4-Nitrophenol	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Acetophenone	ND (0.986)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Aniline	ND (0.986)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Azobenzene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Benzoic Acid	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Carbazole	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Dibenzofuran	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Diethylphthalate	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Dimethylphthalate	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Hexachlorobenzene	ND (0.247)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Hexachloroethane	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Isophorone	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Nitrobenzene	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Pentachlorophenol	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Phenol	ND (0.492)		8270D		1	10/22/19 15:59	C9J0384	CJ92111
Pyridine	ND (2.47)		8270D		1	10/22/19 15:59	C9J0384	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*74 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*79 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: 2-Fluorophenol	*81 %*		*30-130*
Surrogate: Nitrobenzene-d5	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*87 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 0-6in
Date Sampled: 10/18/19 08:50
Percent Solids: 65
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Acenaphthene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Acenaphthylene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Anthracene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Benzo(a)anthracene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Benzo(a)pyrene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Benzo(b)fluoranthene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Benzo(g,h,i)perylene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Benzo(k)fluoranthene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Chrysene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Dibenzo(a,h)Anthracene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Fluoranthene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Fluorene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Naphthalene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Phenanthrene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111
Pyrene	ND (0.025)		8270D SIM		1	10/23/19 21:53	C9J0474	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.31)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Arsenic	**4.93** (2.16)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Barium	**17.1** (2.16)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Beryllium	**0.66** (0.09)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Cadmium	ND (0.43)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Chromium	**6.81** (0.86)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Cobalt	**4.76** (0.86)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Copper	**14.9** (2.16)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Lead	**27.4** (4.31)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Mercury	**0.033** (0.023)		7471B		1	MKS	10/22/19 14:08	1.28	40	CJ92156
Nickel	**10.7** (2.16)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Selenium	ND (4.31)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Silver	**0.81** (0.43)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Thallium	ND (4.31)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Vanadium	**10.7** (0.86)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155
Zinc	**27.2** (2.16)		6010C		1	BJV	10/22/19 6:39	3.46	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 15.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.90)	0.380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (76.0)	72.2	8260B		1	10/22/19 13:11	C9J0403	CJ92241
1-Chlorohexane	ND (0.380)	0.152	8260B		1	10/22/19 13:11	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
2-Butanone	ND (1.90)	1.29	8260B		1	10/22/19 13:11	C9J0403	CJ92241
2-Chlorotoluene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
2-Hexanone	ND (1.90)	0.570	8260B		1	10/22/19 13:11	C9J0403	CJ92241
4-Chlorotoluene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.90)	0.608	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Acetone	ND (1.90)	1.03	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Benzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Bromobenzene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 15.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Bromodichloromethane	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Bromoform	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Bromomethane	ND (0.380)	0.152	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Carbon Disulfide	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Chlorobenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Chloroethane	ND (0.380)	0.152	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Chloroform	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Chloromethane	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Dibromochloromethane	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Dibromomethane	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Diethyl Ether	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Di-isopropyl ether	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Ethylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Isopropylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Methylene Chloride	**J 0.122** (0.760)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Naphthalene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
n-Butylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
n-Propylbenzene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
sec-Butylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Styrene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
tert-Butylbenzene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Tetrachloroethene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Tetrahydrofuran	ND (1.90)	0.608	8260B		1	10/22/19 13:11	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 15.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.380)	0.114	8260B		1	10/22/19 13:11	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Trichloroethene	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.380)	0.152	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Vinyl Acetate	ND (0.380)	0.190	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Vinyl Chloride	ND (0.380)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Xylene O	ND (0.380)	0.0380	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Xylene P,M	ND (0.760)	0.0760	8260B		1	10/22/19 13:11	C9J0403	CJ92241
Xylenes (Total)	ND (0.760)		8260B		1	10/22/19 13:11		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*86 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*92 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
4,4´-DDE	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
4,4´-DDT	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Aldrin	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
alpha-BHC	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
alpha-Chlordane	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
beta-BHC	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Chlordane (Total)	ND (0.0448)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
delta-BHC	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Dieldrin	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Endosulfan I	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Endosulfan II	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Endosulfan Sulfate	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Endrin	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Endrin Aldehyde	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Endrin Ketone	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
gamma-BHC (Lindane)	ND (0.0022)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
gamma-Chlordane	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Heptachlor	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Heptachlor Epoxide	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Hexachlorobenzene	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Methoxychlor	ND (0.0037)		8081B		1	10/25/19 17:20	C9J0484	CJ92110
Toxaphene	ND (0.187)		8081B		1	10/25/19 17:20	C9J0484	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*71 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/21/19 16:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1221	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1232	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1242	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1248	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1254	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1260	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1262	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106
Aroclor 1268	ND (0.07)		8082A		1	10/22/19 16:39		CJ92106

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/21/19 11:07

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (58.3)		8100M		1	10/22/19 4:12	C9J0374	CJ92112

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*87 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,4-Dinitrophenol	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2-Chlorophenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2-Methylphenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2-Nitroaniline	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
2-Nitrophenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (1.07)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
3+4-Methylphenol	ND (1.07)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
3-Nitroaniline	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4-Chloroaniline	ND (1.07)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4-Nitroaniline	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
4-Nitrophenol	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Acetophenone	ND (1.07)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Aniline	ND (1.07)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Azobenzene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Benzoic Acid	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Carbazole	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Dibenzofuran	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Diethylphthalate	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Dimethylphthalate	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Hexachlorobenzene	ND (0.267)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Hexachloroethane	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Isophorone	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Nitrobenzene	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Pentachlorophenol	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Phenol	ND (0.532)		8270D		1	10/22/19 16:28	C9J0384	CJ92111
Pyridine	ND (2.67)		8270D		1	10/22/19 16:28	C9J0384	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*74 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*73 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*79 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*
Surrogate: 2-Fluorophenol	*80 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*76 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*83 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2 6-18in
Date Sampled: 10/18/19 08:50
Percent Solids: 67
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Acenaphthene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Acenaphthylene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Anthracene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Benzo(a)anthracene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Benzo(a)pyrene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Benzo(b)fluoranthene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Benzo(g,h,i)perylene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Benzo(k)fluoranthene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Chrysene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Dibenzo(a,h)Anthracene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Fluoranthene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Fluorene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Naphthalene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Phenanthrene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111
Pyrene	ND (0.027)		8270D SIM		1	10/23/19 22:41	C9J0474	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (6.22)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Arsenic	**3.98** (3.11)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Barium	**11.3** (3.11)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Beryllium	**0.28** (0.14)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Cadmium	ND (0.62)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Chromium	**8.40** (1.24)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Cobalt	**3.82** (1.24)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Copper	**9.48** (3.11)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Lead	**6.84** (6.22)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Mercury	ND (0.028)		7471B		1	MKS	10/22/19 14:10	1.12	40	CJ92156
Nickel	**8.65** (3.11)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Selenium	ND (6.22)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Silver	ND (0.62)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Thallium	ND (0.62)		6020A		1	NAR	10/23/19 10:27	2.51	100	CJ92155
Vanadium	**11.2** (1.24)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155
Zinc	**28.0** (3.11)		6010C		1	BJV	10/22/19 6:43	2.51	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 17.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.88)	0.375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (75.0)	71.3	8260B		1	10/22/19 13:38	C9J0403	CJ92241
1-Chlorohexane	ND (0.375)	0.150	8260B		1	10/22/19 13:38	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
2-Butanone	ND (1.88)	1.28	8260B		1	10/22/19 13:38	C9J0403	CJ92241
2-Chlorotoluene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
2-Hexanone	ND (1.88)	0.563	8260B		1	10/22/19 13:38	C9J0403	CJ92241
4-Chlorotoluene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.88)	0.600	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Acetone	ND (1.88)	1.01	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Benzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Bromobenzene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 17.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Bromodichloromethane	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Bromoform	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Bromomethane	ND (0.375)	0.150	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Carbon Disulfide	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Chlorobenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Chloroethane	ND (0.375)	0.150	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Chloroform	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Chloromethane	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Dibromochloromethane	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Dibromomethane	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Diethyl Ether	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Di-isopropyl ether	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Ethylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Isopropylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Methylene Chloride	**J 0.128** (0.750)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Naphthalene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
n-Butylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
n-Propylbenzene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
sec-Butylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Styrene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
tert-Butylbenzene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Tetrachloroethene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Tetrahydrofuran	ND (1.88)	0.600	8260B		1	10/22/19 13:38	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 17.8
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.375)	0.113	8260B		1	10/22/19 13:38	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Trichloroethene	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.375)	0.150	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Vinyl Acetate	ND (0.375)	0.188	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Vinyl Chloride	ND (0.375)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Xylene O	ND (0.375)	0.0375	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Xylene P,M	ND (0.750)	0.0750	8260B		1	10/22/19 13:38	C9J0403	CJ92241
Xylenes (Total)	ND (0.750)		8260B		1	10/22/19 13:38		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*100 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*104 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
4,4´-DDE	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
4,4´-DDT	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Aldrin	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
alpha-BHC	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
alpha-Chlordane	**0.384** (0.0402)		8081B		10	10/29/19 1:37	C9J0484	CJ92110
beta-BHC	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Chlordane (Total)	**0.664** (0.483)		8081B		10	10/29/19 1:37	C9J0484	CJ92110
delta-BHC	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Dieldrin	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Endosulfan I	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Endosulfan II	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Endosulfan Sulfate	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Endrin	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Endrin Aldehyde	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Endrin Ketone	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
gamma-BHC (Lindane)	ND (0.0024)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
gamma-Chlordane	**0.0988** (0.0402)		8081B		10	10/29/19 1:37	C9J0484	CJ92110
Heptachlor	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Heptachlor Epoxide [2C]	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Hexachlorobenzene	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Methoxychlor	ND (0.0040)		8081B		1	10/25/19 17:51	C9J0484	CJ92110
Toxaphene	ND (0.201)		8081B		1	10/25/19 17:51	C9J0484	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/21/19 16:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1221	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1232	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1242	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1248	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1254	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1260	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1262	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106
Aroclor 1268	ND (0.08)		8082A		1	10/22/19 16:58		CJ92106

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*77 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*70 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 20.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/21/19 11:07

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (57.1)		8100M		1	10/22/19 4:45	C9J0374	CJ92112

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,4-Dinitrophenol	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2-Chlorophenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2-Methylphenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2-Nitroaniline	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
2-Nitrophenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (1.04)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
3+4-Methylphenol	ND (1.04)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
3-Nitroaniline	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4-Chloroaniline	ND (1.04)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4-Nitroaniline	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
4-Nitrophenol	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Acetophenone	ND (1.04)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Aniline	ND (1.04)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Azobenzene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Benzoic Acid	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Carbazole	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Dibenzofuran	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Diethylphthalate	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Dimethylphthalate	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Hexachlorobenzene	ND (0.261)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Hexachloroethane	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Isophorone	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Nitrobenzene	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Pentachlorophenol	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Phenol	ND (0.520)		8270D		1	10/22/19 16:57	C9J0384	CJ92111
Pyridine	ND (2.61)		8270D		1	10/22/19 16:57	C9J0384	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*67 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*68 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*73 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*
Surrogate: 2-Fluorophenol	*72 %*		*30-130*
Surrogate: Nitrobenzene-d5	*70 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*69 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*84 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 0-6in
Date Sampled: 10/18/19 09:50
Percent Solids: 64
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Acenaphthene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Acenaphthylene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Anthracene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Benzo(a)anthracene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Benzo(a)pyrene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Benzo(b)fluoranthene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Benzo(g,h,i)perylene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Benzo(k)fluoranthene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Chrysene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Dibenzo(a,h)Anthracene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Fluoranthene	**0.041** (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Fluorene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Naphthalene	**0.047** (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Phenanthrene	**0.027** (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111
Pyrene	**0.036** (0.027)		8270D SIM		1	10/23/19 23:28	C9J0474	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.81)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Arsenic	**3.77** (2.40)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Barium	**12.6** (2.40)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Beryllium	**0.22** (0.11)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Cadmium	ND (0.48)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Chromium	**7.35** (0.96)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Cobalt	**4.73** (0.96)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Copper	**10.6** (2.40)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Lead	**6.01** (4.81)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Mercury	ND (0.022)		7471B		1	MKS	10/22/19 14:12	1.13	40	CJ92156
Nickel	**10.4** (2.40)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Selenium	ND (4.81)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Silver	ND (0.48)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Thallium	ND (4.81)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Vanadium	**9.74** (0.96)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155
Zinc	**18.4** (2.40)		6010C		1	BJV	10/22/19 6:47	2.61	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 15.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.49)	0.299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (59.7)	56.7	8260B		1	10/22/19 14:04	C9J0403	CJ92241
1-Chlorohexane	ND (0.299)	0.119	8260B		1	10/22/19 14:04	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
2-Butanone	ND (1.49)	1.02	8260B		1	10/22/19 14:04	C9J0403	CJ92241
2-Chlorotoluene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
2-Hexanone	ND (1.49)	0.448	8260B		1	10/22/19 14:04	C9J0403	CJ92241
4-Chlorotoluene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.49)	0.478	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Acetone	ND (1.49)	0.806	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Benzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Bromobenzene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 15.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Bromodichloromethane	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Bromoform	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Bromomethane	ND (0.299)	0.119	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Carbon Disulfide	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Chlorobenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Chloroethane	ND (0.299)	0.119	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Chloroform	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Chloromethane	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Dibromochloromethane	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Dibromomethane	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Diethyl Ether	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Di-isopropyl ether	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Ethylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Isopropylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Methylene Chloride	**J 0.182** (0.597)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Naphthalene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
n-Butylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
n-Propylbenzene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
sec-Butylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Styrene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
tert-Butylbenzene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Tetrachloroethene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Tetrahydrofuran	ND (1.49)	0.478	8260B		1	10/22/19 14:04	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 15.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.299)	0.0896	8260B		1	10/22/19 14:04	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Trichloroethene	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.299)	0.119	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Vinyl Acetate	ND (0.299)	0.149	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Vinyl Chloride	ND (0.299)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Xylene O	ND (0.299)	0.0299	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Xylene P,M	ND (0.597)	0.0597	8260B		1	10/22/19 14:04	C9J0403	CJ92241
Xylenes (Total)	ND (0.597)		8260B		1	10/22/19 14:04		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*100 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*89 %*		*70-130*
Surrogate: Dibromofluoromethane	*98 %*		*70-130*
Surrogate: Toluene-d8	*90 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
4,4´-DDE	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
4,4´-DDT	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Aldrin	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
alpha-BHC	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
alpha-Chlordane [2C]	**P, LC 0.0055** (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
beta-BHC	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Chlordane (Total) [2C]	ND (0.0386)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
delta-BHC	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Dieldrin	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Endosulfan I	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Endosulfan II	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Endosulfan Sulfate	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Endrin	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Endrin Aldehyde	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Endrin Ketone	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
gamma-BHC (Lindane)	ND (0.0019)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
gamma-Chlordane	**0.0037** (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Heptachlor	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Heptachlor Epoxide	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Hexachlorobenzene	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Methoxychlor	ND (0.0032)		8081B		1	10/25/19 18:21	C9J0484	CJ92110
Toxaphene	ND (0.161)		8081B		1	10/25/19 18:21	C9J0484	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*82 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/21/19 16:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1221	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1232	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1242	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1248	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1254	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1260	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1262	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106
Aroclor 1268	ND (0.07)		8082A		1	10/22/19 17:17		CJ92106

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*80 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 20
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/21/19 11:07

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (47.1)		8100M		1	10/22/19 5:17	C9J0374	CJ92112

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*91 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,4-Dinitrophenol	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2-Chlorophenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2-Methylphenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2-Nitroaniline	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
2-Nitrophenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (0.884)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
3+4-Methylphenol	ND (0.884)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
3-Nitroaniline	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4-Chloroaniline	ND (0.884)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4-Nitroaniline	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
4-Nitrophenol	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Acetophenone	ND (0.884)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Aniline	ND (0.884)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Azobenzene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Benzoic Acid	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Carbazole	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Dibenzofuran	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Diethylphthalate	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Dimethylphthalate	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Hexachlorobenzene	ND (0.221)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Hexachloroethane	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Isophorone	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Nitrobenzene	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Pentachlorophenol	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Phenol	ND (0.441)		8270D		1	10/22/19 17:26	C9J0384	CJ92111
Pyridine	ND (2.21)		8270D		1	10/22/19 17:26	C9J0384	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*75 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*81 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*79 %*		*30-130*
Surrogate: 2-Fluorophenol	*83 %*		*30-130*
Surrogate: Nitrobenzene-d5	*78 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*78 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*86 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3 6-18in
Date Sampled: 10/18/19 09:50
Percent Solids: 80
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-04
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Acenaphthene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Acenaphthylene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Anthracene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Benzo(a)anthracene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Benzo(a)pyrene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Benzo(b)fluoranthene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Benzo(g,h,i)perylene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Benzo(k)fluoranthene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Chrysene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Dibenzo(a,h)Anthracene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Fluoranthene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Fluorene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Naphthalene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Phenanthrene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111
Pyrene	ND (0.023)		8270D SIM		1	10/24/19 0:15	C9J0474	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.34)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Arsenic	ND (2.67)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Barium	**14.0** (2.67)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Beryllium	**0.22** (0.12)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Cadmium	ND (0.53)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Chromium	**6.33** (1.07)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Cobalt	**2.97** (1.07)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Copper	**11.7** (2.67)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Lead	**14.4** (5.34)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Mercury	ND (0.033)		7471B		1	MKS	10/22/19 14:14	0.78	40	CJ92156
Nickel	**5.44** (2.67)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Selenium	ND (5.34)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Silver	ND (0.53)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Thallium	ND (5.34)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Vanadium	**6.39** (1.07)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155
Zinc	**30.1** (2.67)		6010C		1	BJV	10/22/19 6:51	2.45	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 13.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,1,1-Trichloroethane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,1,2,2-Tetrachloroethane	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,1,2-Trichloroethane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,1-Dichloroethane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,1-Dichloroethene	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,1-Dichloropropene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2,3-Trichlorobenzene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2,3-Trichloropropane	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2,4-Trichlorobenzene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2,4-Trimethylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2-Dibromo-3-Chloropropane	ND (1.80)	0.359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2-Dibromoethane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2-Dichlorobenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2-Dichloroethane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,2-Dichloropropane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,3,5-Trimethylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,3-Dichlorobenzene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,3-Dichloropropane	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,4-Dichlorobenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1,4-Dioxane - Screen	ND (71.9)	68.3	8260B		1	10/22/19 14:31	C9J0403	CJ92241
1-Chlorohexane	ND (0.359)	0.144	8260B		1	10/22/19 14:31	C9J0403	CJ92241
2,2-Dichloropropane	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
2-Butanone	ND (1.80)	1.22	8260B		1	10/22/19 14:31	C9J0403	CJ92241
2-Chlorotoluene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
2-Hexanone	ND (1.80)	0.539	8260B		1	10/22/19 14:31	C9J0403	CJ92241
4-Chlorotoluene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
4-Isopropyltoluene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
4-Methyl-2-Pentanone	ND (1.80)	0.575	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Acetone	ND (1.80)	0.970	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Benzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Bromobenzene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 13.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Bromodichloromethane	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Bromoform	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Bromomethane	ND (0.359)	0.144	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Carbon Disulfide	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Carbon Tetrachloride	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Chlorobenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Chloroethane	ND (0.359)	0.144	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Chloroform	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Chloromethane	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
cis-1,2-Dichloroethene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
cis-1,3-Dichloropropene	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Dibromochloromethane	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Dibromomethane	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Dichlorodifluoromethane	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Diethyl Ether	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Di-isopropyl ether	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Ethyl tertiary-butyl ether	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Ethylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Hexachlorobutadiene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Isopropylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Methyl tert-Butyl Ether	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Methylene Chloride	**J 0.187** (0.719)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Naphthalene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
n-Butylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
n-Propylbenzene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
sec-Butylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Styrene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
tert-Butylbenzene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Tertiary-amyl methyl ether	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Tetrachloroethene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Tetrahydrofuran	ND (1.80)	0.575	8260B		1	10/22/19 14:31	C9J0403	CJ92241

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 13.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
trans-1,2-Dichloroethene	ND (0.359)	0.108	8260B		1	10/22/19 14:31	C9J0403	CJ92241
trans-1,3-Dichloropropene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Trichloroethene	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Trichlorofluoromethane	ND (0.359)	0.144	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Vinyl Acetate	ND (0.359)	0.180	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Vinyl Chloride	ND (0.359)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Xylene O	ND (0.359)	0.0359	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Xylene P,M	ND (0.719)	0.0719	8260B		1	10/22/19 14:31	C9J0403	CJ92241
Xylenes (Total)	ND (0.719)		8260B		1	10/22/19 14:31		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*94 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*83 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*86 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
4,4´-DDE	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
4,4´-DDT	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Aldrin	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
alpha-BHC	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
alpha-Chlordane	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
beta-BHC	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Chlordane (Total)	ND (0.0405)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
delta-BHC	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Dieldrin	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Endosulfan I	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Endosulfan II	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Endosulfan Sulfate	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Endrin	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Endrin Aldehyde	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Endrin Ketone	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
gamma-BHC (Lindane)	ND (0.0020)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
gamma-Chlordane	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Heptachlor	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Heptachlor Epoxide	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Hexachlorobenzene	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Methoxychlor	ND (0.0034)		8081B		1	10/25/19 18:52	C9J0484	CJ92110
Toxaphene	ND (0.169)		8081B		1	10/25/19 18:52	C9J0484	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*71 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/21/19 16:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1221	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1232	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1242	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1248	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1254	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1260	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1262	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106
Aroclor 1268	ND (0.06)		8082A		1	10/22/19 17:36		CJ92106

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 19
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/21/19 11:07

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**61.2** (51.7)		8100M		1	10/22/19 5:50	C9J0374	CJ92112

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*86 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,4-Dinitrophenol	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2-Chlorophenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2-Methylphenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2-Nitroaniline	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
2-Nitrophenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (0.903)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
3+4-Methylphenol	ND (0.903)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
3-Nitroaniline	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4-Chloroaniline	ND (0.903)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4-Nitroaniline	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
4-Nitrophenol	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Acetophenone	ND (0.903)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Aniline	ND (0.903)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Azobenzene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Benzoic Acid	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Carbazole	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Dibenzofuran	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Diethylphthalate	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Dimethylphthalate	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Hexachlorobenzene	ND (0.226)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Hexachloroethane	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Isophorone	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Nitrobenzene	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Pentachlorophenol	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Phenol	ND (0.451)		8270D		1	10/22/19 17:55	C9J0384	CJ92111
Pyridine	ND (2.26)		8270D		1	10/22/19 17:55	C9J0384	CJ92111

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*66 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*72 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*71 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*75 %*		*30-130*
Surrogate: 2-Fluorophenol	*71 %*		*30-130*
Surrogate: Nitrobenzene-d5	*69 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*68 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*86 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 0-6in
Date Sampled: 10/18/19 11:17
Percent Solids: 76
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Acenaphthene	ND (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Acenaphthylene	ND (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Anthracene	**0.026** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Benzo(a)anthracene	**0.118** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Benzo(a)pyrene	**0.123** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Benzo(b)fluoranthene	**0.173** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Benzo(g,h,i)perylene	**0.082** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Benzo(k)fluoranthene	**0.047** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Chrysene	**0.135** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Dibenzo(a,h)Anthracene	ND (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Fluoranthene	**0.238** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Fluorene	ND (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Indeno(1,2,3-cd)Pyrene	**0.086** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Naphthalene	ND (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Phenanthrene	**0.103** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111
Pyrene	**0.222** (0.023)		8270D SIM		1	10/24/19 18:06	C9J0548	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.13)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Arsenic	**3.22** (2.06)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Barium	**11.3** (2.06)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Beryllium	**0.23** (0.09)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Cadmium	ND (0.41)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Chromium	**4.67** (0.83)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Cobalt	**2.63** (0.83)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Copper	**10.3** (2.06)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Lead	**12.6** (4.13)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Mercury	**0.021** (0.018)		7471B		1	MKS	10/22/19 14:16	1.35	40	CJ92156
Nickel	**5.76** (2.06)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Selenium	ND (4.13)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Silver	ND (0.41)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Thallium	ND (4.13)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Vanadium	**6.19** (0.83)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155
Zinc	**24.8** (2.06)		6010C		1	BJV	10/22/19 6:55	3.01	100	CJ92155

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,1,1-Trichloroethane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,1,2,2-Tetrachloroethane	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,1,2-Trichloroethane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,1-Dichloroethane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,1-Dichloroethene	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,1-Dichloropropene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2,3-Trichlorobenzene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2,3-Trichloropropane	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2,4-Trichlorobenzene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2,4-Trimethylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2-Dibromo-3-Chloropropane	ND (1.57)	0.315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2-Dibromoethane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2-Dichlorobenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2-Dichloroethane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,2-Dichloropropane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,3,5-Trimethylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,3-Dichlorobenzene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,3-Dichloropropane	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,4-Dichlorobenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1,4-Dioxane - Screen	ND (63.0)	59.8	8260B		1	10/23/19 13:56	C9J0437	CJ92327
1-Chlorohexane	ND (0.315)	0.126	8260B		1	10/23/19 13:56	C9J0437	CJ92327
2,2-Dichloropropane	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
2-Butanone	ND (1.57)	1.07	8260B		1	10/23/19 13:56	C9J0437	CJ92327
2-Chlorotoluene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
2-Hexanone	ND (1.57)	0.472	8260B		1	10/23/19 13:56	C9J0437	CJ92327
4-Chlorotoluene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
4-Isopropyltoluene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
4-Methyl-2-Pentanone	ND (1.57)	0.504	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Acetone	ND (1.57)	0.850	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Benzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Bromobenzene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Bromodichloromethane	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Bromoform	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Bromomethane	ND (0.315)	0.126	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Carbon Disulfide	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Carbon Tetrachloride	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Chlorobenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Chloroethane	ND (0.315)	0.126	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Chloroform	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Chloromethane	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
cis-1,2-Dichloroethene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
cis-1,3-Dichloropropene	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Dibromochloromethane	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Dibromomethane	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Dichlorodifluoromethane	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Diethyl Ether	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Di-isopropyl ether	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Ethyl tertiary-butyl ether	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Ethylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Hexachlorobutadiene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Isopropylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Methyl tert-Butyl Ether	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Methylene Chloride	ND (0.630)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Naphthalene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
n-Butylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
n-Propylbenzene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
sec-Butylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Styrene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
tert-Butylbenzene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Tertiary-amyl methyl ether	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Tetrachloroethene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Tetrahydrofuran	ND (1.57)	0.504	8260B		1	10/23/19 13:56	C9J0437	CJ92327

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
trans-1,2-Dichloroethene	ND (0.315)	0.0945	8260B		1	10/23/19 13:56	C9J0437	CJ92327
trans-1,3-Dichloropropene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Trichloroethene	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Trichlorofluoromethane	ND (0.315)	0.126	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Vinyl Acetate	ND (0.315)	0.157	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Vinyl Chloride	ND (0.315)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Xylene O	ND (0.315)	0.0315	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Xylene P,M	ND (0.630)	0.0630	8260B		1	10/23/19 13:56	C9J0437	CJ92327
Xylenes (Total)	ND (0.630)		8260B		1	10/23/19 13:56		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*81 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*81 %*		*70-130*
Surrogate: Dibromofluoromethane	*79 %*		*70-130*
Surrogate: Toluene-d8	*81 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 12:57

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
4,4´-DDE	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
4,4´-DDT	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Aldrin	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
alpha-BHC	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
alpha-Chlordane [2C]	**0.0078** (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
beta-BHC	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Chlordane (Total) [2C]	ND (0.0386)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
delta-BHC	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Dieldrin	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Endosulfan I	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Endosulfan II	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Endosulfan Sulfate	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Endrin	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Endrin Aldehyde	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Endrin Ketone	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
gamma-BHC (Lindane)	ND (0.0019)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
gamma-Chlordane	**0.0047** (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Heptachlor	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Heptachlor Epoxide	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Hexachlorobenzene	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Methoxychlor	ND (0.0032)		8081B		1	10/25/19 19:22	C9J0484	CJ92110
Toxaphene	ND (0.161)		8081B		1	10/25/19 19:22	C9J0484	CJ92110

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*75 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MJV
Prepared: 10/21/19 16:15

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1221	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1232	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1242	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1248	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1254	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1260	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1262	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106
Aroclor 1268	ND (0.07)		8082A		1	10/22/19 17:55		CJ92106

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*78 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*87 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 20.8
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: CAD
Prepared: 10/21/19 11:07

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (44.8)		8100M		1	10/22/19 6:22	C9J0374	CJ92112

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*88 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
1,2,4-Trichlorobenzene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
1,2-Dichlorobenzene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
1,3-Dichlorobenzene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
1,4-Dichlorobenzene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,3,4,6-Tetrachlorophenol	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,4,5-Trichlorophenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,4,6-Trichlorophenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,4-Dichlorophenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,4-Dimethylphenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,4-Dinitrophenol	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,4-Dinitrotoluene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2,6-Dinitrotoluene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2-Chloronaphthalene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2-Chlorophenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2-Methylphenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2-Nitroaniline	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
2-Nitrophenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
3,3´-Dichlorobenzidine	ND (0.863)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
3+4-Methylphenol	ND (0.863)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
3-Nitroaniline	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4,6-Dinitro-2-Methylphenol	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4-Bromophenyl-phenylether	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4-Chloro-3-Methylphenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4-Chloroaniline	ND (0.863)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4-Chloro-phenyl-phenyl ether	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4-Nitroaniline	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
4-Nitrophenol	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Acetophenone	ND (0.863)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Aniline	ND (0.863)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Azobenzene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Benzoic Acid	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
bis(2-Chloroethoxy)methane	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
bis(2-Chloroethyl)ether	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
bis(2-chloroisopropyl)Ether	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
bis(2-Ethylhexyl)phthalate	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Butylbenzylphthalate	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Carbazole	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Dibenzofuran	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Diethylphthalate	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Dimethylphthalate	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Di-n-butylphthalate	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Di-n-octylphthalate	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Hexachlorobenzene	ND (0.216)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Hexachlorobutadiene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Hexachlorocyclopentadiene	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Hexachloroethane	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Isophorone	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Nitrobenzene	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
N-Nitrosodimethylamine	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
N-Nitroso-Di-n-Propylamine	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
N-nitrosodiphenylamine	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Pentachlorophenol	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Phenol	ND (0.431)		8270D		1	10/22/19 19:22	C9J0384	CJ92111
Pyridine	ND (2.16)		8270D		1	10/22/19 19:22	C9J0384	CJ92111

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichlorobenzene-d4	*64 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*69 %*		*30-130*
Surrogate: 2-Chlorophenol-d4	*70 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*67 %*		*30-130*
Surrogate: 2-Fluorophenol	*70 %*		*30-130*
Surrogate: Nitrobenzene-d5	*65 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: TAJ
Prepared: 10/21/19 10:48

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Surrogate: Phenol-d6		*67 %*		*30-130*				
Surrogate: p-Terphenyl-d14		*84 %*		*30-130*				

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 6-18in
Date Sampled: 10/18/19 11:17
Percent Solids: 80
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-06
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: IBM
Prepared: 10/21/19 10:48

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Acenaphthene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Acenaphthylene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Anthracene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Benzo(a)anthracene	**0.028** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Benzo(a)pyrene	**0.026** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Benzo(b)fluoranthene	**0.034** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Benzo(g,h,i)perylene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Benzo(k)fluoranthene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Chrysene	**0.031** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Dibenzo(a,h)Anthracene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Fluoranthene	**0.058** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Fluorene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Indeno(1,2,3-cd)Pyrene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Naphthalene	ND (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Phenanthrene	**0.030** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111
Pyrene	**0.054** (0.022)		8270D SIM		1	10/24/19 18:54	C9J0548	CJ92111

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/18/19 08:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-07
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,1,1-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,1,2-Trichloroethane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,1-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,1-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,1-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2,3-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2,3-Trichloropropane	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2,4-Trichlorobenzene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2-Dibromo-3-Chloropropane	ND (1.00)	0.200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2-Dibromoethane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2-Dichloroethane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,2-Dichloropropane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,3-Dichlorobenzene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1,4-Dioxane - Screen	ND (40.0)	38.0	8260B		1	10/23/19 12:36	C9J0437	CJ92327
1-Chlorohexane	ND (0.200)	0.0800	8260B		1	10/23/19 12:36	C9J0437	CJ92327
2,2-Dichloropropane	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
2-Butanone	ND (1.00)	0.680	8260B		1	10/23/19 12:36	C9J0437	CJ92327
2-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
2-Hexanone	ND (1.00)	0.300	8260B		1	10/23/19 12:36	C9J0437	CJ92327
4-Chlorotoluene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
4-Methyl-2-Pentanone	ND (1.00)	0.320	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Acetone	ND (1.00)	0.540	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Benzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Bromobenzene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/18/19 08:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-07
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Bromoform	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Bromomethane	ND (0.200)	0.0800	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Chlorobenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Chloroethane	ND (0.200)	0.0800	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Chloroform	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Chloromethane	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
cis-1,2-Dichloroethene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
cis-1,3-Dichloropropene	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Dibromochloromethane	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Dibromomethane	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Dichlorodifluoromethane	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Diethyl Ether	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Di-isopropyl ether	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Ethylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Hexachlorobutadiene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Methyl tert-Butyl Ether	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Methylene Chloride	ND (0.400)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Naphthalene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
n-Propylbenzene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Styrene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Tertiary-amyl methyl ether	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Tetrachloroethene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Tetrahydrofuran	ND (1.00)	0.320	8260B		1	10/23/19 12:36	C9J0437	CJ92327

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/18/19 08:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J0646
ESS Laboratory Sample ID: 19J0646-07
Sample Matrix: Sediment
Units: mg/kg wet
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
trans-1,2-Dichloroethene	ND (0.200)	0.0600	8260B		1	10/23/19 12:36	C9J0437	CJ92327
trans-1,3-Dichloropropene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Trichloroethene	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Trichlorofluoromethane	ND (0.200)	0.0800	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Vinyl Acetate	ND (0.200)	0.100	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Vinyl Chloride	ND (0.200)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Xylene O	ND (0.200)	0.0200	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Xylene P,M	ND (0.400)	0.0400	8260B		1	10/23/19 12:36	C9J0437	CJ92327
Xylenes (Total)	ND (0.400)		8260B		1	10/23/19 12:36		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*89 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*83 %*		*70-130*
Surrogate: Dibromofluoromethane	*88 %*		*70-130*
Surrogate: Toluene-d8	*86 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ92155 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Cobalt	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
Blank										
Thallium	ND	0.50	mg/kg wet							
LCS										
Antimony	36.5	14.7	mg/kg wet	51.30		71	40-160			
Arsenic	178	7.35	mg/kg wet	202.0		88	80-120			
Barium	309	7.35	mg/kg wet	343.0		90	80-120			
Beryllium	44.7	0.32	mg/kg wet	52.10		86	80-120			
Cadmium	118	1.47	mg/kg wet	149.0		80	80-120			
Chromium	157	2.94	mg/kg wet	182.0		86	80-120			
Cobalt	144	2.94	mg/kg wet	171.0		84	80-120			
Copper	193	7.35	mg/kg wet	225.0		86	80-120			
Lead	291	14.7	mg/kg wet	333.0		87	80-120			
Nickel	145	7.35	mg/kg wet	167.0		87	80-120			
Selenium	151	14.7	mg/kg wet	169.0		90	80-120			
Silver	42.7	1.47	mg/kg wet	48.90		87	80-120			
Thallium	64.6	14.7	mg/kg wet	82.30		78	62-139			
Vanadium	200	2.94	mg/kg wet	227.0		88	80-120			
Zinc	381	7.35	mg/kg wet	459.0		83	80-120			
LCS										
Thallium	76.5	7.35	mg/kg wet	82.30		93	80-120			
LCS Dup										
Antimony	35.2	13.9	mg/kg wet	51.30		69	40-160	4	20	
Arsenic	167	6.94	mg/kg wet	202.0		83	80-120	6	20	
Barium	294	6.94	mg/kg wet	343.0		86	80-120	5	20	
Beryllium	43.0	0.31	mg/kg wet	52.10		82	80-120	4	20	
Cadmium	114	1.39	mg/kg wet	149.0		77	80-120	4	20	B-
Chromium	152	2.78	mg/kg wet	182.0		83	80-120	4	20	
Cobalt	139	2.78	mg/kg wet	171.0		81	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ92155 - 3050B										
Copper	187	6.94	mg/kg wet	225.0		83	80-120	3	20	
Lead	279	13.9	mg/kg wet	333.0		84	80-120	4	20	
Nickel	140	6.94	mg/kg wet	167.0		84	80-120	4	20	
Selenium	142	13.9	mg/kg wet	169.0		84	80-120	6	20	
Silver	41.2	1.39	mg/kg wet	48.90		84	80-120	3	20	
Thallium	61.0	13.9	mg/kg wet	82.30		74	62-139	6	20	
Vanadium	192	2.78	mg/kg wet	227.0		85	80-120	4	20	
Zinc	366	6.94	mg/kg wet	459.0		80	80-120	4	20	
LCS Dup										
Thallium	74.1	6.94	mg/kg wet	82.30		90	80-120	3	30	
Batch CJ92156 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	2.57	0.261	mg/kg wet	3.120		82	80-120			
LCS Dup										
Mercury	3.88	0.319	mg/kg wet	3.120		124	80-120	41	20	D+, B+
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*4.21*		mg/kg wet	*5.000*		*84*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*3.85*		mg/kg wet	*5.000*		*77*	*70-130*			
Surrogate: Dibromofluoromethane	*4.49*		mg/kg wet	*5.000*		*90*	*70-130*			
Surrogate: Toluene-d8	*3.94*		mg/kg wet	*5.000*		*79*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.63	0.200	mg/kg wet	2.000		82	70-130			
1,1,1-Trichloroethane	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,1,2,2-Tetrachloroethane	1.71	0.200	mg/kg wet	2.000		85	70-130			
1,1,2-Trichloroethane	1.88	0.200	mg/kg wet	2.000		94	70-130			
1,1-Dichloroethane	1.93	0.200	mg/kg wet	2.000		97	70-130			
1,1-Dichloroethene	2.21	0.200	mg/kg wet	2.000		111	70-130			
1,1-Dichloropropene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,2,3-Trichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,2,3-Trichloropropane	1.75	0.200	mg/kg wet	2.000		87	70-130			
1,2,4-Trichlorobenzene	1.76	0.200	mg/kg wet	2.000		88	70-130			
1,2,4-Trimethylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130			
1,2-Dibromo-3-Chloropropane	1.99	1.00	mg/kg wet	2.000		99	70-130			
1,2-Dibromoethane	1.73	0.200	mg/kg wet	2.000		86	70-130			
1,2-Dichlorobenzene	1.85	0.200	mg/kg wet	2.000		93	70-130			
1,2-Dichloroethane	1.95	0.200	mg/kg wet	2.000		98	70-130			
1,2-Dichloropropane	1.83	0.200	mg/kg wet	2.000		92	70-130			
1,3,5-Trimethylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,3-Dichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,3-Dichloropropane	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,4-Dichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,4-Dioxane - Screen	73.7	40.0	mg/kg wet	40.00		184	44-241			
1-Chlorohexane	1.86	0.200	mg/kg wet	2.000		93	70-130			
2,2-Dichloropropane	2.17	0.200	mg/kg wet	2.000		108	70-130			
2-Butanone	8.66	1.00	mg/kg wet	10.00		87	70-130			
2-Chlorotoluene	1.88	0.200	mg/kg wet	2.000		94	70-130			
2-Hexanone	9.25	1.00	mg/kg wet	10.00		92	70-130			
4-Chlorotoluene	1.82	0.200	mg/kg wet	2.000		91	70-130			
4-Isopropyltoluene	1.92	0.200	mg/kg wet	2.000		96	70-130			
4-Methyl-2-Pentanone	7.94	1.00	mg/kg wet	10.00		79	70-130			
Acetone	9.32	1.00	mg/kg wet	10.00		93	70-130			
Benzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
Bromobenzene	1.85	0.200	mg/kg wet	2.000		92	70-130			
Bromochloromethane	1.86	0.200	mg/kg wet	2.000		93	70-130			
Bromodichloromethane	1.65	0.200	mg/kg wet	2.000		83	70-130			
Bromoform	1.81	0.200	mg/kg wet	2.000		91	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Bromomethane	1.72	0.200	mg/kg wet	2.000		86	70-130			
Carbon Disulfide	1.92	0.200	mg/kg wet	2.000		96	70-130			
Carbon Tetrachloride	2.10	0.200	mg/kg wet	2.000		105	70-130			
Chlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Chloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130			
Chloroform	2.06	0.200	mg/kg wet	2.000		103	70-130			
Chloromethane	1.65	0.200	mg/kg wet	2.000		82	70-130			
cis-1,2-Dichloroethene	2.13	0.200	mg/kg wet	2.000		107	70-130			
cis-1,3-Dichloropropene	1.62	0.200	mg/kg wet	2.000		81	70-130			
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		93	70-130			
Dibromomethane	1.94	0.200	mg/kg wet	2.000		97	70-130			
Dichlorodifluoromethane	1.52	0.200	mg/kg wet	2.000		76	70-130			
Diethyl Ether	1.84	0.200	mg/kg wet	2.000		92	70-130			
Di-isopropyl ether	1.85	0.200	mg/kg wet	2.000		92	70-130			
Ethyl tertiary-butyl ether	1.76	0.200	mg/kg wet	2.000		88	70-130			
Ethylbenzene	1.84	0.200	mg/kg wet	2.000		92	70-130			
Hexachlorobutadiene	1.83	0.200	mg/kg wet	2.000		91	70-130			
Isopropylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Methyl tert-Butyl Ether	2.02	0.200	mg/kg wet	2.000		101	70-130			
Methylene Chloride	1.86	0.400	mg/kg wet	2.000		93	70-130			
Naphthalene	1.59	0.200	mg/kg wet	2.000		80	70-130			
n-Butylbenzene	1.99	0.200	mg/kg wet	2.000		99	70-130			
n-Propylbenzene	1.86	0.200	mg/kg wet	2.000		93	70-130			
sec-Butylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Styrene	1.61	0.200	mg/kg wet	2.000		80	70-130			
tert-Butylbenzene	1.84	0.200	mg/kg wet	2.000		92	70-130			
Tertiary-amyl methyl ether	1.76	0.200	mg/kg wet	2.000		88	70-130			
Tetrachloroethene	1.93	0.200	mg/kg wet	2.000		96	70-130			
Tetrahydrofuran	1.54	1.00	mg/kg wet	2.000		77	70-130			
Toluene	1.95	0.200	mg/kg wet	2.000		97	70-130			
trans-1,2-Dichloroethene	2.17	0.200	mg/kg wet	2.000		108	70-130			
trans-1,3-Dichloropropene	1.77	0.200	mg/kg wet	2.000		88	70-130			
Trichloroethene	2.03	0.200	mg/kg wet	2.000		101	70-130			
Trichlorofluoromethane	2.17	0.200	mg/kg wet	2.000		109	70-130			
Vinyl Acetate	1.64	0.200	mg/kg wet	2.000		82	70-130			
Vinyl Chloride	1.85	0.200	mg/kg wet	2.000		93	70-130			
Xylene O	1.83	0.200	mg/kg wet	2.000		92	70-130			
Xylene P,M	3.83	0.400	mg/kg wet	4.000		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.49*		mg/kg wet	*5.000*		*110*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.11*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*5.47*		mg/kg wet	*5.000*		*109*	*70-130*			
Surrogate: Toluene-d8	*4.98*		mg/kg wet	*5.000*		*100*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.70	0.200	mg/kg wet	2.000		85	70-130	4	25	
1,1,1-Trichloroethane	1.95	0.200	mg/kg wet	2.000		97	70-130	0.1	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
1,1,2,2-Tetrachloroethane	1.84	0.200	mg/kg wet	2.000		92	70-130	8	25	
1,1,2-Trichloroethane	1.95	0.200	mg/kg wet	2.000		98	70-130	4	25	
1,1-Dichloroethane	2.00	0.200	mg/kg wet	2.000		100	70-130	4	25	
1,1-Dichloroethene	2.20	0.200	mg/kg wet	2.000		110	70-130	0.6	25	
1,1-Dichloropropene	2.00	0.200	mg/kg wet	2.000		100	70-130	0.7	25	
1,2,3-Trichlorobenzene	1.76	0.200	mg/kg wet	2.000		88	70-130	3	25	
1,2,3-Trichloropropane	1.81	0.200	mg/kg wet	2.000		90	70-130	3	25	
1,2,4-Trichlorobenzene	1.85	0.200	mg/kg wet	2.000		92	70-130	5	25	
1,2,4-Trimethylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	
1,2-Dibromo-3-Chloropropane	1.95	1.00	mg/kg wet	2.000		98	70-130	2	25	
1,2-Dibromoethane	1.72	0.200	mg/kg wet	2.000		86	70-130	0.5	25	
1,2-Dichlorobenzene	1.84	0.200	mg/kg wet	2.000		92	70-130	0.8	25	
1,2-Dichloroethane	1.95	0.200	mg/kg wet	2.000		98	70-130	0.2	25	
1,2-Dichloropropane	1.88	0.200	mg/kg wet	2.000		94	70-130	2	25	
1,3,5-Trimethylbenzene	1.89	0.200	mg/kg wet	2.000		95	70-130	0.3	25	
1,3-Dichlorobenzene	1.87	0.200	mg/kg wet	2.000		93	70-130	3	25	
1,3-Dichloropropane	1.87	0.200	mg/kg wet	2.000		93	70-130	0.6	25	
1,4-Dichlorobenzene	1.83	0.200	mg/kg wet	2.000		91	70-130	2	25	
1,4-Dioxane - Screen	52.0	40.0	mg/kg wet	40.00		130	44-241	34	200	
1-Chlorohexane	1.90	0.200	mg/kg wet	2.000		95	70-130	2	25	
2,2-Dichloropropane	2.16	0.200	mg/kg wet	2.000		108	70-130	0.4	25	
2-Butanone	8.82	1.00	mg/kg wet	10.00		88	70-130	2	25	
2-Chlorotoluene	1.91	0.200	mg/kg wet	2.000		96	70-130	2	25	
2-Hexanone	9.62	1.00	mg/kg wet	10.00		96	70-130	4	25	
4-Chlorotoluene	1.96	0.200	mg/kg wet	2.000		98	70-130	8	25	
4-Isopropyltoluene	1.94	0.200	mg/kg wet	2.000		97	70-130	0.9	25	
4-Methyl-2-Pentanone	7.95	1.00	mg/kg wet	10.00		80	70-130	0.1	25	
Acetone	8.66	1.00	mg/kg wet	10.00		87	70-130	7	25	
Benzene	2.07	0.200	mg/kg wet	2.000		103	70-130	4	25	
Bromobenzene	1.82	0.200	mg/kg wet	2.000		91	70-130	1	25	
Bromochloromethane	1.99	0.200	mg/kg wet	2.000		99	70-130	7	25	
Bromodichloromethane	1.73	0.200	mg/kg wet	2.000		87	70-130	5	25	
Bromoform	1.88	0.200	mg/kg wet	2.000		94	70-130	4	25	
Bromomethane	1.75	0.200	mg/kg wet	2.000		87	70-130	2	25	
Carbon Disulfide	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Carbon Tetrachloride	2.07	0.200	mg/kg wet	2.000		103	70-130	2	25	
Chlorobenzene	1.87	0.200	mg/kg wet	2.000		94	70-130	2	25	
Chloroethane	1.69	0.200	mg/kg wet	2.000		84	70-130	0.9	25	
Chloroform	2.18	0.200	mg/kg wet	2.000		109	70-130	6	25	
Chloromethane	1.66	0.200	mg/kg wet	2.000		83	70-130	1	25	
cis-1,2-Dichloroethene	2.09	0.200	mg/kg wet	2.000		104	70-130	2	25	
cis-1,3-Dichloropropene	1.71	0.200	mg/kg wet	2.000		85	70-130	5	25	
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		94	70-130	0.4	25	
Dibromomethane	1.99	0.200	mg/kg wet	2.000		100	70-130	3	25	
Dichlorodifluoromethane	1.42	0.200	mg/kg wet	2.000		71	70-130	7	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92241 - 5035										
Diethyl Ether	1.98	0.200	mg/kg wet	2.000		99	70-130	8	25	
Di-isopropyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130	5	25	
Ethyl tertiary-butyl ether	1.80	0.200	mg/kg wet	2.000		90	70-130	3	25	
Ethylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	7	25	
Hexachlorobutadiene	1.74	0.200	mg/kg wet	2.000		87	70-130	5	25	
Isopropylbenzene	1.97	0.200	mg/kg wet	2.000		99	70-130	3	25	
Methyl tert-Butyl Ether	2.09	0.200	mg/kg wet	2.000		104	70-130	3	25	
Methylene Chloride	1.88	0.400	mg/kg wet	2.000		94	70-130	0.9	25	
Naphthalene	1.60	0.200	mg/kg wet	2.000		80	70-130	0.3	25	
n-Butylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	1	25	
n-Propylbenzene	1.93	0.200	mg/kg wet	2.000		96	70-130	4	25	
sec-Butylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	3	25	
Styrene	1.67	0.200	mg/kg wet	2.000		83	70-130	4	25	
tert-Butylbenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	2	25	
Tertiary-amyl methyl ether	1.87	0.200	mg/kg wet	2.000		93	70-130	6	25	
Tetrachloroethene	1.87	0.200	mg/kg wet	2.000		94	70-130	3	25	
Tetrahydrofuran	1.70	1.00	mg/kg wet	2.000		85	70-130	10	25	
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130	3	25	
trans-1,2-Dichloroethene	2.16	0.200	mg/kg wet	2.000		108	70-130	0.3	25	
trans-1,3-Dichloropropene	1.81	0.200	mg/kg wet	2.000		90	70-130	2	25	
Trichloroethene	2.06	0.200	mg/kg wet	2.000		103	70-130	2	25	
Trichlorofluoromethane	2.02	0.200	mg/kg wet	2.000		101	70-130	8	25	
Vinyl Acetate	1.70	0.200	mg/kg wet	2.000		85	70-130	4	25	
Vinyl Chloride	1.82	0.200	mg/kg wet	2.000		91	70-130	2	25	
Xylene O	1.97	0.200	mg/kg wet	2.000		99	70-130	7	25	
Xylene P,M	3.88	0.400	mg/kg wet	4.000		97	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*5.33*		mg/kg wet	*5.000*		*107*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.09*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*5.36*		mg/kg wet	*5.000*		*107*	*70-130*			
Surrogate: Toluene-d8	*4.97*		mg/kg wet	*5.000*		*99*	*70-130*			
Batch CJ92327 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92327 - 5035										
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92327 - 5035										
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*3.81*		mg/kg wet	*5.000*		*76*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*3.83*		mg/kg wet	*5.000*		*77*	*70-130*			
Surrogate: Dibromofluoromethane	*3.88*		mg/kg wet	*5.000*		*78*	*70-130*			
Surrogate: Toluene-d8	*3.97*		mg/kg wet	*5.000*		*79*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.58	0.200	mg/kg wet	2.000		79	70-130			
1,1,1-Trichloroethane	1.62	0.200	mg/kg wet	2.000		81	70-130			
1,1,2,2-Tetrachloroethane	1.65	0.200	mg/kg wet	2.000		82	70-130			
1,1,2-Trichloroethane	1.62	0.200	mg/kg wet	2.000		81	70-130			
1,1-Dichloroethane	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,1-Dichloroethene	1.91	0.200	mg/kg wet	2.000		96	70-130			
1,1-Dichloropropene	1.83	0.200	mg/kg wet	2.000		91	70-130			
1,2,3-Trichlorobenzene	1.69	0.200	mg/kg wet	2.000		85	70-130			
1,2,3-Trichloropropane	1.72	0.200	mg/kg wet	2.000		86	70-130			
1,2,4-Trichlorobenzene	1.83	0.200	mg/kg wet	2.000		91	70-130			
1,2,4-Trimethylbenzene	1.93	0.200	mg/kg wet	2.000		96	70-130			
1,2-Dibromo-3-Chloropropane	1.64	1.00	mg/kg wet	2.000		82	70-130			
1,2-Dibromoethane	1.49	0.200	mg/kg wet	2.000		75	70-130			
1,2-Dichlorobenzene	1.79	0.200	mg/kg wet	2.000		90	70-130			
1,2-Dichloroethane	1.66	0.200	mg/kg wet	2.000		83	70-130			
1,2-Dichloropropane	1.91	0.200	mg/kg wet	2.000		96	70-130			
1,3,5-Trimethylbenzene	1.81	0.200	mg/kg wet	2.000		90	70-130			
1,3-Dichlorobenzene	1.71	0.200	mg/kg wet	2.000		86	70-130			
1,3-Dichloropropane	1.77	0.200	mg/kg wet	2.000		88	70-130			
1,4-Dichlorobenzene	1.68	0.200	mg/kg wet	2.000		84	70-130			
1,4-Dioxane - Screen	58.1	40.0	mg/kg wet	40.00		145	44-241			
1-Chlorohexane	1.85	0.200	mg/kg wet	2.000		93	70-130			
2,2-Dichloropropane	1.81	0.200	mg/kg wet	2.000		90	70-130			
2-Butanone	8.40	1.00	mg/kg wet	10.00		84	70-130			
2-Chlorotoluene	1.78	0.200	mg/kg wet	2.000		89	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92327 - 5035										
2-Hexanone	9.39	1.00	mg/kg wet	10.00		94	70-130			
4-Chlorotoluene	1.82	0.200	mg/kg wet	2.000		91	70-130			
4-Isopropyltoluene	1.83	0.200	mg/kg wet	2.000		92	70-130			
4-Methyl-2-Pentanone	7.76	1.00	mg/kg wet	10.00		78	70-130			
Acetone	7.92	1.00	mg/kg wet	10.00		79	70-130			
Benzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
Bromobenzene	1.76	0.200	mg/kg wet	2.000		88	70-130			
Bromochloromethane	1.61	0.200	mg/kg wet	2.000		80	70-130			
Bromodichloromethane	1.49	0.200	mg/kg wet	2.000		75	70-130			
Bromoform	1.70	0.200	mg/kg wet	2.000		85	70-130			
Bromomethane	1.50	0.200	mg/kg wet	2.000		75	70-130			
Carbon Disulfide	1.77	0.200	mg/kg wet	2.000		88	70-130			
Carbon Tetrachloride	1.87	0.200	mg/kg wet	2.000		93	70-130			
Chlorobenzene	1.68	0.200	mg/kg wet	2.000		84	70-130			
Chloroethane	1.66	0.200	mg/kg wet	2.000		83	70-130			
Chloroform	1.75	0.200	mg/kg wet	2.000		88	70-130			
Chloromethane	1.57	0.200	mg/kg wet	2.000		78	70-130			
cis-1,2-Dichloroethene	1.76	0.200	mg/kg wet	2.000		88	70-130			
cis-1,3-Dichloropropene	1.54	0.200	mg/kg wet	2.000		77	70-130			
Dibromochloromethane	1.74	0.200	mg/kg wet	2.000		87	70-130			
Dibromomethane	1.63	0.200	mg/kg wet	2.000		81	70-130			
Dichlorodifluoromethane	1.18	0.200	mg/kg wet	2.000		59	70-130			B-
Diethyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Di-isopropyl ether	2.01	0.200	mg/kg wet	2.000		100	70-130			
Ethyl tertiary-butyl ether	1.81	0.200	mg/kg wet	2.000		90	70-130			
Ethylbenzene	1.89	0.200	mg/kg wet	2.000		94	70-130			
Hexachlorobutadiene	1.86	0.200	mg/kg wet	2.000		93	70-130			
Isopropylbenzene	1.88	0.200	mg/kg wet	2.000		94	70-130			
Methyl tert-Butyl Ether	1.79	0.200	mg/kg wet	2.000		90	70-130			
Methylene Chloride	1.63	0.400	mg/kg wet	2.000		81	70-130			
Naphthalene	1.47	0.200	mg/kg wet	2.000		73	70-130			
n-Butylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130			
n-Propylbenzene	1.91	0.200	mg/kg wet	2.000		96	70-130			
sec-Butylbenzene	1.86	0.200	mg/kg wet	2.000		93	70-130			
Styrene	1.57	0.200	mg/kg wet	2.000		78	70-130			
tert-Butylbenzene	1.74	0.200	mg/kg wet	2.000		87	70-130			
Tertiary-amyl methyl ether	1.72	0.200	mg/kg wet	2.000		86	70-130			
Tetrachloroethene	1.86	0.200	mg/kg wet	2.000		93	70-130			
Tetrahydrofuran	1.61	1.00	mg/kg wet	2.000		80	70-130			
Toluene	1.67	0.200	mg/kg wet	2.000		83	70-130			
trans-1,2-Dichloroethene	1.75	0.200	mg/kg wet	2.000		88	70-130			
trans-1,3-Dichloropropene	1.64	0.200	mg/kg wet	2.000		82	70-130			
Trichloroethene	1.73	0.200	mg/kg wet	2.000		86	70-130			
Trichlorofluoromethane	1.84	0.200	mg/kg wet	2.000		92	70-130			
Vinyl Acetate	1.75	0.200	mg/kg wet	2.000		88	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92327 - 5035										
Vinyl Chloride	1.67	0.200	mg/kg wet	2.000		84	70-130			
Xylene O	1.76	0.200	mg/kg wet	2.000		88	70-130			
Xylene P,M	3.60	0.400	mg/kg wet	4.000		90	70-130			
Surrogate: 1,2-Dichloroethane-d4	*4.90*		mg/kg wet	*5.000*		*98*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.84*		mg/kg wet	*5.000*		*97*	*70-130*			
Surrogate: Dibromofluoromethane	*4.68*		mg/kg wet	*5.000*		*94*	*70-130*			
Surrogate: Toluene-d8	*5.08*		mg/kg wet	*5.000*		*102*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.71	0.200	mg/kg wet	2.000		85	70-130	8	25	
1,1,1-Trichloroethane	1.75	0.200	mg/kg wet	2.000		88	70-130	8	25	
1,1,2,2-Tetrachloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	12	25	
1,1,2-Trichloroethane	1.76	0.200	mg/kg wet	2.000		88	70-130	8	25	
1,1-Dichloroethane	1.99	0.200	mg/kg wet	2.000		100	70-130	0.7	25	
1,1-Dichloroethene	2.16	0.200	mg/kg wet	2.000		108	70-130	12	25	
1,1-Dichloropropene	1.99	0.200	mg/kg wet	2.000		99	70-130	8	25	
1,2,3-Trichlorobenzene	1.91	0.200	mg/kg wet	2.000		96	70-130	12	25	
1,2,3-Trichloropropane	1.80	0.200	mg/kg wet	2.000		90	70-130	5	25	
1,2,4-Trichlorobenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	6	25	
1,2,4-Trimethylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130	8	25	
1,2-Dibromo-3-Chloropropane	1.98	1.00	mg/kg wet	2.000		99	70-130	19	25	
1,2-Dibromoethane	1.68	0.200	mg/kg wet	2.000		84	70-130	12	25	
1,2-Dichlorobenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	8	25	
1,2-Dichloroethane	1.87	0.200	mg/kg wet	2.000		93	70-130	12	25	
1,2-Dichloropropane	2.04	0.200	mg/kg wet	2.000		102	70-130	7	25	
1,3,5-Trimethylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130	10	25	
1,3-Dichlorobenzene	1.93	0.200	mg/kg wet	2.000		96	70-130	12	25	
1,3-Dichloropropane	1.95	0.200	mg/kg wet	2.000		97	70-130	10	25	
1,4-Dichlorobenzene	1.89	0.200	mg/kg wet	2.000		94	70-130	12	25	
1,4-Dioxane - Screen	48.7	40.0	mg/kg wet	40.00		122	44-241	18	200	
1-Chlorohexane	2.06	0.200	mg/kg wet	2.000		103	70-130	11	25	
2,2-Dichloropropane	1.97	0.200	mg/kg wet	2.000		98	70-130	8	25	
2-Butanone	9.16	1.00	mg/kg wet	10.00		92	70-130	9	25	
2-Chlorotoluene	2.03	0.200	mg/kg wet	2.000		102	70-130	13	25	
2-Hexanone	10.4	1.00	mg/kg wet	10.00		104	70-130	10	25	
4-Chlorotoluene	2.00	0.200	mg/kg wet	2.000		100	70-130	10	25	
4-Isopropyltoluene	1.99	0.200	mg/kg wet	2.000		99	70-130	8	25	
4-Methyl-2-Pentanone	8.95	1.00	mg/kg wet	10.00		90	70-130	14	25	
Acetone	8.78	1.00	mg/kg wet	10.00		88	70-130	10	25	
Benzene	2.00	0.200	mg/kg wet	2.000		100	70-130	5	25	
Bromobenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	10	25	
Bromochloromethane	1.76	0.200	mg/kg wet	2.000		88	70-130	9	25	
Bromodichloromethane	1.55	0.200	mg/kg wet	2.000		78	70-130	4	25	
Bromoform	1.96	0.200	mg/kg wet	2.000		98	70-130	14	25	
Bromomethane	1.56	0.200	mg/kg wet	2.000		78	70-130	4	25	
Carbon Disulfide	1.95	0.200	mg/kg wet	2.000		97	70-130	10	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ92327 - 5035										
Carbon Tetrachloride	1.96	0.200	mg/kg wet	2.000		98	70-130	5	25	
Chlorobenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	11	25	
Chloroethane	1.88	0.200	mg/kg wet	2.000		94	70-130	13	25	
Chloroform	1.88	0.200	mg/kg wet	2.000		94	70-130	7	25	
Chloromethane	1.63	0.200	mg/kg wet	2.000		81	70-130	4	25	
cis-1,2-Dichloroethene	1.87	0.200	mg/kg wet	2.000		94	70-130	6	25	
cis-1,3-Dichloropropene	1.72	0.200	mg/kg wet	2.000		86	70-130	11	25	
Dibromochloromethane	1.81	0.200	mg/kg wet	2.000		91	70-130	4	25	
Dibromomethane	1.71	0.200	mg/kg wet	2.000		86	70-130	5	25	
Dichlorodifluoromethane	1.29	0.200	mg/kg wet	2.000		64	70-130	9	25	B-
Diethyl Ether	2.07	0.200	mg/kg wet	2.000		104	70-130	6	25	
Di-isopropyl ether	2.16	0.200	mg/kg wet	2.000		108	70-130	7	25	
Ethyl tertiary-butyl ether	1.98	0.200	mg/kg wet	2.000		99	70-130	9	25	
Ethylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130	6	25	
Hexachlorobutadiene	2.10	0.200	mg/kg wet	2.000		105	70-130	12	25	
Isopropylbenzene	2.03	0.200	mg/kg wet	2.000		101	70-130	8	25	
Methyl tert-Butyl Ether	2.01	0.200	mg/kg wet	2.000		101	70-130	12	25	
Methylene Chloride	1.80	0.400	mg/kg wet	2.000		90	70-130	10	25	
Naphthalene	1.65	0.200	mg/kg wet	2.000		82	70-130	12	25	
n-Butylbenzene	2.11	0.200	mg/kg wet	2.000		105	70-130	7	25	
n-Propylbenzene	2.05	0.200	mg/kg wet	2.000		103	70-130	7	25	
sec-Butylbenzene	2.05	0.200	mg/kg wet	2.000		103	70-130	10	25	
Styrene	1.68	0.200	mg/kg wet	2.000		84	70-130	7	25	
tert-Butylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	13	25	
Tertiary-amyl methyl ether	1.89	0.200	mg/kg wet	2.000		94	70-130	9	25	
Tetrachloroethene	1.99	0.200	mg/kg wet	2.000		100	70-130	7	25	
Tetrahydrofuran	1.77	1.00	mg/kg wet	2.000		88	70-130	10	25	
Toluene	1.92	0.200	mg/kg wet	2.000		96	70-130	14	25	
trans-1,2-Dichloroethene	1.92	0.200	mg/kg wet	2.000		96	70-130	9	25	
trans-1,3-Dichloropropene	1.72	0.200	mg/kg wet	2.000		86	70-130	5	25	
Trichloroethene	1.89	0.200	mg/kg wet	2.000		94	70-130	9	25	
Trichlorofluoromethane	1.90	0.200	mg/kg wet	2.000		95	70-130	3	25	
Vinyl Acetate	1.92	0.200	mg/kg wet	2.000		96	70-130	9	25	
Vinyl Chloride	1.72	0.200	mg/kg wet	2.000		86	70-130	3	25	
Xylene O	1.93	0.200	mg/kg wet	2.000		97	70-130	10	25	
Xylene P,M	3.91	0.400	mg/kg wet	4.000		98	70-130	8	25	
Surrogate: 1,2-Dichloroethane-d4	*4.70*		mg/kg wet	*5.000*		*94*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.95*		mg/kg wet	*5.000*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*4.78*		mg/kg wet	*5.000*		*96*	*70-130*			
Surrogate: Toluene-d8	*5.03*		mg/kg wet	*5.000*		*101*	*70-130*			
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
Chlordane (Total)	ND	0.0300	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0300	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Toxaphene	ND	0.125	mg/kg wet							
Toxaphene [2C]	ND	0.125	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
Surrogate: Decachlorobiphenyl	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
LCS										
4,4´-DDD	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
4,4´-DDD [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
4,4´-DDE	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
4,4´-DDE [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
4,4´-DDT	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
4,4´-DDT [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
Aldrin	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Aldrin [2C]	0.0103	0.0025	mg/kg wet	0.01250		82	40-140			
alpha-BHC	0.0102	0.0025	mg/kg wet	0.01250		82	40-140			
alpha-BHC [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140			
alpha-Chlordane	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
alpha-Chlordane [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
beta-BHC	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
beta-BHC [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
delta-BHC	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
delta-BHC [2C]	0.0098	0.0025	mg/kg wet	0.01250		79	40-140			
Dieldrin	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Dieldrin [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140			
Endosulfan I	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endosulfan I [2C]	0.0102	0.0025	mg/kg wet	0.01250		81	40-140			
Endosulfan II	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endosulfan II [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140			
Endosulfan Sulfate	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Endosulfan Sulfate [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Endrin	0.0104	0.0025	mg/kg wet	0.01250		83	40-140			
Endrin [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Endrin Aldehyde	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Endrin Aldehyde [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Endrin Ketone	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Endrin Ketone [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
gamma-BHC (Lindane)	0.0106	0.0015	mg/kg wet	0.01250		85	40-140			
gamma-BHC (Lindane) [2C]	0.0103	0.0015	mg/kg wet	0.01250		83	40-140			
gamma-Chlordane	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
gamma-Chlordane [2C]	0.0104	0.0025	mg/kg wet	0.01250		84	40-140			
Heptachlor	0.0108	0.0025	mg/kg wet	0.01250		86	40-140			
Heptachlor [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Heptachlor Epoxide	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor Epoxide [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140			
Hexachlorobenzene	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ92110 - 3546										
Hexachlorobenzene [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140			
Methoxychlor	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Methoxychlor [2C]	0.0107	0.0025	mg/kg wet	0.01250		86	40-140			
Surrogate: Decachlorobiphenyl	*0.0108*		mg/kg wet	*0.01250*		*86*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0114*		mg/kg wet	*0.01250*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0102*		mg/kg wet	*0.01250*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0105*		mg/kg wet	*0.01250*		*84*	*30-150*			
LCS Dup										
4,4´-DDD	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	0.3	30	
4,4´-DDD [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	0.9	30	
4,4´-DDE	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	0.7	30	
4,4´-DDE [2C]	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	0.6	30	
4,4´-DDT	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	0.5	30	
4,4´-DDT [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	1	30	
Aldrin	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	3	30	
Aldrin [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	3	30	
alpha-BHC	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	4	30	
alpha-BHC [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	4	30	
alpha-Chlordane	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
alpha-Chlordane [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	2	30	
beta-BHC	0.0109	0.0025	mg/kg wet	0.01250		88	40-140	1	30	
beta-BHC [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
delta-BHC	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.5	30	
delta-BHC [2C]	0.0099	0.0025	mg/kg wet	0.01250		79	40-140	0.4	30	
Dieldrin	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	2	30	
Dieldrin [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	1	30	
Endosulfan I	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	3	30	
Endosulfan I [2C]	0.0103	0.0025	mg/kg wet	0.01250		83	40-140	2	30	
Endosulfan II	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	1	30	
Endosulfan II [2C]	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.4	30	
Endosulfan Sulfate	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	0.7	30	
Endosulfan Sulfate [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	0.5	30	
Endrin	0.0111	0.0025	mg/kg wet	0.01250		88	40-140	7	30	
Endrin [2C]	0.0107	0.0025	mg/kg wet	0.01250		85	40-140	6	30	
Endrin Aldehyde	0.0100	0.0025	mg/kg wet	0.01250		80	40-140	4	30	
Endrin Aldehyde [2C]	0.0101	0.0025	mg/kg wet	0.01250		80	40-140	5	30	
Endrin Ketone	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	1	30	
Endrin Ketone [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140	5	30	
gamma-BHC (Lindane)	0.0109	0.0015	mg/kg wet	0.01250		88	40-140	3	30	
gamma-BHC (Lindane) [2C]	0.0106	0.0015	mg/kg wet	0.01250		85	40-140	3	30	
gamma-Chlordane	0.0109	0.0025	mg/kg wet	0.01250		88	40-140	2	30	
gamma-Chlordane [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	2	30	
Heptachlor	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
Heptachlor [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	3	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92110 - 3546										
Heptachlor Epoxide	0.0118	0.0025	mg/kg wet	0.01250		95	40-140	2	30	
Heptachlor Epoxide [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	2	30	
Hexachlorobenzene	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	4	30	
Hexachlorobenzene [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	4	30	
Methoxychlor	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	2	30	
Methoxychlor [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0115*		mg/kg wet	*0.01250*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0109*		mg/kg wet	*0.01250*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0112*		mg/kg wet	*0.01250*		*90*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ92106 - 3540C										
Blank										
Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0225*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0208*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0161*		mg/kg wet	*0.02500*		*64*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0176*		mg/kg wet	*0.02500*		*71*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		93	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		95	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		94	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		95	40-140			
Surrogate: Decachlorobiphenyl	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ92106 - 3540C										
Surrogate: Decachlorobiphenyl [2C]	*0.0206*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0177*		mg/kg wet	*0.02500*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0177*		mg/kg wet	*0.02500*		*71*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		97	40-140	4	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		95	40-140	0.7	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		99	40-140	5	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		100	40-140	5	30	
Surrogate: Decachlorobiphenyl	*0.0210*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0213*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0180*		mg/kg wet	*0.02500*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0180*		mg/kg wet	*0.02500*		*72*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CJ92112 - 3546										
Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							
Surrogate: O-Terphenyl	*4.70*		mg/kg wet	*5.000*		*94*	*40-140*			
LCS										
Decane (C10)	1.8	0.2	mg/kg wet	2.500		71	40-140			
Docosane (C22)	2.1	0.2	mg/kg wet	2.500		86	40-140			
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500		81	40-140			
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		64	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ92112 - 3546										
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		77	40-140			
Total Petroleum Hydrocarbons	28.9	37.5	mg/kg wet	35.00		83	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Surrogate: O-Terphenyl	*4.61*		mg/kg wet	*5.000*		*92*	*40-140*			
LCS Dup										
Decane (C10)	1.7	0.2	mg/kg wet	2.500		68	40-140	5	25	
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		87	40-140	2	25	
Dodecane (C12)	1.7	0.2	mg/kg wet	2.500		69	40-140	8	25	
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		84	40-140	1	25	
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		88	40-140	2	25	
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500		82	40-140	0.6	25	
Nonadecane (C19)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		64	30-140	0.6	25	
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		87	40-140	2	25	
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		83	40-140	0.2	25	
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		87	40-140	2	25	
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		77	40-140	0.7	25	
Total Petroleum Hydrocarbons	28.9	37.5	mg/kg wet	35.00		83	40-140	0.1	25	
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		89	40-140	2	25	
Surrogate: O-Terphenyl	*4.57*		mg/kg wet	*5.000*		*91*	*40-140*			
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.333	mg/kg wet							
1,2-Dichlorobenzene	ND	0.333	mg/kg wet							
1,3-Dichlorobenzene	ND	0.333	mg/kg wet							
1,4-Dichlorobenzene	ND	0.333	mg/kg wet							
2,3,4,6-Tetrachlorophenol	ND	1.67	mg/kg wet							
2,4,5-Trichlorophenol	ND	0.333	mg/kg wet							
2,4,6-Trichlorophenol	ND	0.333	mg/kg wet							
2,4-Dichlorophenol	ND	0.333	mg/kg wet							
2,4-Dimethylphenol	ND	0.333	mg/kg wet							
2,4-Dinitrophenol	ND	1.67	mg/kg wet							
2,4-Dinitrotoluene	ND	0.333	mg/kg wet							
2,6-Dinitrotoluene	ND	0.333	mg/kg wet							
2-Chloronaphthalene	ND	0.333	mg/kg wet							
2-Chlorophenol	ND	0.333	mg/kg wet							
2-Methylphenol	ND	0.333	mg/kg wet							
2-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
3,3´-Dichlorobenzidine	ND	0.667	mg/kg wet							
3+4-Methylphenol	ND	0.667	mg/kg wet							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	mg/kg wet							
4-Nitrophenol	ND	1.67	mg/kg wet							
Acetophenone	ND	0.667	mg/kg wet							
Aniline	ND	0.667	mg/kg wet							
Azobenzene	ND	0.333	mg/kg wet							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	ND	0.333	mg/kg wet							
bis(2-Chloroethoxy)methane	ND	0.333	mg/kg wet							
bis(2-Chloroethyl)ether	ND	0.333	mg/kg wet							
bis(2-chloroisopropyl)Ether	ND	0.333	mg/kg wet							
bis(2-Ethylhexyl)phthalate	ND	0.333	mg/kg wet							
Butylbenzylphthalate	ND	0.333	mg/kg wet							
Carbazole	ND	0.333	mg/kg wet							
Dibenzofuran	ND	0.333	mg/kg wet							
Diethylphthalate	ND	0.333	mg/kg wet							
Dimethylphthalate	ND	0.333	mg/kg wet							
Di-n-butylphthalate	ND	0.333	mg/kg wet							
Di-n-octylphthalate	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	mg/kg wet							
Hexachloroethane	ND	0.333	mg/kg wet							
Isophorone	ND	0.333	mg/kg wet							
Nitrobenzene	ND	0.333	mg/kg wet							
N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	ND	0.333	mg/kg wet							
Pentachlorophenol	ND	1.67	mg/kg wet							
Phenol	ND	0.333	mg/kg wet							
Pyridine	ND	1.67	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.46*		mg/kg wet	*3.333*		*74*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.96*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.86*		mg/kg wet	*5.000*		*77*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.38*		mg/kg wet	*3.333*		*71*	*30-130*			
Surrogate: 2-Fluorophenol	*4.25*		mg/kg wet	*5.000*		*85*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.41*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: Phenol-d6	*3.93*		mg/kg wet	*5.000*		*79*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.81*		mg/kg wet	*3.333*		*84*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
LCS										
1,1-Biphenyl	2.02	0.333	mg/kg wet	3.333		61	40-140			
1,2,4-Trichlorobenzene	2.00	0.333	mg/kg wet	3.333		60	40-140			
1,2-Dichlorobenzene	1.92	0.333	mg/kg wet	3.333		58	40-140			
1,3-Dichlorobenzene	1.93	0.333	mg/kg wet	3.333		58	40-140			
1,4-Dichlorobenzene	1.85	0.333	mg/kg wet	3.333		55	40-140			
2,3,4,6-Tetrachlorophenol	1.92	1.67	mg/kg wet	3.333		58	30-130			
2,4,5-Trichlorophenol	2.25	0.333	mg/kg wet	3.333		67	30-130			
2,4,6-Trichlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130			
2,4-Dichlorophenol	2.01	0.333	mg/kg wet	3.333		60	30-130			
2,4-Dimethylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130			
2,4-Dinitrophenol	2.09	1.67	mg/kg wet	3.333		63	30-130			
2,4-Dinitrotoluene	2.07	0.333	mg/kg wet	3.333		62	40-140			
2,6-Dinitrotoluene	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Chloronaphthalene	1.99	0.333	mg/kg wet	3.333		60	40-140			
2-Chlorophenol	2.02	0.333	mg/kg wet	3.333		61	30-130			
2-Methylphenol	2.05	0.333	mg/kg wet	3.333		62	30-130			
2-Nitroaniline	1.79	0.333	mg/kg wet	3.333		54	40-140			
2-Nitrophenol	2.03	0.333	mg/kg wet	3.333		61	30-130			
3,3´-Dichlorobenzidine	1.88	0.667	mg/kg wet	3.333		56	40-140			
3+4-Methylphenol	4.27	0.667	mg/kg wet	6.667		64	30-130			
3-Nitroaniline	1.90	0.333	mg/kg wet	3.333		57	40-140			
4,6-Dinitro-2-Methylphenol	2.26	1.67	mg/kg wet	3.333		68	30-130			
4-Bromophenyl-phenylether	1.93	0.333	mg/kg wet	3.333		58	40-140			
4-Chloro-3-Methylphenol	1.96	0.333	mg/kg wet	3.333		59	30-130			
4-Chloroaniline	1.61	0.667	mg/kg wet	3.333		48	40-140			
4-Chloro-phenyl-phenyl ether	2.03	0.333	mg/kg wet	3.333		61	40-140			
4-Nitroaniline	1.79	0.333	mg/kg wet	3.333		54	40-140			
4-Nitrophenol	1.91	1.67	mg/kg wet	3.333		57	30-130			
Acetophenone	1.99	0.667	mg/kg wet	3.333		60	40-140			
Aniline	1.62	0.667	mg/kg wet	3.333		49	40-140			
Azobenzene	1.96	0.333	mg/kg wet	3.333		59	40-140			
Benzoic Acid	2.09	1.67	mg/kg wet	3.333		63	40-140			
Benzyl Alcohol	1.86	0.333	mg/kg wet	3.333		56	40-140			
bis(2-Chloroethoxy)methane	2.02	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Chloroethyl)ether	1.96	0.333	mg/kg wet	3.333		59	40-140			
bis(2-chloroisopropyl)Ether	1.88	0.333	mg/kg wet	3.333		57	40-140			
bis(2-Ethylhexyl)phthalate	2.08	0.333	mg/kg wet	3.333		62	40-140			
Butylbenzylphthalate	2.14	0.333	mg/kg wet	3.333		64	40-140			
Carbazole	1.98	0.333	mg/kg wet	3.333		59	40-140			
Dibenzofuran	2.01	0.333	mg/kg wet	3.333		60	40-140			
Diethylphthalate	2.04	0.333	mg/kg wet	3.333		61	40-140			
Dimethylphthalate	2.13	0.333	mg/kg wet	3.333		64	40-140			
Di-n-butylphthalate	1.93	0.333	mg/kg wet	3.333		58	40-140			
Di-n-octylphthalate	2.03	0.333	mg/kg wet	3.333		61	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
Hexachlorobenzene	1.93	0.167	mg/kg wet	3.333		58	40-140			
Hexachlorobutadiene	2.01	0.333	mg/kg wet	3.333		60	40-140			
Hexachlorocyclopentadiene	1.72	1.67	mg/kg wet	3.333		52	40-140			
Hexachloroethane	1.93	0.333	mg/kg wet	3.333		58	40-140			
Isophorone	1.84	0.333	mg/kg wet	3.333		55	40-140			
Nitrobenzene	2.00	0.333	mg/kg wet	3.333		60	40-140			
N-Nitrosodimethylamine	1.56	0.333	mg/kg wet	3.333		47	40-140			
N-Nitroso-Di-n-Propylamine	1.94	0.333	mg/kg wet	3.333		58	40-140			
N-nitrosodiphenylamine	2.02	0.333	mg/kg wet	3.333		61	40-140			
Pentachlorophenol	2.06	1.67	mg/kg wet	3.333		62	30-130			
Phenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
Pyridine	1.61	1.67	mg/kg wet	3.333		48	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.03*		mg/kg wet	*3.333*		*61*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.23*		mg/kg wet	*5.000*		*65*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.36*		mg/kg wet	*5.000*		*67*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.23*		mg/kg wet	*3.333*		*67*	*30-130*			
Surrogate: 2-Fluorophenol	*3.46*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.44*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.37*		mg/kg wet	*3.333*		*71*	*30-130*			
LCS Dup										
1,1-Biphenyl	2.29	0.333	mg/kg wet	3.333		69	40-140	12	30	
1,2,4-Trichlorobenzene	2.18	0.333	mg/kg wet	3.333		66	40-140	9	30	
1,2-Dichlorobenzene	2.12	0.333	mg/kg wet	3.333		64	40-140	10	30	
1,3-Dichlorobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140	10	30	
1,4-Dichlorobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	10	30	
2,3,4,6-Tetrachlorophenol	2.14	1.67	mg/kg wet	3.333		64	30-130	11	30	
2,4,5-Trichlorophenol	2.54	0.333	mg/kg wet	3.333		76	30-130	12	30	
2,4,6-Trichlorophenol	2.51	0.333	mg/kg wet	3.333		75	30-130	12	30	
2,4-Dichlorophenol	2.23	0.333	mg/kg wet	3.333		67	30-130	10	30	
2,4-Dimethylphenol	2.23	0.333	mg/kg wet	3.333		67	30-130	8	30	
2,4-Dinitrophenol	2.24	1.67	mg/kg wet	3.333		67	30-130	7	30	
2,4-Dinitrotoluene	2.36	0.333	mg/kg wet	3.333		71	40-140	13	30	
2,6-Dinitrotoluene	2.20	0.333	mg/kg wet	3.333		66	40-140	10	30	
2-Chloronaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	14	30	
2-Chlorophenol	2.27	0.333	mg/kg wet	3.333		68	30-130	12	30	
2-Methylphenol	2.25	0.333	mg/kg wet	3.333		67	30-130	9	30	
2-Nitroaniline	2.05	0.333	mg/kg wet	3.333		61	40-140	14	30	
2-Nitrophenol	2.21	0.333	mg/kg wet	3.333		66	30-130	9	30	
3,3´-Dichlorobenzidine	2.04	0.667	mg/kg wet	3.333		61	40-140	8	30	
3+4-Methylphenol	4.72	0.667	mg/kg wet	6.667		71	30-130	10	30	
3-Nitroaniline	2.07	0.333	mg/kg wet	3.333		62	40-140	8	30	
4,6-Dinitro-2-Methylphenol	2.50	1.67	mg/kg wet	3.333		75	30-130	10	30	
4-Bromophenyl-phenylether	2.12	0.333	mg/kg wet	3.333		64	40-140	9	30	
4-Chloro-3-Methylphenol	2.17	0.333	mg/kg wet	3.333		65	30-130	10	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92111 - 3546										
4-Chloroaniline	1.75	0.667	mg/kg wet	3.333		53	40-140	8	30	
4-Chloro-phenyl-phenyl ether	2.28	0.333	mg/kg wet	3.333		69	40-140	12	30	
4-Nitroaniline	1.97	0.333	mg/kg wet	3.333		59	40-140	10	30	
4-Nitrophenol	2.12	1.67	mg/kg wet	3.333		63	30-130	10	30	
Acetophenone	2.17	0.667	mg/kg wet	3.333		65	40-140	9	30	
Aniline	1.80	0.667	mg/kg wet	3.333		54	40-140	10	30	
Azobenzene	2.11	0.333	mg/kg wet	3.333		63	40-140	7	30	
Benzoic Acid	2.34	1.67	mg/kg wet	3.333		70	40-140	11	30	
Benzyl Alcohol	1.92	0.333	mg/kg wet	3.333		58	40-140	3	30	
bis(2-Chloroethoxy)methane	2.22	0.333	mg/kg wet	3.333		66	40-140	9	30	
bis(2-Chloroethyl)ether	2.16	0.333	mg/kg wet	3.333		65	40-140	10	30	
bis(2-chloroisopropyl)Ether	2.12	0.333	mg/kg wet	3.333		63	40-140	12	30	
bis(2-Ethylhexyl)phthalate	2.37	0.333	mg/kg wet	3.333		71	40-140	13	30	
Butylbenzylphthalate	2.30	0.333	mg/kg wet	3.333		69	40-140	8	30	
Carbazole	2.18	0.333	mg/kg wet	3.333		65	40-140	10	30	
Dibenzofuran	2.31	0.333	mg/kg wet	3.333		69	40-140	14	30	
Diethylphthalate	2.33	0.333	mg/kg wet	3.333		70	40-140	13	30	
Dimethylphthalate	2.37	0.333	mg/kg wet	3.333		71	40-140	11	30	
Di-n-butylphthalate	2.20	0.333	mg/kg wet	3.333		66	40-140	13	30	
Di-n-octylphthalate	2.40	0.333	mg/kg wet	3.333		72	40-140	17	30	
Hexachlorobenzene	2.28	0.167	mg/kg wet	3.333		68	40-140	17	30	
Hexachlorobutadiene	2.21	0.333	mg/kg wet	3.333		66	40-140	10	30	
Hexachlorocyclopentadiene	2.03	1.67	mg/kg wet	3.333		61	40-140	16	30	
Hexachloroethane	2.12	0.333	mg/kg wet	3.333		64	40-140	9	30	
Isophorone	1.96	0.333	mg/kg wet	3.333		59	40-140	6	30	
Nitrobenzene	2.06	0.333	mg/kg wet	3.333		62	40-140	3	30	
N-Nitrosodimethylamine	1.83	0.333	mg/kg wet	3.333		55	40-140	16	30	
N-Nitroso-Di-n-Propylamine	2.16	0.333	mg/kg wet	3.333		65	40-140	11	30	
N-nitrosodiphenylamine	2.18	0.333	mg/kg wet	3.333		65	40-140	7	30	
Pentachlorophenol	2.33	1.67	mg/kg wet	3.333		70	30-130	12	30	
Phenol	2.53	0.333	mg/kg wet	3.333		76	30-130	10	30	
Pyridine	1.86	1.67	mg/kg wet	3.333		56	40-140	15	30	
Surrogate: 1,2-Dichlorobenzene-d4	*2.16*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.45*		mg/kg wet	*5.000*		*69*	*30-130*			
Surrogate: 2-Chlorophenol-d4	*3.53*		mg/kg wet	*5.000*		*71*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.42*		mg/kg wet	*3.333*		*73*	*30-130*			
Surrogate: 2-Fluorophenol	*3.69*		mg/kg wet	*5.000*		*74*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.15*		mg/kg wet	*3.333*		*65*	*30-130*			
Surrogate: Phenol-d6	*3.60*		mg/kg wet	*5.000*		*72*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.52*		mg/kg wet	*3.333*		*75*	*30-130*			
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ92111 - 3546										
Blank										
2-Methylnaphthalene	ND	0.017	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ92111 - 3546										
Acenaphthene	ND	0.017	mg/kg wet							
Acenaphthylene	ND	0.017	mg/kg wet							
Anthracene	ND	0.017	mg/kg wet							
Benzo(a)anthracene	ND	0.017	mg/kg wet							
Benzo(a)pyrene	ND	0.017	mg/kg wet							
Benzo(b)fluoranthene	ND	0.017	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.017	mg/kg wet							
Benzo(k)fluoranthene	ND	0.017	mg/kg wet							
Chrysene	ND	0.017	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.017	mg/kg wet							
Fluoranthene	ND	0.017	mg/kg wet							
Fluorene	ND	0.017	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.017	mg/kg wet							
Naphthalene	ND	0.017	mg/kg wet							
Phenanthrene	ND	0.017	mg/kg wet							
Pyrene	ND	0.017	mg/kg wet							
LCS										
2-Methylnaphthalene	1.85	0.085	mg/kg wet	3.333		56	40-140			
Acenaphthene	1.98	0.085	mg/kg wet	3.333		59	40-140			
Acenaphthylene	1.97	0.085	mg/kg wet	3.333		59	40-140			
Anthracene	1.97	0.085	mg/kg wet	3.333		59	40-140			
Benzo(a)anthracene	1.91	0.085	mg/kg wet	3.333		57	40-140			
Benzo(a)pyrene	1.84	0.085	mg/kg wet	3.333		55	40-140			
Benzo(b)fluoranthene	1.91	0.085	mg/kg wet	3.333		57	40-140			
Benzo(g,h,i)perylene	1.76	0.085	mg/kg wet	3.333		53	40-140			
Benzo(k)fluoranthene	1.88	0.085	mg/kg wet	3.333		56	40-140			
Chrysene	1.97	0.085	mg/kg wet	3.333		59	40-140			
Dibenzo(a,h)Anthracene	1.83	0.085	mg/kg wet	3.333		55	40-140			
Fluoranthene	1.94	0.085	mg/kg wet	3.333		58	40-140			
Fluorene	1.96	0.085	mg/kg wet	3.333		59	40-140			
Indeno(1,2,3-cd)Pyrene	1.94	0.085	mg/kg wet	3.333		58	40-140			
Naphthalene	1.80	0.085	mg/kg wet	3.333		54	40-140			
Phenanthrene	1.86	0.085	mg/kg wet	3.333		56	40-140			
Pyrene	2.02	0.085	mg/kg wet	3.333		61	40-140			
LCS Dup										
2-Methylnaphthalene	2.02	0.085	mg/kg wet	3.333		60	40-140	9	30	
Acenaphthene	2.18	0.085	mg/kg wet	3.333		65	40-140	9	30	
Acenaphthylene	2.17	0.085	mg/kg wet	3.333		65	40-140	9	30	
Anthracene	2.14	0.085	mg/kg wet	3.333		64	40-140	8	30	
Benzo(a)anthracene	2.08	0.085	mg/kg wet	3.333		62	40-140	9	30	
Benzo(a)pyrene	2.04	0.085	mg/kg wet	3.333		61	40-140	10	30	
Benzo(b)fluoranthene	2.24	0.085	mg/kg wet	3.333		67	40-140	16	30	
Benzo(g,h,i)perylene	2.02	0.085	mg/kg wet	3.333		61	40-140	14	30	
Benzo(k)fluoranthene	1.95	0.085	mg/kg wet	3.333		58	40-140	4	30	
Chrysene	2.16	0.085	mg/kg wet	3.333		65	40-140	9	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ92111 - 3546										
Dibenzo(a,h)Anthracene	2.11	0.085	mg/kg wet	3.333		63	40-140	14	30	
Fluoranthene	2.12	0.085	mg/kg wet	3.333		64	40-140	9	30	
Fluorene	2.14	0.085	mg/kg wet	3.333		64	40-140	9	30	
Indeno(1,2,3-cd)Pyrene	2.08	0.085	mg/kg wet	3.333		62	40-140	7	30	
Naphthalene	1.95	0.085	mg/kg wet	3.333		59	40-140	8	30	
Phenanthrene	2.03	0.085	mg/kg wet	3.333		61	40-140	9	30	
Pyrene	2.20	0.085	mg/kg wet	3.333		66	40-140	8	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J0646

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
J	Reported between MDL and MRL
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
B+	Blank Spike recovery is above upper control limit (B+).
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0646

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: Client

ESS Project ID: 19J0646
Date Received: 10/18/2019
Project Due Date: 10/25/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 7.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	400334	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	400350	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	400351	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	400352	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400333	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	400347	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400348	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	400349	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400332	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	400344	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400345	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	400346	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400331	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	400341	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400342	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	400343	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400330	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
05	400338	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400339	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	400340	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	400329	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
06	400335	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
06	400336	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0646

Date Received: 10/18/2019

06	400337	Yes	NA	Yes	8 oz. Jar - Unpres	NP
07	400328	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Were all containers scanned into storage/lab? Initials [signature]

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: [signature] Date & Time: 10/18/19 1704

Reviewed By: [signature] Date & Time: 10/18/19 1755

Delivered By: [signature] 10/18/19 1755

CHAIN OF CUSTODY

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

ESS Lab # 1930646
Reporting Limits
Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Company Name: GZA	Project #: 346498	Project Name: Turk-Away Landfill	
Contact Person: Richard Carlone	Address: 100 Valley St, Suite 300		
City: Providence	State: RI	Zip Code: 02909	PO #
Telephone Number	FAX Number	Email Address: richard.carlone@gza.com	

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC	SVOC	TPH	PCB	Pest.	Metals
1	10/18/19	0850	Grab	Sed.	SSW-2 (0-6")	X	X	X	X	X	X
2	10/18/19	0850	Grab	Sed.	SSW-2 (6-18")	X	X	X	X	X	X
3	10/18/19	0950	Grab	Sed.	SSW-3 (0-6")	X	X	X	X	X	X
4	10/18/19	0950	Grab	Sed.	SSW-3 (6-18")	X	X	X	X	X	X
5	10/18/19	1117	Grab	Sed.	SSW-4 (0-6")	X	X	X	X	X	X
6	10/18/19	1117	Grab	Sed.	SSW-4 (6-18")	X	X	X	X	X	X
7	10/18/19	0900			Trip Blank	X					

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — V | AG | AG | AG | AG | AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 7 | 10 | 10 | 10 | 10 | 10
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 6 | 1 | 1 | 1 | 1 | 1
Number of Containers per Sample: 1 | ← 3 →

Laboratory Use Only
Cooler Present: yes ☑ Drop Off
Seals Intact: – ○ Pickup
Cooler Temperature: 7.3 °C ice

Sampled by: Rowan Harper

Comments: 1. Sed metals: 15 solid waste, mercury
Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
Rowan Harper 10/18/19 1237	10-18-19 12:37		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19J1047

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 4:04 pm, Nov 05, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

SAMPLE RECEIPT

The following samples were received on October 29, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J1047-01	SSW-4 18-36in	Sediment	6010C, 7471B, 8270D SIM
19J1047-02	SSW-11 18-36in	Sediment	6010C, 7471B, 8081B, 8270D SIM
19J1047-03	SSW-7 18-36in	Sediment	8260B
19J1047-04	SSW-5 18-36in	Sediment	6010C, 7471B
19J1047-05	SSW-4 18-36in	Sediment	6010C, 7471B, 8270D SIM

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J1047

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol
CJ93128-BSD1 **Blank Spike recovery is below lower control limit (B-).**
1,4-Dioxane - Screen (0% @ 44-241%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 18-36in
Date Sampled: 10/16/19 14:41
Percent Solids: 75

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-01
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.30)		6010C		1	KJK	11/02/19 14:31	2.51	100	CK90161
Arsenic	**2.99** (2.65)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Barium	**17.8** (2.65)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Beryllium	**0.28** (0.12)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Cadmium	ND (0.53)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Chromium	**6.63** (1.06)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Cobalt	**3.41** (1.06)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Copper	**9.84** (2.65)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Lead	**9.74** (5.30)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Mercury	ND (0.035)		7471B		1	MKS	11/04/19 14:04	0.75	40	CK90162
Nickel	**9.24** (2.65)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Selenium	ND (5.30)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Silver	ND (0.53)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Thallium	ND (5.30)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Vanadium	**8.32** (1.06)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161
Zinc	**33.9** (2.65)		6010C		1	KJK	11/02/19 9:55	2.51	100	CK90161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 18-36in
Date Sampled: 10/16/19 14:41
Percent Solids: 75
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-01
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: VSC
Prepared: 10/30/19 11:32

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Acenaphthene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Acenaphthylene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Anthracene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Benzo(a)anthracene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Benzo(a)pyrene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Benzo(b)fluoranthene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Benzo(g,h,i)perylene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Benzo(k)fluoranthene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Chrysene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Dibenzo(a,h)Anthracene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Fluoranthene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Fluorene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Indeno(1,2,3-cd)Pyrene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Naphthalene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Phenanthrene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015
Pyrene	ND (0.024)		8270D SIM		1	11/04/19 3:54	C9K0055	CJ93015

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*58 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*56 %*		*30-130*
Surrogate: Nitrobenzene-d5	*78 %*		*30-130*
Surrogate: p-Terphenyl-d14	*54 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 18-36in
Date Sampled: 10/17/19 09:45
Percent Solids: 80

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-02
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (5.39)		6010C		1	KJK	11/02/19 15:02	2.33	100	CK90161
Arsenic	**4.58** (2.69)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Barium	**18.4** (2.69)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Beryllium	**0.40** (0.12)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Cadmium	ND (0.54)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Chromium	**7.45** (1.08)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Cobalt	**5.86** (1.08)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Copper	**14.3** (2.69)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Lead	**10.9** (5.39)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Mercury	ND (0.023)		7471B		1	MKS	11/04/19 14:14	1.08	40	CK90162
Nickel	**11.7** (2.69)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Selenium	ND (5.39)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Silver	ND (0.54)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Thallium	ND (5.39)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Vanadium	**11.1** (1.08)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161
Zinc	**27.8** (2.69)		6010C		1	KJK	11/02/19 10:26	2.33	100	CK90161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 18-36in
Date Sampled: 10/17/19 09:45
Percent Solids: 80
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: DMC
Prepared: 10/30/19 14:05

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	**0.0075** (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
4,4´-DDE	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
4,4´-DDT	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Aldrin	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
alpha-BHC	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
alpha-Chlordane	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
beta-BHC	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Chlordane (Total)	ND (0.0360)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
delta-BHC	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Dieldrin	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Endosulfan I	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Endosulfan II	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Endosulfan Sulfate	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Endrin	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Endrin Aldehyde	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Endrin Ketone	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
gamma-BHC (Lindane)	ND (0.0018)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
gamma-Chlordane	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Heptachlor	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Heptachlor Epoxide	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Hexachlorobenzene	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Methoxychlor	ND (0.0030)		8081B		1	11/01/19 0:57	C9J0597	CJ93014
Toxaphene	ND (0.150)		8081B		1	11/01/19 0:57	C9J0597	CJ93014

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11 18-36in
Date Sampled: 10/17/19 09:45
Percent Solids: 80
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-02
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: VSC
Prepared: 10/30/19 11:32

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Acenaphthene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Acenaphthylene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Anthracene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Benzo(a)anthracene	**0.022** (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Benzo(a)pyrene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Benzo(b)fluoranthene	**0.027** (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Benzo(g,h,i)perylene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Benzo(k)fluoranthene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Chrysene	**0.026** (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Dibenzo(a,h)Anthracene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Fluoranthene	**0.048** (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Fluorene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Indeno(1,2,3-cd)Pyrene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Naphthalene	ND (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Phenanthrene	**0.028** (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015
Pyrene	**0.047** (0.021)		8270D SIM		1	11/04/19 4:43	C9K0055	CJ93015

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*57 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*57 %*		*30-130*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: p-Terphenyl-d14	*60 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 18-36in
Date Sampled: 10/17/19 11:53
Percent Solids: 84
Initial Volume: 16.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,1,1-Trichloroethane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,1,2,2-Tetrachloroethane	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,1,2-Trichloroethane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,1-Dichloroethane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,1-Dichloroethene	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,1-Dichloropropene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2,3-Trichlorobenzene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2,3-Trichloropropane	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2,4-Trichlorobenzene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2,4-Trimethylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2-Dibromo-3-Chloropropane	ND (1.27)	0.255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2-Dibromoethane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2-Dichlorobenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2-Dichloroethane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,2-Dichloropropane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,3,5-Trimethylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,3-Dichlorobenzene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,3-Dichloropropane	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,4-Dichlorobenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1,4-Dioxane - Screen	ND (51.0)	48.4	8260B		1	10/31/19 13:33	C9J0621	CJ93128
1-Chlorohexane	ND (0.255)	0.102	8260B		1	10/31/19 13:33	C9J0621	CJ93128
2,2-Dichloropropane	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
2-Butanone	ND (1.27)	0.867	8260B		1	10/31/19 13:33	C9J0621	CJ93128
2-Chlorotoluene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
2-Hexanone	ND (1.27)	0.382	8260B		1	10/31/19 13:33	C9J0621	CJ93128
4-Chlorotoluene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
4-Isopropyltoluene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
4-Methyl-2-Pentanone	ND (1.27)	0.408	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Acetone	ND (1.27)	0.688	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Benzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Bromobenzene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 18-36in
Date Sampled: 10/17/19 11:53
Percent Solids: 84
Initial Volume: 16.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Bromodichloromethane	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Bromoform	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Bromomethane	ND (0.255)	0.102	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Carbon Disulfide	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Carbon Tetrachloride	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Chlorobenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Chloroethane	ND (0.255)	0.102	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Chloroform	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Chloromethane	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
cis-1,2-Dichloroethene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
cis-1,3-Dichloropropene	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Dibromochloromethane	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Dibromomethane	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Dichlorodifluoromethane	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Diethyl Ether	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Di-isopropyl ether	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Ethyl tertiary-butyl ether	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Ethylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Hexachlorobutadiene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Isopropylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Methyl tert-Butyl Ether	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Methylene Chloride	**J 0.127** (0.510)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Naphthalene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
n-Butylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
n-Propylbenzene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
sec-Butylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Styrene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
tert-Butylbenzene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Tertiary-amyl methyl ether	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Tetrachloroethene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Tetrahydrofuran	ND (1.27)	0.408	8260B		1	10/31/19 13:33	C9J0621	CJ93128

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7 18-36in
Date Sampled: 10/17/19 11:53
Percent Solids: 84
Initial Volume: 16.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-03
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
trans-1,2-Dichloroethene	ND (0.255)	0.0765	8260B		1	10/31/19 13:33	C9J0621	CJ93128
trans-1,3-Dichloropropene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Trichloroethene	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Trichlorofluoromethane	ND (0.255)	0.102	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Vinyl Acetate	ND (0.255)	0.127	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Vinyl Chloride	ND (0.255)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Xylene O	ND (0.255)	0.0255	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Xylene P,M	ND (0.510)	0.0510	8260B		1	10/31/19 13:33	C9J0621	CJ93128
Xylenes (Total)	ND (0.510)		8260B		1	10/31/19 13:33		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*117 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*123 %*		*70-130*
Surrogate: Dibromofluoromethane	*116 %*		*70-130*
Surrogate: Toluene-d8	*113 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5 18-36in
Date Sampled: 10/17/19 15:00
Percent Solids: 81

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-04
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (4.37)		6010C		1	KJK	11/02/19 15:25	2.82	100	CK90161
Arsenic	**3.70** (2.18)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Barium	**7.88** (2.18)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Beryllium	**0.15** (0.10)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Cadmium	ND (0.44)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Chromium	**4.99** (0.87)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Cobalt	**3.38** (0.87)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Copper	**6.21** (2.18)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Lead	ND (4.37)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Mercury	ND (0.019)		7471B		1	MKS	11/04/19 14:31	1.27	40	CK90162
Nickel	**6.90** (2.18)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Selenium	ND (4.37)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Silver	ND (0.44)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Thallium	ND (4.37)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Vanadium	**6.13** (0.87)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161
Zinc	**14.0** (2.18)		6010C		1	KJK	11/02/19 10:49	2.82	100	CK90161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 18-36in
Date Sampled: 10/18/19 11:17
Percent Solids: 82

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-05
Sample Matrix: Sediment
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (3.97)		6010C		1	KJK	11/02/19 15:29	3.08	100	CK90161
Arsenic	**6.21** (1.98)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Barium	**12.4** (1.98)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Beryllium	**0.21** (0.09)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Cadmium	ND (0.40)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Chromium	**6.56** (0.79)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Cobalt	**4.63** (0.79)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Copper	**10.2** (1.98)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Lead	**6.19** (3.97)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Mercury	ND (0.018)		7471B		1	MKS	11/04/19 14:33	1.32	40	CK90162
Nickel	**8.96** (1.98)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Selenium	ND (3.97)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Silver	ND (0.79)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Thallium	ND (3.97)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Vanadium	**7.79** (0.79)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161
Zinc	**18.9** (1.98)		6010C		1	KJK	11/02/19 10:53	3.08	100	CK90161

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4 18-36in
Date Sampled: 10/18/19 11:17
Percent Solids: 82
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 19J1047
ESS Laboratory Sample ID: 19J1047-05
Sample Matrix: Sediment
Units: mg/kg dry
Analyst: VSC
Prepared: 10/30/19 11:32

8270D(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Acenaphthene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Acenaphthylene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Anthracene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Benzo(a)anthracene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Benzo(a)pyrene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Benzo(b)fluoranthene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Benzo(g,h,i)perylene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Benzo(k)fluoranthene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Chrysene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Dibenzo(a,h)Anthracene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Fluoranthene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Fluorene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Indeno(1,2,3-cd)Pyrene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Naphthalene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Phenanthrene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015
Pyrene	ND (0.021)		8270D SIM		1	11/04/19 5:31	C9K0055	CJ93015

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*58 %*		*30-130*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: p-Terphenyl-d14	*62 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CK90161 - 3050B										
Blank										
Antimony	ND	5.00	mg/kg wet							
Arsenic	ND	2.50	mg/kg wet							
Barium	ND	2.50	mg/kg wet							
Beryllium	ND	0.11	mg/kg wet							
Cadmium	ND	0.50	mg/kg wet							
Chromium	ND	1.00	mg/kg wet							
Cobalt	ND	1.00	mg/kg wet							
Copper	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
Nickel	ND	2.50	mg/kg wet							
Selenium	ND	5.00	mg/kg wet							
Silver	ND	0.50	mg/kg wet							
Thallium	ND	5.00	mg/kg wet							
Vanadium	ND	1.00	mg/kg wet							
Zinc	ND	2.50	mg/kg wet							
LCS										
Antimony	32.1	19.2	mg/kg wet	51.30		63	0-209			
Arsenic	175	9.62	mg/kg wet	202.0		87	80-120			
Barium	290	9.62	mg/kg wet	343.0		85	80-120			
Beryllium	42.5	0.42	mg/kg wet	52.10		82	80-120			
Cadmium	122	1.92	mg/kg wet	149.0		82	80-120			
Chromium	155	3.85	mg/kg wet	182.0		85	80-120			
Cobalt	151	3.85	mg/kg wet	171.0		88	80-120			
Copper	196	9.62	mg/kg wet	225.0		87	80-120			
Lead	294	19.2	mg/kg wet	333.0		88	80-120			
Nickel	145	9.62	mg/kg wet	167.0		87	80-120			
Selenium	147	19.2	mg/kg wet	169.0		87	80-120			
Silver	39.9	1.92	mg/kg wet	48.90		82	80-120			
Thallium	62.6	19.2	mg/kg wet	82.30		76	62-139			
Vanadium	198	3.85	mg/kg wet	227.0		87	80-120			
Zinc	390	9.62	mg/kg wet	459.0		85	80-120			
LCS Dup										
Antimony	33.4	19.6	mg/kg wet	51.30		65	0-209	4	20	
Arsenic	182	9.80	mg/kg wet	202.0		90	80-120	4	20	
Barium	312	9.80	mg/kg wet	343.0		91	80-120	7	20	
Beryllium	44.4	0.43	mg/kg wet	52.10		85	80-120	4	20	
Cadmium	124	1.96	mg/kg wet	149.0		83	80-120	2	20	
Chromium	158	3.92	mg/kg wet	182.0		87	80-120	2	20	
Cobalt	154	3.92	mg/kg wet	171.0		90	80-120	2	20	
Copper	201	9.80	mg/kg wet	225.0		89	80-120	2	20	
Lead	303	19.6	mg/kg wet	333.0		91	80-120	3	20	
Nickel	149	9.80	mg/kg wet	167.0		89	80-120	3	20	
Selenium	149	19.6	mg/kg wet	169.0		88	80-120	2	20	
Silver	41.3	1.96	mg/kg wet	48.90		85	80-120	4	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CK90161 - 3050B										
Thallium	65.3	19.6	mg/kg wet	82.30		79	62-139	4	20	
Vanadium	201	3.92	mg/kg wet	227.0		89	80-120	2	20	
Zinc	395	9.80	mg/kg wet	459.0		86	80-120	1	20	
Batch CK90162 - 7471B										
Blank										
Mercury	ND	0.033	mg/kg wet							
LCS										
Mercury	8.40	0.535	mg/kg wet	7.760		108	80-120			
LCS Dup										
Mercury	8.87	0.660	mg/kg wet	7.760		114	80-120	5	20	
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*5.16*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*4.85*		mg/kg wet	*5.000*		*97*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Surrogate: Dibromofluoromethane	*5.03*		mg/kg wet	*5.000*		*101*	*70-130*			
Surrogate: Toluene-d8	*4.87*		mg/kg wet	*5.000*		*97*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.84	0.200	mg/kg wet	2.000		92	70-130			
1,1,1-Trichloroethane	2.00	0.200	mg/kg wet	2.000		100	70-130			
1,1,2,2-Tetrachloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,1,2-Trichloroethane	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,1-Dichloroethane	2.17	0.200	mg/kg wet	2.000		109	70-130			
1,1-Dichloroethene	2.20	0.200	mg/kg wet	2.000		110	70-130			
1,1-Dichloropropene	2.11	0.200	mg/kg wet	2.000		106	70-130			
1,2,3-Trichlorobenzene	2.10	0.200	mg/kg wet	2.000		105	70-130			
1,2,3-Trichloropropane	2.22	0.200	mg/kg wet	2.000		111	70-130			
1,2,4-Trichlorobenzene	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,2,4-Trimethylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
1,2-Dibromo-3-Chloropropane	1.96	1.00	mg/kg wet	2.000		98	70-130			
1,2-Dibromoethane	1.95	0.200	mg/kg wet	2.000		98	70-130			
1,2-Dichlorobenzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,2-Dichloroethane	2.13	0.200	mg/kg wet	2.000		107	70-130			
1,2-Dichloropropane	2.15	0.200	mg/kg wet	2.000		108	70-130			
1,3,5-Trimethylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,3-Dichlorobenzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,3-Dichloropropane	2.12	0.200	mg/kg wet	2.000		106	70-130			
1,4-Dichlorobenzene	2.05	0.200	mg/kg wet	2.000		103	70-130			
1,4-Dioxane - Screen	41.6	40.0	mg/kg wet	40.00		104	44-241			
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130			
2,2-Dichloropropane	2.17	0.200	mg/kg wet	2.000		108	70-130			
2-Butanone	10.8	1.00	mg/kg wet	10.00		108	70-130			
2-Chlorotoluene	2.02	0.200	mg/kg wet	2.000		101	70-130			
2-Hexanone	9.56	1.00	mg/kg wet	10.00		96	70-130			
4-Chlorotoluene	2.04	0.200	mg/kg wet	2.000		102	70-130			
4-Isopropyltoluene	1.95	0.200	mg/kg wet	2.000		98	70-130			
4-Methyl-2-Pentanone	10.9	1.00	mg/kg wet	10.00		109	70-130			
Acetone	10.4	1.00	mg/kg wet	10.00		104	70-130			
Benzene	2.09	0.200	mg/kg wet	2.000		104	70-130			
Bromobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Bromochloromethane	2.14	0.200	mg/kg wet	2.000		107	70-130			
Bromodichloromethane	2.02	0.200	mg/kg wet	2.000		101	70-130			
Bromoform	1.72	0.200	mg/kg wet	2.000		86	70-130			
Bromomethane	1.55	0.200	mg/kg wet	2.000		78	70-130			
Carbon Disulfide	2.05	0.200	mg/kg wet	2.000		102	70-130			
Carbon Tetrachloride	2.01	0.200	mg/kg wet	2.000		100	70-130			
Chlorobenzene	1.87	0.200	mg/kg wet	2.000		94	70-130			
Chloroethane	1.84	0.200	mg/kg wet	2.000		92	70-130			
Chloroform	2.11	0.200	mg/kg wet	2.000		106	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Chloromethane	1.81	0.200	mg/kg wet	2.000		91	70-130			
cis-1,2-Dichloroethene	2.05	0.200	mg/kg wet	2.000		103	70-130			
cis-1,3-Dichloropropene	1.98	0.200	mg/kg wet	2.000		99	70-130			
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		94	70-130			
Dibromomethane	2.11	0.200	mg/kg wet	2.000		106	70-130			
Dichlorodifluoromethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
Diethyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Di-isopropyl ether	1.97	0.200	mg/kg wet	2.000		99	70-130			
Ethyl tertiary-butyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130			
Ethylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
Hexachlorobutadiene	2.53	0.200	mg/kg wet	2.000		127	70-130			
Isopropylbenzene	1.95	0.200	mg/kg wet	2.000		98	70-130			
Methyl tert-Butyl Ether	2.01	0.200	mg/kg wet	2.000		101	70-130			
Methylene Chloride	2.11	0.400	mg/kg wet	2.000		105	70-130			
Naphthalene	1.78	0.200	mg/kg wet	2.000		89	70-130			
n-Butylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
n-Propylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
sec-Butylbenzene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Styrene	1.82	0.200	mg/kg wet	2.000		91	70-130			
tert-Butylbenzene	1.93	0.200	mg/kg wet	2.000		96	70-130			
Tertiary-amyl methyl ether	1.96	0.200	mg/kg wet	2.000		98	70-130			
Tetrachloroethene	1.77	0.200	mg/kg wet	2.000		88	70-130			
Tetrahydrofuran	2.26	1.00	mg/kg wet	2.000		113	70-130			
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
trans-1,2-Dichloroethene	2.15	0.200	mg/kg wet	2.000		107	70-130			
trans-1,3-Dichloropropene	2.01	0.200	mg/kg wet	2.000		100	70-130			
Trichloroethene	2.00	0.200	mg/kg wet	2.000		100	70-130			
Trichlorofluoromethane	2.19	0.200	mg/kg wet	2.000		110	70-130			
Vinyl Acetate	2.11	0.200	mg/kg wet	2.000		106	70-130			
Vinyl Chloride	1.71	0.200	mg/kg wet	2.000		86	70-130			
Xylene O	1.89	0.200	mg/kg wet	2.000		95	70-130			
Xylene P,M	3.74	0.400	mg/kg wet	4.000		94	70-130			
Surrogate: 1,2-Dichloroethane-d4	*4.98*		mg/kg wet	*5.000*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.24*		mg/kg wet	*5.000*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*5.10*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Toluene-d8	*4.72*		mg/kg wet	*5.000*		*94*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130	1	25	
1,1,1-Trichloroethane	2.01	0.200	mg/kg wet	2.000		100	70-130	0.4	25	
1,1,2,2-Tetrachloroethane	2.02	0.200	mg/kg wet	2.000		101	70-130	1	25	
1,1,2-Trichloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130	8	25	
1,1-Dichloroethane	2.12	0.200	mg/kg wet	2.000		106	70-130	2	25	
1,1-Dichloroethene	2.14	0.200	mg/kg wet	2.000		107	70-130	3	25	
1,1-Dichloropropene	2.06	0.200	mg/kg wet	2.000		103	70-130	2	25	
1,2,3-Trichlorobenzene	2.04	0.200	mg/kg wet	2.000		102	70-130	3	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
1,2,3-Trichloropropane	2.15	0.200	mg/kg wet	2.000		108	70-130	3	25	
1,2,4-Trichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	5	25	
1,2,4-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	3	25	
1,2-Dibromo-3-Chloropropane	1.67	1.00	mg/kg wet	2.000		83	70-130	16	25	
1,2-Dibromoethane	2.00	0.200	mg/kg wet	2.000		100	70-130	2	25	
1,2-Dichlorobenzene	1.93	0.200	mg/kg wet	2.000		96	70-130	3	25	
1,2-Dichloroethane	2.08	0.200	mg/kg wet	2.000		104	70-130	2	25	
1,2-Dichloropropane	2.11	0.200	mg/kg wet	2.000		105	70-130	2	25	
1,3,5-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		101	70-130	1	25	
1,3-Dichlorobenzene	2.03	0.200	mg/kg wet	2.000		101	70-130	2	25	
1,3-Dichloropropane	2.19	0.200	mg/kg wet	2.000		110	70-130	4	25	
1,4-Dichlorobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	2	25	
1,4-Dioxane - Screen	ND	40.0	mg/kg wet	40.00		0	44-241	200	200	B-
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130	0.2	25	
2,2-Dichloropropane	2.08	0.200	mg/kg wet	2.000		104	70-130	4	25	
2-Butanone	9.97	1.00	mg/kg wet	10.00		100	70-130	8	25	
2-Chlorotoluene	2.04	0.200	mg/kg wet	2.000		102	70-130	1	25	
2-Hexanone	9.74	1.00	mg/kg wet	10.00		97	70-130	2	25	
4-Chlorotoluene	2.01	0.200	mg/kg wet	2.000		101	70-130	1	25	
4-Isopropyltoluene	1.93	0.200	mg/kg wet	2.000		96	70-130	1	25	
4-Methyl-2-Pentanone	9.64	1.00	mg/kg wet	10.00		96	70-130	12	25	
Acetone	9.46	1.00	mg/kg wet	10.00		95	70-130	10	25	
Benzene	2.07	0.200	mg/kg wet	2.000		104	70-130	0.8	25	
Bromobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	2	25	
Bromochloromethane	2.02	0.200	mg/kg wet	2.000		101	70-130	5	25	
Bromodichloromethane	1.92	0.200	mg/kg wet	2.000		96	70-130	5	25	
Bromoform	1.70	0.200	mg/kg wet	2.000		85	70-130	1	25	
Bromomethane	1.71	0.200	mg/kg wet	2.000		86	70-130	10	25	
Carbon Disulfide	2.02	0.200	mg/kg wet	2.000		101	70-130	1	25	
Carbon Tetrachloride	1.99	0.200	mg/kg wet	2.000		99	70-130	1	25	
Chlorobenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	3	25	
Chloroethane	1.85	0.200	mg/kg wet	2.000		93	70-130	0.4	25	
Chloroform	2.10	0.200	mg/kg wet	2.000		105	70-130	0.7	25	
Chloromethane	1.73	0.200	mg/kg wet	2.000		87	70-130	5	25	
cis-1,2-Dichloroethene	2.05	0.200	mg/kg wet	2.000		102	70-130	0.2	25	
cis-1,3-Dichloropropene	1.90	0.200	mg/kg wet	2.000		95	70-130	4	25	
Dibromochloromethane	1.87	0.200	mg/kg wet	2.000		94	70-130	0	25	
Dibromomethane	2.01	0.200	mg/kg wet	2.000		100	70-130	5	25	
Dichlorodifluoromethane	1.79	0.200	mg/kg wet	2.000		89	70-130	7	25	
Diethyl Ether	1.83	0.200	mg/kg wet	2.000		91	70-130	7	25	
Di-isopropyl ether	1.93	0.200	mg/kg wet	2.000		97	70-130	2	25	
Ethyl tertiary-butyl ether	1.85	0.200	mg/kg wet	2.000		93	70-130	5	25	
Ethylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130	2	25	
Hexachlorobutadiene	2.41	0.200	mg/kg wet	2.000		121	70-130	5	25	
Isopropylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CJ93128 - 5035										
Methyl tert-Butyl Ether	1.90	0.200	mg/kg wet	2.000		95	70-130	6	25	
Methylene Chloride	2.16	0.400	mg/kg wet	2.000		108	70-130	2	25	
Naphthalene	1.70	0.200	mg/kg wet	2.000		85	70-130	5	25	
n-Butylbenzene	2.11	0.200	mg/kg wet	2.000		106	70-130	4	25	
n-Propylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	1	25	
sec-Butylbenzene	1.99	0.200	mg/kg wet	2.000		100	70-130	2	25	
Styrene	1.84	0.200	mg/kg wet	2.000		92	70-130	1	25	
tert-Butylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	0.8	25	
Tertiary-amyl methyl ether	1.90	0.200	mg/kg wet	2.000		95	70-130	4	25	
Tetrachloroethene	1.86	0.200	mg/kg wet	2.000		93	70-130	5	25	
Tetrahydrofuran	2.15	1.00	mg/kg wet	2.000		108	70-130	5	25	
Toluene	1.98	0.200	mg/kg wet	2.000		99	70-130	1	25	
trans-1,2-Dichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130	6	25	
trans-1,3-Dichloropropene	1.94	0.200	mg/kg wet	2.000		97	70-130	4	25	
Trichloroethene	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Trichlorofluoromethane	2.19	0.200	mg/kg wet	2.000		109	70-130	0.09	25	
Vinyl Acetate	2.03	0.200	mg/kg wet	2.000		102	70-130	4	25	
Vinyl Chloride	1.73	0.200	mg/kg wet	2.000		86	70-130	1	25	
Xylene O	1.97	0.200	mg/kg wet	2.000		99	70-130	4	25	
Xylene P,M	3.85	0.400	mg/kg wet	4.000		96	70-130	3	25	
Surrogate: 1,2-Dichloroethane-d4	*4.95*		mg/kg wet	*5.000*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.33*		mg/kg wet	*5.000*		*107*	*70-130*			
Surrogate: Dibromofluoromethane	*5.08*		mg/kg wet	*5.000*		*102*	*70-130*			
Surrogate: Toluene-d8	*4.97*		mg/kg wet	*5.000*		*99*	*70-130*			
8081B Organochlorine Pesticides										
Batch CJ93014 - 3546										
Blank										
4,4´-DDD	ND	0.0025	mg/kg wet							
4,4´-DDD [2C]	ND	0.0025	mg/kg wet							
4,4´-DDE	ND	0.0025	mg/kg wet							
4,4´-DDE [2C]	ND	0.0025	mg/kg wet							
4,4´-DDT	ND	0.0025	mg/kg wet							
4,4´-DDT [2C]	ND	0.0025	mg/kg wet							
Aldrin	ND	0.0025	mg/kg wet							
Aldrin [2C]	ND	0.0025	mg/kg wet							
alpha-BHC	ND	0.0025	mg/kg wet							
alpha-BHC [2C]	ND	0.0025	mg/kg wet							
alpha-Chlordane	ND	0.0025	mg/kg wet							
alpha-Chlordane [2C]	ND	0.0025	mg/kg wet							
beta-BHC	ND	0.0025	mg/kg wet							
beta-BHC [2C]	ND	0.0025	mg/kg wet							
delta-BHC	ND	0.0025	mg/kg wet							
delta-BHC [2C]	ND	0.0025	mg/kg wet							
Dieldrin	ND	0.0025	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J1047

Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ93014 - 3546										
Dieldrin [2C]	ND	0.0025	mg/kg wet							
Endosulfan I	ND	0.0025	mg/kg wet							
Endosulfan I [2C]	ND	0.0025	mg/kg wet							
Endosulfan II	ND	0.0025	mg/kg wet							
Endosulfan II [2C]	ND	0.0025	mg/kg wet							
Endosulfan Sulfate	ND	0.0025	mg/kg wet							
Endosulfan Sulfate [2C]	ND	0.0025	mg/kg wet							
Endrin	ND	0.0025	mg/kg wet							
Endrin [2C]	ND	0.0025	mg/kg wet							
Endrin Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [2C]	ND	0.0025	mg/kg wet							
Endrin Ketone	ND	0.0025	mg/kg wet							
Endrin Ketone [2C]	ND	0.0025	mg/kg wet							
gamma-BHC (Lindane)	ND	0.0015	mg/kg wet							
gamma-BHC (Lindane) [2C]	ND	0.0015	mg/kg wet							
gamma-Chlordane	ND	0.0025	mg/kg wet							
gamma-Chlordane [2C]	ND	0.0025	mg/kg wet							
Heptachlor	ND	0.0025	mg/kg wet							
Heptachlor [2C]	ND	0.0025	mg/kg wet							
Heptachlor Epoxide	ND	0.0025	mg/kg wet							
Heptachlor Epoxide [2C]	ND	0.0025	mg/kg wet							
Hexachlorobenzene	ND	0.0025	mg/kg wet							
Hexachlorobenzene [2C]	ND	0.0025	mg/kg wet							
Methoxychlor	ND	0.0025	mg/kg wet							
Methoxychlor [2C]	ND	0.0025	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0121*		mg/kg wet	*0.01250*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0126*		mg/kg wet	*0.01250*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0135*		mg/kg wet	*0.01250*		*108*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0137*		mg/kg wet	*0.01250*		*109*	*30-150*			
LCS										
4,4´-DDD	0.0127	0.0025	mg/kg wet	0.01250		102	40-140			
4,4´-DDD [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
4,4´-DDE	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
4,4´-DDE [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
4,4´-DDT	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
4,4´-DDT [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Aldrin	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
Aldrin [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
alpha-BHC	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			
alpha-BHC [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
alpha-Chlordane	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
alpha-Chlordane [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
beta-BHC	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
beta-BHC [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			

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Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J1047

Quality Control Data

8081B Organochlorine Pesticides

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ93014 - 3546										
delta-BHC	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
delta-BHC [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140			
Dieldrin	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			
Dieldrin [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Endosulfan I	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Endosulfan I [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140			
Endosulfan II	0.0114	0.0025	mg/kg wet	0.01250		92	40-140			
Endosulfan II [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan Sulfate	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Endosulfan Sulfate [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endrin	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Endrin [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
Endrin Aldehyde	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
Endrin Aldehyde [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
Endrin Ketone	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
Endrin Ketone [2C]	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
gamma-BHC (Lindane)	0.0126	0.0015	mg/kg wet	0.01250		101	40-140			
gamma-BHC (Lindane) [2C]	0.0120	0.0015	mg/kg wet	0.01250		96	40-140			
gamma-Chlordane	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
gamma-Chlordane [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Heptachlor Epoxide	0.0128	0.0025	mg/kg wet	0.01250		102	40-140			
Heptachlor Epoxide [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Hexachlorobenzene	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
Hexachlorobenzene [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
Methoxychlor	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Methoxychlor [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
Surrogate: Decachlorobiphenyl	*0.0118*		mg/kg wet	*0.01250*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0123*		mg/kg wet	*0.01250*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0132*		mg/kg wet	*0.01250*		*106*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0135*		mg/kg wet	*0.01250*		*108*	*30-150*			
LCS Dup										
4,4´-DDD	0.0134	0.0025	mg/kg wet	0.01250		108	40-140	6	30	
4,4´-DDD [2C]	0.0127	0.0025	mg/kg wet	0.01250		102	40-140	2	30	
4,4´-DDE	0.0128	0.0025	mg/kg wet	0.01250		102	40-140	2	30	
4,4´-DDE [2C]	0.0128	0.0025	mg/kg wet	0.01250		102	40-140	3	30	
4,4´-DDT	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	1	30	
4,4´-DDT [2C]	0.0109	0.0025	mg/kg wet	0.01250		88	40-140	2	30	
Aldrin	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	1	30	
Aldrin [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	2	30	
alpha-BHC	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	3	30	
alpha-BHC [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	2	30	
alpha-Chlordane	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	2	30	

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Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ93014 - 3546										
alpha-Chlordane [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	3	30	
beta-BHC	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	3	30	
beta-BHC [2C]	0.0119	0.0025	mg/kg wet	0.01250		96	40-140	2	30	
delta-BHC	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	2	30	
delta-BHC [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140	2	30	
Dieldrin	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	2	30	
Dieldrin [2C]	0.0128	0.0025	mg/kg wet	0.01250		103	40-140	4	30	
Endosulfan I	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	2	30	
Endosulfan I [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	3	30	
Endosulfan II	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	5	30	
Endosulfan II [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	1	30	
Endosulfan Sulfate	0.0120	0.0025	mg/kg wet	0.01250		96	40-140	4	30	
Endosulfan Sulfate [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	4	30	
Endrin	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	2	30	
Endrin [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140	1	30	
Endrin Aldehyde	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	4	30	
Endrin Aldehyde [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140	3	30	
Endrin Ketone	0.0128	0.0025	mg/kg wet	0.01250		102	40-140	5	30	
Endrin Ketone [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	6	30	
gamma-BHC (Lindane)	0.0128	0.0015	mg/kg wet	0.01250		103	40-140	1	30	
gamma-BHC (Lindane) [2C]	0.0123	0.0015	mg/kg wet	0.01250		99	40-140	2	30	
gamma-Chlordane	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	2	30	
gamma-Chlordane [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	3	30	
Heptachlor	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	3	30	
Heptachlor [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	2	30	
Heptachlor Epoxide	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	2	30	
Heptachlor Epoxide [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	2	30	
Hexachlorobenzene	0.0124	0.0025	mg/kg wet	0.01250		99	40-140	2	30	
Hexachlorobenzene [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140	0.2	30	
Methoxychlor	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	0.9	30	
Methoxychlor [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	0	30	
Surrogate: Decachlorobiphenyl	*0.0120*		mg/kg wet	*0.01250*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0124*		mg/kg wet	*0.01250*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0127*		mg/kg wet	*0.01250*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0130*		mg/kg wet	*0.01250*		*104*	*30-150*			
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ93015 - 3546										
Blank										
2-Methylnaphthalene	ND	0.017	mg/kg wet							
Acenaphthene	ND	0.017	mg/kg wet							
Acenaphthylene	ND	0.017	mg/kg wet							
Anthracene	ND	0.017	mg/kg wet							
Benzo(a)anthracene	ND	0.017	mg/kg wet							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ93015 - 3546										
Benzo(a)pyrene	ND	0.017	mg/kg wet							
Benzo(b)fluoranthene	ND	0.017	mg/kg wet							
Benzo(g,h,i)perylene	ND	0.017	mg/kg wet							
Benzo(k)fluoranthene	ND	0.017	mg/kg wet							
Chrysene	ND	0.017	mg/kg wet							
Dibenzo(a,h)Anthracene	ND	0.017	mg/kg wet							
Fluoranthene	ND	0.017	mg/kg wet							
Fluorene	ND	0.017	mg/kg wet							
Indeno(1,2,3-cd)Pyrene	ND	0.017	mg/kg wet							
Naphthalene	ND	0.017	mg/kg wet							
Phenanthrene	ND	0.017	mg/kg wet							
Pyrene	ND	0.017	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	*2.02*		mg/kg wet	*1.667*		*121*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.05*		mg/kg wet	*1.667*		*123*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.85*		mg/kg wet	*1.667*		*171*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.52*		mg/kg wet	*1.667*		*151*	*30-130*			
LCS										
2-Methylnaphthalene	2.16	0.085	mg/kg wet	3.333		65	40-140			
Acenaphthene	2.45	0.085	mg/kg wet	3.333		73	40-140			
Acenaphthylene	2.43	0.085	mg/kg wet	3.333		73	40-140			
Anthracene	2.75	0.085	mg/kg wet	3.333		82	40-140			
Benzo(a)anthracene	2.57	0.085	mg/kg wet	3.333		77	40-140			
Benzo(a)pyrene	2.63	0.085	mg/kg wet	3.333		79	40-140			
Benzo(b)fluoranthene	2.74	0.085	mg/kg wet	3.333		82	40-140			
Benzo(g,h,i)perylene	2.74	0.085	mg/kg wet	3.333		82	40-140			
Benzo(k)fluoranthene	2.76	0.085	mg/kg wet	3.333		83	40-140			
Chrysene	2.63	0.085	mg/kg wet	3.333		79	40-140			
Dibenzo(a,h)Anthracene	2.78	0.085	mg/kg wet	3.333		84	40-140			
Fluoranthene	2.80	0.085	mg/kg wet	3.333		84	40-140			
Fluorene	2.60	0.085	mg/kg wet	3.333		78	40-140			
Indeno(1,2,3-cd)Pyrene	2.86	0.085	mg/kg wet	3.333		86	40-140			
Naphthalene	2.03	0.085	mg/kg wet	3.333		61	40-140			
Phenanthrene	2.66	0.085	mg/kg wet	3.333		80	40-140			
Pyrene	2.71	0.085	mg/kg wet	3.333		81	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*2.13*		mg/kg wet	*3.333*		*64*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.27*		mg/kg wet	*3.333*		*68*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.65*		mg/kg wet	*3.333*		*79*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.99*		mg/kg wet	*3.333*		*90*	*30-130*			
LCS Dup										
2-Methylnaphthalene	2.06	0.085	mg/kg wet	3.333		62	40-140	5	30	
Acenaphthene	2.38	0.085	mg/kg wet	3.333		71	40-140	3	30	
Acenaphthylene	2.36	0.085	mg/kg wet	3.333		71	40-140	3	30	
Anthracene	2.81	0.085	mg/kg wet	3.333		84	40-140	2	30	
Benzo(a)anthracene	2.69	0.085	mg/kg wet	3.333		81	40-140	5	30	
Benzo(a)pyrene	2.71	0.085	mg/kg wet	3.333		81	40-140	3	30	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CJ93015 - 3546										
Benzo(b)fluoranthene	2.79	0.085	mg/kg wet	3.333		84	40-140	2	30	
Benzo(g,h,i)perylene	2.82	0.085	mg/kg wet	3.333		84	40-140	3	30	
Benzo(k)fluoranthene	2.90	0.085	mg/kg wet	3.333		87	40-140	5	30	
Chrysene	2.73	0.085	mg/kg wet	3.333		82	40-140	4	30	
Dibenzo(a,h)Anthracene	2.88	0.085	mg/kg wet	3.333		86	40-140	3	30	
Fluoranthene	2.82	0.085	mg/kg wet	3.333		85	40-140	0.6	30	
Fluorene	2.60	0.085	mg/kg wet	3.333		78	40-140	0.2	30	
Indeno(1,2,3-cd)Pyrene	2.92	0.085	mg/kg wet	3.333		88	40-140	2	30	
Naphthalene	1.90	0.085	mg/kg wet	3.333		57	40-140	6	30	
Phenanthrene	2.71	0.085	mg/kg wet	3.333		81	40-140	2	30	
Pyrene	2.82	0.085	mg/kg wet	3.333		85	40-140	4	30	
Surrogate: 1,2-Dichlorobenzene-d4	*1.87*		mg/kg wet	*3.333*		*56*	*30-130*			
Surrogate: 2-Fluorobiphenyl	*2.09*		mg/kg wet	*3.333*		*63*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.41*		mg/kg wet	*3.333*		*72*	*30-130*			
Surrogate: p-Terphenyl-d14	*3.02*		mg/kg wet	*3.333*		*91*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J1047

Notes and Definitions

U	Analyte included in the analysis, but not detected
J	Reported between MDL and MRL
D	Diluted.
B-	Blank Spike recovery is below lower control limit (B-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J1047

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 19J1047
Date Received: 10/29/2019
Project Due Date: 11/5/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 7.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

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

Sample Receiving Notes:

Relog of 19J0561 -3; 19J0621 -2, -3, -5 ; 19J0647 -3

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	406408	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	406407	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	406403	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	406406	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	406405	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
05	406404	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

2nd Review
Were all containers scanned into storage/lab? Initials
Are barcode labels on correct containers? Yes / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/29/19 1918
Reviewed By: Date & Time: 10/29/19 1930
Delivered By: 10/29/19 1930

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CHAIN OF CUSTODY

ESS Lab # ~~19J0561~~ 1951047

Turn Time	5 Days
Regulatory State	RI
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Reporting Limits	
Electonic Deliverables	☑ Data Checker ☑ Excel ☑ Other (Please Specify →) PDF

Company Name	Project #	Project Name
GZA	34640	Trik - Away Landfill

Contact Person	Address
Richard Cardone	188 Valley St, Suite 300

City	State	Zip Code	PO #
Providence	RI	02909	

Telephone Number	FAX Number	Email Address
		richard.cardone@gza.com

Analysis: ~~VOC~~, ~~SVOC~~, ~~TPH~~, ~~Pest~~, ~~PCB~~, ~~Metals~~, PAH SIM, RI15+ Hg

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	~~VOC~~	~~SVOC~~	~~TPH~~	~~Pest~~	~~PCB~~	~~Metals~~		PAH SIM	RI15+ Hg
13	10/16/19	1415	Grab	Sed.	SSW-4 (18-30")[2]	X	X	X	X	X	X		X	X
	10/16/19	0800	(COLI)	SW	Trip Blank	X								
	10/16/19	0800		Sed.	Trip Blank	X								
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial						V	AG	AG	AG	AG	AG		(Tedlar)	
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*						1	10	10	10	10	10			
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*						6/2	1	1	1	1	1			
Number of Containers per Sample:						1	← 3 →							

Sampled by: Rowan Hayes

Please specify "Other" preservative and containers types in this space

Comments:
1. Sed metals: 15 solid waste, mercury
2. Sed samples (18-30") place on HOLD until other results come back.
Page 2 of 2

Laboratory Use Only

Cooler Present: ✓ ○ Drop Off ○ Pickup
Seals Intact:
Cooler Temperature: 5.5, 0.5 °C Ice

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/16/19 1933	[signature] 10/16/19 1940		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
	10/16/19		

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CHAIN OF CUSTODY

ESS Lab # ~~19J0621~~ 19J1047

Turn Time	5	Days	
Regulatory State	RI		
Is this project for any of the following?:	○ CT RCP	○ MA MCP	○ RGP

Reporting Limits:

Electronic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA	Project #: 34048	Project Name: Mink-Avery Landfill
Contact Person: Richard Carlone	Address: 188 Valley Street, Suite 300	
City: Providence	State: RI	Zip Code: 02909	PO #:
Telephone Number:	FAX Number:	Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	~~VOC~~	~~SVOC~~	~~TPH~~	~~PCB~~	~~Pest~~	~~Metals~~	RI15 + Hg	PAH SIM	Pesticides	VOC
	10/17/19	0745	Grab	Sed.	SSW-8 (0-6")	X	X	X	X	X					
	10/17/19	0745	Grab	Sed.	SSW-8 (6-18")	X	X	X	X	X	X				
~~1~~	~~10/17/19~~	~~0745~~	~~Grab~~	~~Sed.~~	~~SSW-8 (18-36")~~ 2	X	X	X	X	X	X				
	10/17/19	0945	Grab	Sed.	SSW-11 (0-6")	X	X	X	X	X	X				
	10/17/19	0945	Grab	Sed.	SSW-11 (6-18")	X	X	X	X	X	X				
2	10/17/19	0945	Grab	Sed.	SSW-11 (18-36")2	X	X	X	X	X	X	X	X	X	
	10/17/19	1153	Grab	Sed.	SSW-7 (0-6")	X	X	X	X	X	X				
	10/17/19	1153	Grab	Sed.	SSW-7 (6-18")	X	X	X	X	X	X				
3	10/17/19	1153	Grab	Sed.	SSW-7 (18-36")2	X	X	X	X	X	X				X
	10/17/19	1407	Grab	Sed.	SSW-6 (0-6")	X	X	X	X	X	X				
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial						V	AG	AG	AG	AG	AG				
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*						7	10	10	10	10	10				
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*						6	1	1	1	1	1				
Number of Containers per Sample:						1	← 3 →								

Laboratory Use Only

Cooler Present: Y ○ Drop Off
Seals Intact: NA ○ Pickup
Cooler Temperature: 2.0 2.9 °C 3.1

Sampled by: Rowan Hawes

Comments: Please specify "Other" preservative and containers types in this space
1. Sed metals: RI solid waste, mercury
2. Sed samples (18-36") place on HOLD until other results come back
page 1 of 2

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/17/19 1600	[signature] 10/17/19 1608		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CHAIN OF CUSTODY

ESS Lab # ~~19J0621~~ 19J1047

Turn Time	5 Days
Regulatory State	RI
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP
Reporting Limits	
Electronic Deliverables	☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name	GZA
Contact Person	Richard Carlone
City	Providence
State	RI
Telephone Number	
FAX Number	
Project #	34649
Project Name	Take-Away Landfill
Address	188 Valley St. Suite 300
Zip Code	02909
PO #	
Email Address	richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	SVOC	TPH	PCB	Pest	~~Metals~~	RI15 + Hg
	10/17/19	1407	Grab	Sed.	SSW-6 (6-18")	X	X	X	X	X	X	
~~4~~	~~10/17/19~~	~~1407~~	~~Grab~~	~~Sed.~~	~~SSW-6 (18-36")~~ 2	X	X	X	X	X	X	
	10/17/19	1500	Grab	Sed.	SSW-5 (0-6")	X	X	X	X	X	X	
	10/17/19	1500	Grab	Sed.	SSW-5 (6-18")	X	X	X	X	X	X	
~~4~~5	10/17/19	1500	Grab	Sed.	SSW-5 (18-36")[2]	X	X	X	X	X	X	
	10/17/19	0400			Trip Blank	X						

	VOC	SVOC	TPH	PCB	Pest	Metals
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial	V	AG	AG	AG	AG	AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	7	10	10	10	10	10
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*	6	1	1	1	1	1
Number of Containers per Sample:	1	←		3	→	

Laboratory Use Only

Cooler Present: X ○ Drop Off
Seals Intact: NA ○ Pickup
Cooler Temperature: 2.0, 2.9 31

Sampled by: Rowan Hames

Comments: Please specify "Other" preservative and containers types in this space
1. Sed. metals: 15 solid waste, mercury
2. Sed. samples (18-30") place on HOLD until other results come back.
page 2 of 2

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/17/19 1600	[signature] 10/17/19 1609		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CHAIN OF CUSTODY

ESS Lab # ~~1930669~~ 1931047

Turn Time	5	Days
Regulatory State	RI	
Is this project for any of the following?:	○ CT RCP ○ MA MCP ○ RGP	
Reporting Limits		
Electonic Deliverables	☒ Data Checker ☒ Other (Please Specify →) PDF	☒ Excel

Company Name: GZA	Project #: 34644	Project Name: Trucks Away Landfill	
Contact Person: Richard Carlone	Address: 1990 Valley St, Suite 300		
City: Providence	State: RI	Zip Code: 02909	PO #:
Telephone Number:	FAX Number:	Email Address: richard.carlone@gza.com	

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	SVOC	TPH	PCB	Pest.	Metals	RI 5 + Hg	PAH SIM
~~1~~	~~10/18/19~~	~~0850~~	~~Grab~~	~~Sed.~~	SSW-2 (18-36")	X	X	X	X	X	X		
~~2~~	~~10/18/19~~	~~0950~~	~~Grab~~	~~Sed.~~	SSW-3 (18-36")	X	X	X	X	X	X		
~~5~~ 3	10/18/19	1117	Grab	Sed.	SSW-4 (18-36")	X	X	X	X	X	X	X	X

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	J-Jar	O-Other	P-Poly	S-Sterile	V-Vial	V	AG	AG	AG	AG	AG
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	7	10	10	10	10	10
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	6	1	1	1	1	1
									10-DI H2O						
Number of Containers per Sample:									11-Other*	1	←	←	3	←	→

Laboratory Use Only

Cooler Present: yes ☒ Drop Off
Seals Intact: – ○ Pickup
Cooler Temperature: 7.3 °C ice

Sampled by: Rowan Staples

Comments: Please specify "Other" preservative and containers types in this space
1. sed metals = IS solid waste, mercury
PLACE ALL SAMPLES ON HOLD UNTIL OTHER RESULTS COME BACK.

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/18/19 1237	10-18-19 14:37		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19J0562

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:40 pm, Oct 23, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

SAMPLE RECEIPT

The following samples were received on October 16, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0562-01	SSW-1	Surface Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19J0562-02	SSW-10	Surface Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19J0562-03	Trip Blank	Aqueous	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

PROJECT NARRATIVE

8081B Organochlorine Pesticides

C9J0393-CCV3 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Dieldrin [2C] (21% @ 20%), Heptachlor Epoxide [2C] (22% @ 20%)

C9J0393-CCV5 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Heptachlor Epoxide (22% @ 20%)

8270D Semi-Volatile Organic Compounds

C9J0312-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (111% @ 80-120%), 4,6-Dinitro-2-Methylphenol (108% @ 80-120%), Benzoic Acid (108% @ 80-120%)

C9J0312-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Hexachlorobutadiene (21% @ 20%), Hexachlorocyclopentadiene (27% @ 20%), p-Terphenyl-d14 (21% @ 20%)

C9J0339-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (100% @ 80-120%), 4,6-Dinitro-2-Methylphenol (132% @ 80-120%), Benzoic Acid (102% @ 80-120%)

C9J0339-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
4,6-Dinitro-2-Methylphenol (32% @ 20%), 4-Nitroaniline (34% @ 20%), Aniline (22% @ 20%), N-nitrosodiphenylamine (28% @ 20%), Phenol (30% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds

C9J0351-CCV1 **Calibration required quadratic regression (Q).**
Pentachlorophenol (73% @ 80-120%)

C9J0351-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Pentachlorophenol (27% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 3005A/200.7

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.0002)		6020A		5	KJK	10/18/19 12:31	100	10	CJ91739
Arsenic	ND (0.0005)		7010		1	KJK	10/22/19 16:52	100	10	CJ91739
Barium	**0.014** (0.005)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Beryllium	ND (0.0001)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Cadmium	ND (0.0005)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Chromium	ND (0.002)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Cobalt	ND (0.002)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Copper	ND (0.002)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Iron	**0.094** (0.010)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Lead	ND (0.002)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Mercury	ND (0.00020)		7470A		1	MKS	10/21/19 10:38	20	40	CJ91727
Nickel	ND (0.005)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Selenium	ND (0.005)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Silver	ND (0.001)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Thallium	ND (0.0001)		6020A		5	KJK	10/18/19 12:31	100	10	CJ91739
Vanadium	ND (0.002)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739
Zinc	**0.015** (0.005)		6010C		1	KJK	10/18/19 17:44	100	10	CJ91739

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: IBM
Prepared: 10/22/19 15:08

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
4,4´-DDE	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
4,4´-DDT	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Aldrin	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
alpha-BHC	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
alpha-Chlordane	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
beta-BHC	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Chlordane (Total)	ND (0.000467)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
delta-BHC	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Dieldrin	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Endosulfan I	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Endosulfan II	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Endosulfan Sulfate	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Endrin	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Endrin Aldehyde	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Endrin Ketone	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
gamma-Chlordane	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Heptachlor	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Heptachlor Epoxide	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Hexachlorobenzene	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Methoxychlor	ND (0.000047)		8081B		1	10/23/19 9:10	C9J0393	CJ92201
Toxaphene	ND (0.00121)		8081B		1	10/23/19 9:10	C9J0393	CJ92201

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*84 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*83 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 10/17/19 11:08

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1221	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1232	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1242	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1248	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1254	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1260	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1262	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702
Aroclor 1268	ND (0.09)		8082A		1	10/18/19 1:01		CJ91702

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*62 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 10/17/19 10:39

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	10/17/19 14:14	C9J0323	CJ91613

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*99 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
1-Chlorohexane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
2-Butanone	ND (0.0100)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
2-Chlorotoluene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
2-Hexanone	ND (0.0100)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
4-Chlorotoluene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Acetone	ND (0.0100)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Benzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Bromobenzene	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Bromodichloromethane	ND (0.0006)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Bromoform	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Bromomethane	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Carbon Disulfide	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Chlorobenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Chloroethane	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Chloroform	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Chloromethane	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Dibromochloromethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Dibromomethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Diethyl Ether	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Di-isopropyl ether	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Ethylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Hexachloroethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Isopropylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Methylene Chloride	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Naphthalene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
n-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
n-Propylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
sec-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Styrene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
tert-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Tetrachloroethene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Toluene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Trichloroethene	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Vinyl Acetate	ND (0.0050)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Vinyl Chloride	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Xylene O	ND (0.0010)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Xylene P,M	ND (0.0020)		8260B		1	10/17/19 13:37	C9J0334	CJ91749
Xylenes (Total)	ND (0.00200)		8260B		1	10/17/19 13:37		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*124 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*81 %*		*70-130*
Surrogate: Dibromofluoromethane	*115 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 10/17/19 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
1,2-Dichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
1,3-Dichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
1,4-Dichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,4-Dichlorophenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,4-Dimethylphenol	ND (0.047)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,4-Dinitrophenol	ND (0.047)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,4-Dinitrotoluene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2,6-Dinitrotoluene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2-Chloronaphthalene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2-Chlorophenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2-Methylphenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2-Nitroaniline	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
2-Nitrophenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
3+4-Methylphenol	ND (0.019)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
3-Nitroaniline	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4-Chloroaniline	ND (0.019)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4-Nitroaniline	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
4-Nitrophenol	ND (0.047)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Acetophenone	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Aniline	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Azobenzene	ND (0.019)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Benzoic Acid	ND (0.093)		8270D		1	10/18/19 23:03	C9J0339	CJ91614

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 10/17/19 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Butylbenzylphthalate	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Carbazole	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Dibenzofuran	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Diethylphthalate	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Dimethylphthalate	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Di-n-butylphthalate	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Di-n-octylphthalate	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Hexachlorobutadiene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Hexachloroethane	ND (0.005)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Isophorone	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Nitrobenzene	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
N-Nitrosodimethylamine	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
N-nitrosodiphenylamine	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Phenol	ND (0.009)		8270D		1	10/18/19 23:03	C9J0339	CJ91614
Pyridine	ND (0.093)		8270D		1	10/18/19 23:03	C9J0339	CJ91614

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*85 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*104 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*94 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*
Surrogate: 2-Fluorophenol	*88 %*		*15-110*
Surrogate: Nitrobenzene-d5	*93 %*		*30-130*
Surrogate: Phenol-d6	*98 %*		*15-110*
Surrogate: p-Terphenyl-d14	*90 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: IBM
Prepared: 10/17/19 13:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Acenaphthene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Acenaphthylene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Anthracene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Chrysene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Fluoranthene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Fluorene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Naphthalene	**0.00047** (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Pentachlorophenol	ND (0.00084)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Phenanthrene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614
Pyrene	ND (0.00019)		8270D SIM		1	10/19/19 0:07	C9J0351	CJ91614

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 10/16/19 07:15
Percent Solids: N/A

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-01
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**8.64** (0.500)		9060		1	ZZZ	10/17/19 20:58	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 3005A/200.7

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.0002)		6020A		5	KJK	10/18/19 12:36	100	10	CJ91739
Arsenic	**0.002** (0.0005)		7010		1	KJK	10/22/19 19:05	100	10	CJ91739
Barium	**0.069** (0.005)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Beryllium	ND (0.0001)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Cadmium	ND (0.0005)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Chromium	ND (0.002)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Cobalt	**0.004** (0.002)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Copper	ND (0.002)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Iron	**21.2** (0.010)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Lead	ND (0.002)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Mercury	ND (0.00020)		7470A		1	MKS	10/21/19 10:40	20	40	CJ91727
Nickel	**0.009** (0.005)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Selenium	ND (0.005)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Silver	ND (0.001)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Thallium	ND (0.0001)		6020A		5	KJK	10/18/19 12:36	100	10	CJ91739
Vanadium	ND (0.002)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739
Zinc	**0.023** (0.005)		6010C		1	KJK	10/18/19 17:48	100	10	CJ91739

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: IBM
Prepared: 10/22/19 15:08

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
4,4´-DDE	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
4,4´-DDT	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Aldrin	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
alpha-BHC	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
alpha-Chlordane	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
beta-BHC	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Chlordane (Total)	ND (0.000467)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
delta-BHC	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Dieldrin	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Endosulfan I	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Endosulfan II	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Endosulfan Sulfate	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Endrin	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Endrin Aldehyde	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Endrin Ketone	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
gamma-Chlordane	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Heptachlor	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Heptachlor Epoxide	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Hexachlorobenzene	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Methoxychlor	ND (0.000047)		8081B		1	10/23/19 9:40	C9J0393	CJ92201
Toxaphene	ND (0.00121)		8081B		1	10/23/19 9:40	C9J0393	CJ92201

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*45 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*59 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*55 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 10/17/19 11:08

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1221	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1232	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1242	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1248	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1254	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1260	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1262	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702
Aroclor 1268	ND (0.09)		8082A		1	10/18/19 1:21		CJ91702

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*40 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*38 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*54 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 10/17/19 10:39

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.63** (0.19)		8100M		1	10/17/19 14:46	C9J0323	CJ91613

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
1-Chlorohexane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
2-Butanone	ND (0.0100)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
2-Chlorotoluene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
2-Hexanone	ND (0.0100)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
4-Chlorotoluene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Acetone	**0.0165** (0.0100)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Benzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Bromobenzene	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Bromodichloromethane	ND (0.0006)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Bromoform	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Bromomethane	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Carbon Disulfide	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Chlorobenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Chloroethane	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Chloroform	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Chloromethane	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Dibromochloromethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Dibromomethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Diethyl Ether	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Di-isopropyl ether	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Ethylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Hexachloroethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Isopropylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Methylene Chloride	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Naphthalene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
n-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
n-Propylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
sec-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Styrene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
tert-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Tetrachloroethene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Toluene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Trichloroethene	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Vinyl Acetate	ND (0.0050)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Vinyl Chloride	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Xylene O	ND (0.0010)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Xylene P,M	ND (0.0020)		8260B		1	10/17/19 14:03	C9J0334	CJ91749
Xylenes (Total)	ND (0.00200)		8260B		1	10/17/19 14:03		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*123 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*87 %*		*70-130*
Surrogate: Dibromofluoromethane	*113 %*		*70-130*
Surrogate: Toluene-d8	*101 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 10/17/19 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
1,2-Dichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
1,3-Dichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
1,4-Dichlorobenzene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,4-Dichlorophenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,4-Dimethylphenol	ND (0.047)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,4-Dinitrophenol	ND (0.047)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,4-Dinitrotoluene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2,6-Dinitrotoluene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2-Chloronaphthalene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2-Chlorophenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2-Methylphenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2-Nitroaniline	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
2-Nitrophenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
3+4-Methylphenol	ND (0.019)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
3-Nitroaniline	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4-Chloroaniline	ND (0.019)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4-Nitroaniline	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
4-Nitrophenol	ND (0.047)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Acetophenone	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Aniline	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Azobenzene	ND (0.019)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Benzoic Acid	ND (0.093)		8270D		1	10/18/19 23:29	C9J0339	CJ91614

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 10/17/19 13:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Butylbenzylphthalate	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Carbazole	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Dibenzofuran	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Diethylphthalate	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Dimethylphthalate	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Di-n-butylphthalate	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Di-n-octylphthalate	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Hexachlorobutadiene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Hexachloroethane	ND (0.005)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Isophorone	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Nitrobenzene	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
N-Nitrosodimethylamine	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
N-nitrosodiphenylamine	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Phenol	ND (0.009)		8270D		1	10/18/19 23:29	C9J0339	CJ91614
Pyridine	ND (0.093)		8270D		1	10/18/19 23:29	C9J0339	CJ91614

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*79 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*82 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*89 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*76 %*		*30-130*
Surrogate: 2-Fluorophenol	*86 %*		*15-110*
Surrogate: Nitrobenzene-d5	*88 %*		*30-130*
Surrogate: Phenol-d6	*91 %*		*15-110*
Surrogate: p-Terphenyl-d14	*45 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: IBM
Prepared: 10/17/19 13:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Acenaphthene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Acenaphthylene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Anthracene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Chrysene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Fluoranthene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Fluorene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Naphthalene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Pentachlorophenol	ND (0.00084)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Phenanthrene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614
Pyrene	ND (0.00019)		8270D SIM		1	10/19/19 0:55	C9J0351	CJ91614

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 10/16/19 10:10
Percent Solids: N/A

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-02
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**26.9** (5.00)		9060		10	ZZZ	10/17/19 21:58	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/16/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-03
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
1-Chlorohexane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
2-Butanone	ND (0.0100)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
2-Chlorotoluene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
2-Hexanone	ND (0.0100)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
4-Chlorotoluene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Acetone	ND (0.0100)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Benzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Bromobenzene	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/16/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-03
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Bromodichloromethane	ND (0.0006)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Bromoform	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Bromomethane	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Carbon Disulfide	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Chlorobenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Chloroethane	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Chloroform	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Chloromethane	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Dibromochloromethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Dibromomethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Diethyl Ether	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Di-isopropyl ether	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Ethylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Hexachloroethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Isopropylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Methylene Chloride	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Naphthalene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
n-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
n-Propylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
sec-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Styrene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
tert-Butylbenzene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Tetrachloroethene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/16/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0562
ESS Laboratory Sample ID: 19J0562-03
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Toluene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Trichloroethene	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Vinyl Acetate	ND (0.0050)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Vinyl Chloride	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Xylene O	ND (0.0010)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Xylene P,M	ND (0.0020)		8260B		1	10/17/19 12:20	C9J0334	CJ91749
Xylenes (Total)	ND (0.00200)		8260B		1	10/17/19 12:20		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*121 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*82 %*		*70-130*
Surrogate: Dibromofluoromethane	*114 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CJ91727 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00570	0.00020	mg/L	0.006042		94	80-120			
LCS Dup										
Mercury	0.00586	0.00020	mg/L	0.006042		97	80-120	3	20	
Batch CJ91739 - 3005A/200.7										
Blank										
Barium	ND	0.005	mg/L							
Beryllium	ND	0.0001	mg/L							
Cadmium	ND	0.0005	mg/L							
Chromium	ND	0.002	mg/L							
Cobalt	ND	0.002	mg/L							
Copper	ND	0.002	mg/L							
Iron	ND	0.010	mg/L							
Lead	ND	0.002	mg/L							
Nickel	ND	0.005	mg/L							
Selenium	ND	0.005	mg/L							
Silver	ND	0.001	mg/L							
Vanadium	ND	0.002	mg/L							
Zinc	ND	0.005	mg/L							
Blank										
Antimony	ND	0.0002	mg/L							
Thallium	ND	0.0001	mg/L							
Blank										
Arsenic	ND	0.0005	mg/L							
LCS										
Barium	0.045	0.005	mg/L	0.05000		91	80-120			
Beryllium	0.0044	0.0001	mg/L	0.005000		88	80-120			
Cadmium	0.0216	0.0005	mg/L	0.02500		87	80-120			
Chromium	0.045	0.002	mg/L	0.05000		90	80-120			
Cobalt	0.046	0.002	mg/L	0.05000		92	80-120			
Copper	0.046	0.002	mg/L	0.05000		93	80-120			
Iron	0.222	0.010	mg/L	0.2500		89	80-120			
Lead	0.045	0.002	mg/L	0.05000		90	80-120			
Nickel	0.046	0.005	mg/L	0.05000		91	80-120			
Selenium	0.087	0.005	mg/L	0.1000		87	80-120			
Silver	0.023	0.001	mg/L	0.02500		90	80-120			
Vanadium	0.045	0.002	mg/L	0.05000		90	80-120			
Zinc	0.048	0.005	mg/L	0.05000		96	80-120			
LCS										
Antimony	0.047	0.001	mg/L	0.05000		94	80-120			
Arsenic	0.050	0.012	mg/L	0.05000		101	80-120			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CJ91739 - 3005A/200.7										
Thallium	0.051	0.0005	mg/L	0.05000		101	80-120			
LCS Dup										
Barium	0.047	0.005	mg/L	0.05000		93	80-120	3	20	
Beryllium	0.0044	0.0001	mg/L	0.005000		88	80-120	0.4	20	
Cadmium	0.0224	0.0005	mg/L	0.02500		90	80-120	3	20	
Chromium	0.046	0.002	mg/L	0.05000		91	80-120	2	20	
Cobalt	0.047	0.002	mg/L	0.05000		94	80-120	2	20	
Copper	0.048	0.002	mg/L	0.05000		95	80-120	3	20	
Iron	0.224	0.010	mg/L	0.2500		90	80-120	1	20	
Lead	0.047	0.002	mg/L	0.05000		94	80-120	4	20	
Nickel	0.047	0.005	mg/L	0.05000		94	80-120	3	20	
Selenium	0.091	0.005	mg/L	0.1000		91	80-120	4	20	
Silver	0.023	0.001	mg/L	0.02500		93	80-120	3	20	
Vanadium	0.046	0.002	mg/L	0.05000		92	80-120	2	20	
Zinc	0.049	0.005	mg/L	0.05000		99	80-120	3	20	
LCS Dup										
Antimony	0.048	0.001	mg/L	0.05000		97	80-120	3	20	
Arsenic	0.050	0.012	mg/L	0.05000		99	80-120	2	20	
Thallium	0.051	0.0005	mg/L	0.05000		103	80-120	1	20	
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
Chlordane (Total)	ND	0.000500	mg/L							
Chlordane (Total) [2C]	ND	0.000500	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
Endosulfan I [2C]	ND	0.000050	mg/L							
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Toxaphene	ND	0.00130	mg/L							
Toxaphene [2C]	ND	0.00130	mg/L							
Surrogate: Decachlorobiphenyl	*0.000225*		mg/L	*0.0002500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000228*		mg/L	*0.0002500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000165*		mg/L	*0.0002500*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000174*		mg/L	*0.0002500*		*69*	*30-150*			
LCS										
4,4´-DDD	0.000233	0.000050	mg/L	0.0002500		93	40-140			
4,4´-DDD [2C]	0.000226	0.000050	mg/L	0.0002500		91	40-140			
4,4´-DDE	0.000245	0.000050	mg/L	0.0002500		98	40-140			
4,4´-DDE [2C]	0.000227	0.000050	mg/L	0.0002500		91	40-140			
4,4´-DDT	0.000237	0.000050	mg/L	0.0002500		95	40-140			
4,4´-DDT [2C]	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Aldrin	0.000195	0.000050	mg/L	0.0002500		78	40-140			
Aldrin [2C]	0.000190	0.000050	mg/L	0.0002500		76	40-140			
alpha-BHC	0.000208	0.000050	mg/L	0.0002500		83	40-140			
alpha-BHC [2C]	0.000205	0.000050	mg/L	0.0002500		82	40-140			
alpha-Chlordane	0.000214	0.000050	mg/L	0.0002500		86	40-140			
alpha-Chlordane [2C]	0.000211	0.000050	mg/L	0.0002500		84	40-140			
beta-BHC	0.000229	0.000050	mg/L	0.0002500		91	40-140			
beta-BHC [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
delta-BHC	0.000216	0.000050	mg/L	0.0002500		87	40-140			
delta-BHC [2C]	0.000207	0.000050	mg/L	0.0002500		83	40-140			
Dieldrin	0.000234	0.000050	mg/L	0.0002500		94	40-140			
Dieldrin [2C]	0.000224	0.000050	mg/L	0.0002500		90	40-140			
Endosulfan I	0.000208	0.000050	mg/L	0.0002500		83	40-140			
Endosulfan I [2C]	0.000210	0.000050	mg/L	0.0002500		84	40-140			
Endosulfan II	0.000220	0.000050	mg/L	0.0002500		88	40-140			
Endosulfan II [2C]	0.000211	0.000050	mg/L	0.0002500		84	40-140			
Endosulfan Sulfate	0.000227	0.000050	mg/L	0.0002500		91	40-140			
Endosulfan Sulfate [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Endrin	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Endrin [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140			
Endrin Aldehyde	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Endrin Aldehyde [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140			
Endrin Ketone	0.000236	0.000050	mg/L	0.0002500		94	40-140			
Endrin Ketone [2C]	0.000232	0.000050	mg/L	0.0002500		93	40-140			
gamma-BHC (Lindane)	0.000218	0.000050	mg/L	0.0002500		87	40-140			
gamma-BHC (Lindane) [2C]	0.000212	0.000050	mg/L	0.0002500		85	40-140			
gamma-Chlordane	0.000215	0.000050	mg/L	0.0002500		86	40-140			
gamma-Chlordane [2C]	0.000210	0.000050	mg/L	0.0002500		84	40-140			
Heptachlor	0.000206	0.000050	mg/L	0.0002500		83	40-140			
Heptachlor [2C]	0.000206	0.000050	mg/L	0.0002500		82	40-140			
Heptachlor Epoxide	0.000238	0.000050	mg/L	0.0002500		95	40-140			
Heptachlor Epoxide [2C]	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Hexachlorobenzene	0.000210	0.000050	mg/L	0.0002500		84	40-140			
Hexachlorobenzene [2C]	0.000207	0.000050	mg/L	0.0002500		83	40-140			
Methoxychlor	0.000235	0.000050	mg/L	0.0002500		94	40-140			
Methoxychlor [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140			
Surrogate: Decachlorobiphenyl	*0.000241*		mg/L	*0.0002500*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000234*		mg/L	*0.0002500*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000171*		mg/L	*0.0002500*		*68*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000184*		mg/L	*0.0002500*		*74*	*30-150*			
LCS Dup										
4,4´-DDD	0.000234	0.000050	mg/L	0.0002500		94	40-140	0.4	20	
4,4´-DDD [2C]	0.000228	0.000050	mg/L	0.0002500		91	40-140	0.7	20	
4,4´-DDE	0.000247	0.000050	mg/L	0.0002500		99	40-140	0.8	20	
4,4´-DDE [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140	2	20	
4,4´-DDT	0.000244	0.000050	mg/L	0.0002500		98	40-140	3	20	
4,4´-DDT [2C]	0.000236	0.000050	mg/L	0.0002500		95	40-140	3	20	
Aldrin	0.000218	0.000050	mg/L	0.0002500		87	40-140	11	20	
Aldrin [2C]	0.000212	0.000050	mg/L	0.0002500		85	40-140	11	20	
alpha-BHC	0.000222	0.000050	mg/L	0.0002500		89	40-140	7	20	
alpha-BHC [2C]	0.000219	0.000050	mg/L	0.0002500		88	40-140	7	20	
alpha-Chlordane	0.000227	0.000050	mg/L	0.0002500		91	40-140	6	20	

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
alpha-Chlordane [2C]	0.000221	0.000050	mg/L	0.0002500		89	40-140	5	20	
beta-BHC	0.000237	0.000050	mg/L	0.0002500		95	40-140	3	20	
beta-BHC [2C]	0.000234	0.000050	mg/L	0.0002500		94	40-140	4	20	
delta-BHC	0.000234	0.000050	mg/L	0.0002500		94	40-140	8	20	
delta-BHC [2C]	0.000213	0.000050	mg/L	0.0002500		85	40-140	3	20	
Dieldrin	0.000242	0.000050	mg/L	0.0002500		97	40-140	3	20	
Dieldrin [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140	4	20	
Endosulfan I	0.000218	0.000050	mg/L	0.0002500		87	40-140	5	20	
Endosulfan I [2C]	0.000219	0.000050	mg/L	0.0002500		87	40-140	4	20	
Endosulfan II	0.000226	0.000050	mg/L	0.0002500		90	40-140	3	20	
Endosulfan II [2C]	0.000217	0.000050	mg/L	0.0002500		87	40-140	3	20	
Endosulfan Sulfate	0.000231	0.000050	mg/L	0.0002500		93	40-140	2	20	
Endosulfan Sulfate [2C]	0.000228	0.000050	mg/L	0.0002500		91	40-140	2	20	
Endrin	0.000237	0.000050	mg/L	0.0002500		95	40-140	3	20	
Endrin [2C]	0.000229	0.000050	mg/L	0.0002500		91	40-140	3	20	
Endrin Aldehyde	0.000231	0.000050	mg/L	0.0002500		92	40-140	0.4	20	
Endrin Aldehyde [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140	0.7	20	
Endrin Ketone	0.000242	0.000050	mg/L	0.0002500		97	40-140	3	20	
Endrin Ketone [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	2	20	
gamma-BHC (Lindane)	0.000230	0.000050	mg/L	0.0002500		92	40-140	5	20	
gamma-BHC (Lindane) [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140	6	20	
gamma-Chlordane	0.000227	0.000050	mg/L	0.0002500		91	40-140	6	20	
gamma-Chlordane [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140	6	20	
Heptachlor	0.000226	0.000050	mg/L	0.0002500		90	40-140	9	20	
Heptachlor [2C]	0.000224	0.000050	mg/L	0.0002500		90	40-140	9	20	
Heptachlor Epoxide	0.000248	0.000050	mg/L	0.0002500		99	40-140	4	20	
Heptachlor Epoxide [2C]	0.000240	0.000050	mg/L	0.0002500		96	40-140	4	20	
Hexachlorobenzene	0.000226	0.000050	mg/L	0.0002500		91	40-140	7	20	
Hexachlorobenzene [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140	7	20	
Methoxychlor	0.000237	0.000050	mg/L	0.0002500		95	40-140	0.6	20	
Methoxychlor [2C]	0.000246	0.000050	mg/L	0.0002500		99	40-140	6	20	
Surrogate: Decachlorobiphenyl	*0.000233*		mg/L	*0.0002500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000227*		mg/L	*0.0002500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000199*		mg/L	*0.0002500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000209*		mg/L	*0.0002500*		*84*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ91702 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ91702 - 3510C										
Aroclor 1232 [2C]	ND	0.05	ug/L							
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							
Surrogate: Decachlorobiphenyl	*0.0381*		ug/L	*0.05000*		*76*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0364*		ug/L	*0.05000*		*73*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0268*		ug/L	*0.05000*		*54*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0291*		ug/L	*0.05000*		*58*	*30-150*			
LCS										
Aroclor 1016	0.84	0.10	ug/L	1.000		84	40-140			
Aroclor 1016 [2C]	0.91	0.10	ug/L	1.000		91	40-140			
Aroclor 1260	0.95	0.10	ug/L	1.000		95	40-140			
Aroclor 1260 [2C]	1.00	0.10	ug/L	1.000		100	40-140			
Surrogate: Decachlorobiphenyl	*0.0438*		ug/L	*0.05000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0418*		ug/L	*0.05000*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0301*		ug/L	*0.05000*		*60*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0304*		ug/L	*0.05000*		*61*	*30-150*			
LCS Dup										
Aroclor 1016	0.90	0.10	ug/L	1.000		90	40-140	7	20	
Aroclor 1016 [2C]	0.98	0.10	ug/L	1.000		98	40-140	8	20	
Aroclor 1260	1.00	0.10	ug/L	1.000		100	40-140	5	20	
Aroclor 1260 [2C]	1.07	0.10	ug/L	1.000		107	40-140	6	20	
Surrogate: Decachlorobiphenyl	*0.0445*		ug/L	*0.05000*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0427*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0310*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0310*		ug/L	*0.05000*		*62*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CJ91613 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							

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8100M Total Petroleum Hydrocarbons

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CJ91613 - 3510C										
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.101*		mg/L	*0.1000*		*101*	*40-140*			
LCS										
Decane (C10)	0.030	0.005	mg/L	0.05000		59	40-140			
Docosane (C22)	0.047	0.005	mg/L	0.05000		94	40-140			
Dodecane (C12)	0.038	0.005	mg/L	0.05000		76	40-140			
Eicosane (C20)	0.046	0.005	mg/L	0.05000		93	40-140			
Hexacosane (C26)	0.047	0.005	mg/L	0.05000		94	40-140			
Hexadecane (C16)	0.045	0.005	mg/L	0.05000		91	40-140			
Nonadecane (C19)	0.050	0.005	mg/L	0.05000		100	40-140			
Nonane (C9)	0.025	0.005	mg/L	0.05000		50	30-140			
Octacosane (C28)	0.048	0.005	mg/L	0.05000		95	40-140			
Octadecane (C18)	0.046	0.005	mg/L	0.05000		92	40-140			
Tetracosane (C24)	0.047	0.005	mg/L	0.05000		94	40-140			
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140			
Total Petroleum Hydrocarbons	0.610	0.20	mg/L	0.7000		87	40-140			
Triacontane (C30)	0.048	0.005	mg/L	0.05000		96	40-140			
Surrogate: O-Terphenyl	*0.0924*		mg/L	*0.1000*		*92*	*40-140*			
LCS Dup										
Decane (C10)	0.032	0.005	mg/L	0.05000		64	40-140	8	25	
Docosane (C22)	0.049	0.005	mg/L	0.05000		98	40-140	4	25	
Dodecane (C12)	0.039	0.005	mg/L	0.05000		77	40-140	2	25	
Eicosane (C20)	0.048	0.005	mg/L	0.05000		96	40-140	3	25	
Hexacosane (C26)	0.049	0.005	mg/L	0.05000		98	40-140	4	25	
Hexadecane (C16)	0.047	0.005	mg/L	0.05000		94	40-140	3	25	
Nonadecane (C19)	0.052	0.005	mg/L	0.05000		104	40-140	3	25	
Nonane (C9)	0.027	0.005	mg/L	0.05000		55	30-140	9	25	
Octacosane (C28)	0.049	0.005	mg/L	0.05000		99	40-140	4	25	
Octadecane (C18)	0.048	0.005	mg/L	0.05000		95	40-140	3	25	
Tetracosane (C24)	0.049	0.005	mg/L	0.05000		98	40-140	4	25	
Tetradecane (C14)	0.045	0.005	mg/L	0.05000		90	40-140	4	25	
Total Petroleum Hydrocarbons	0.634	0.20	mg/L	0.7000		91	40-140	4	25	
Triacontane (C30)	0.050	0.005	mg/L	0.05000		99	40-140	4	25	

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ91613 - 3510C										
Surrogate: O-Terphenyl	*0.0931*		mg/L	*0.1000*		*93*	*40-140*			
8260B Volatile Organic Compounds										
Batch CJ91749 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ91749 - 5030B										
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0303*		mg/L	*0.02500*		*121*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0207*		mg/L	*0.02500*		*83*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0282*		mg/L	*0.02500*		*113*	*70-130*			
Surrogate: Toluene-d8	*0.0255*		mg/L	*0.02500*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130			
1,1,1-Trichloroethane	10.4		ug/L	10.00		104	70-130			
1,1,2,2-Tetrachloroethane	11.6		ug/L	10.00		116	70-130			
1,1,2-Trichloroethane	10.4		ug/L	10.00		104	70-130			
1,1-Dichloroethane	10.8		ug/L	10.00		108	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ91749 - 5030B										
1,1-Dichloroethene	10.9		ug/L	10.00		109	70-130			
1,1-Dichloropropene	10.9		ug/L	10.00		109	70-130			
1,2,3-Trichlorobenzene	9.20		ug/L	10.00		92	70-130			
1,2,3-Trichloropropane	10.3		ug/L	10.00		103	70-130			
1,2,4-Trichlorobenzene	8.50		ug/L	10.00		85	70-130			
1,2,4-Trimethylbenzene	9.94		ug/L	10.00		99	70-130			
1,2-Dibromo-3-Chloropropane	9.28		ug/L	10.00		93	70-130			
1,2-Dibromoethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2-Dichloroethane	10.3		ug/L	10.00		103	70-130			
1,2-Dichloropropane	10.2		ug/L	10.00		102	70-130			
1,3,5-Trimethylbenzene	10.1		ug/L	10.00		101	70-130			
1,3-Dichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,3-Dichloropropane	10.7		ug/L	10.00		107	70-130			
1,4-Dichlorobenzene	10.7		ug/L	10.00		107	70-130			
1,4-Dioxane - Screen	188		ug/L	200.0		94	0-332			
1-Chlorohexane	8.80		ug/L	10.00		88	70-130			
2,2-Dichloropropane	11.4		ug/L	10.00		114	70-130			
2-Butanone	53.4		ug/L	50.00		107	70-130			
2-Chlorotoluene	11.0		ug/L	10.00		110	70-130			
2-Hexanone	47.1		ug/L	50.00		94	70-130			
4-Chlorotoluene	11.1		ug/L	10.00		111	70-130			
4-Isopropyltoluene	10.7		ug/L	10.00		107	70-130			
4-Methyl-2-Pentanone	49.5		ug/L	50.00		99	70-130			
Acetone	57.3		ug/L	50.00		115	70-130			
Benzene	11.0		ug/L	10.00		110	70-130			
Bromobenzene	10.3		ug/L	10.00		103	70-130			
Bromochloromethane	10.5		ug/L	10.00		105	70-130			
Bromodichloromethane	10.4		ug/L	10.00		104	70-130			
Bromoform	9.86		ug/L	10.00		99	70-130			
Bromomethane	11.0		ug/L	10.00		110	70-130			
Carbon Disulfide	11.6		ug/L	10.00		116	70-130			
Carbon Tetrachloride	11.0		ug/L	10.00		110	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	9.46		ug/L	10.00		95	70-130			
Chloroform	10.7		ug/L	10.00		107	70-130			
Chloromethane	10.7		ug/L	10.00		107	70-130			
cis-1,2-Dichloroethene	10.7		ug/L	10.00		107	70-130			
cis-1,3-Dichloropropene	9.09		ug/L	10.00		91	70-130			
Dibromochloromethane	10.1		ug/L	10.00		101	70-130			
Dibromomethane	10.7		ug/L	10.00		107	70-130			
Dichlorodifluoromethane	9.05		ug/L	10.00		90	70-130			
Diethyl Ether	10.7		ug/L	10.00		107	70-130			
Di-isopropyl ether	9.92		ug/L	10.00		99	70-130			
Ethyl tertiary-butyl ether	8.85		ug/L	10.00		88	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ91749 - 5030B										
Ethylbenzene	9.46		ug/L	10.00		95	70-130			
Hexachlorobutadiene	11.4		ug/L	10.00		114	70-130			
Hexachloroethane	10.8		ug/L	10.00		108	70-130			
Isopropylbenzene	10.6		ug/L	10.00		106	70-130			
Methyl tert-Butyl Ether	10.8		ug/L	10.00		108	70-130			
Methylene Chloride	11.9		ug/L	10.00		119	70-130			
Naphthalene	8.32		ug/L	10.00		83	70-130			
n-Butylbenzene	9.20		ug/L	10.00		92	70-130			
n-Propylbenzene	10.5		ug/L	10.00		105	70-130			
sec-Butylbenzene	9.67		ug/L	10.00		97	70-130			
Styrene	7.74		ug/L	10.00		77	70-130			
tert-Butylbenzene	9.19		ug/L	10.00		92	70-130			
Tertiary-amyl methyl ether	9.22		ug/L	10.00		92	70-130			
Tetrachloroethene	8.35		ug/L	10.00		84	70-130			
Tetrahydrofuran	10.2		ug/L	10.00		102	70-130			
Toluene	10.4		ug/L	10.00		104	70-130			
trans-1,2-Dichloroethene	10.3		ug/L	10.00		103	70-130			
trans-1,3-Dichloropropene	8.47		ug/L	10.00		85	70-130			
Trichloroethene	10.2		ug/L	10.00		102	70-130			
Trichlorofluoromethane	10.7		ug/L	10.00		107	70-130			
Vinyl Acetate	10.8		ug/L	10.00		108	70-130			
Vinyl Chloride	10.3		ug/L	10.00		103	70-130			
Xylene O	9.33		ug/L	10.00		93	70-130			
Xylene P,M	18.5		ug/L	20.00		92	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0256*		mg/L	*0.02500*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0249*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0262*		mg/L	*0.02500*		*105*	*70-130*			
Surrogate: Toluene-d8	*0.0241*		mg/L	*0.02500*		*96*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.3		ug/L	10.00		103	70-130	0.2	25	
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130	2	25	
1,1,2,2-Tetrachloroethane	11.3		ug/L	10.00		113	70-130	2	25	
1,1,2-Trichloroethane	10.2		ug/L	10.00		102	70-130	2	25	
1,1-Dichloroethane	10.6		ug/L	10.00		106	70-130	2	25	
1,1-Dichloroethene	10.6		ug/L	10.00		106	70-130	3	25	
1,1-Dichloropropene	10.8		ug/L	10.00		108	70-130	0.6	25	
1,2,3-Trichlorobenzene	8.70		ug/L	10.00		87	70-130	6	25	
1,2,3-Trichloropropane	10.0		ug/L	10.00		100	70-130	3	25	
1,2,4-Trichlorobenzene	8.16		ug/L	10.00		82	70-130	4	25	
1,2,4-Trimethylbenzene	9.60		ug/L	10.00		96	70-130	3	25	
1,2-Dibromo-3-Chloropropane	9.13		ug/L	10.00		91	70-130	2	25	
1,2-Dibromoethane	9.91		ug/L	10.00		99	70-130	1	25	
1,2-Dichlorobenzene	9.89		ug/L	10.00		99	70-130	5	25	
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130	3	25	
1,2-Dichloropropane	10.0		ug/L	10.00		100	70-130	2	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ91749 - 5030B										
1,3,5-Trimethylbenzene	9.89		ug/L	10.00		99	70-130	2	25	
1,3-Dichlorobenzene	10.4		ug/L	10.00		104	70-130	5	25	
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130	0.7	25	
1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	6	25	
1,4-Dioxane - Screen	199		ug/L	200.0		100	0-332	6	200	
1-Chlorohexane	8.82		ug/L	10.00		88	70-130	0.2	25	
2,2-Dichloropropane	11.1		ug/L	10.00		111	70-130	3	25	
2-Butanone	51.9		ug/L	50.00		104	70-130	3	25	
2-Chlorotoluene	10.6		ug/L	10.00		106	70-130	4	25	
2-Hexanone	47.1		ug/L	50.00		94	70-130	0.1	25	
4-Chlorotoluene	10.8		ug/L	10.00		108	70-130	2	25	
4-Isopropyltoluene	10.4		ug/L	10.00		104	70-130	3	25	
4-Methyl-2-Pentanone	48.1		ug/L	50.00		96	70-130	3	25	
Acetone	50.8		ug/L	50.00		102	70-130	12	25	
Benzene	10.8		ug/L	10.00		108	70-130	2	25	
Bromobenzene	10.0		ug/L	10.00		100	70-130	3	25	
Bromochloromethane	10.1		ug/L	10.00		101	70-130	4	25	
Bromodichloromethane	10.1		ug/L	10.00		101	70-130	3	25	
Bromoform	9.76		ug/L	10.00		98	70-130	1	25	
Bromomethane	10.8		ug/L	10.00		108	70-130	2	25	
Carbon Disulfide	11.2		ug/L	10.00		112	70-130	4	25	
Carbon Tetrachloride	10.4		ug/L	10.00		104	70-130	5	25	
Chlorobenzene	10.0		ug/L	10.00		100	70-130	0.4	25	
Chloroethane	9.39		ug/L	10.00		94	70-130	0.7	25	
Chloroform	10.5		ug/L	10.00		105	70-130	3	25	
Chloromethane	10.5		ug/L	10.00		105	70-130	2	25	
cis-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	3	25	
cis-1,3-Dichloropropene	8.74		ug/L	10.00		87	70-130	4	25	
Dibromochloromethane	9.90		ug/L	10.00		99	70-130	2	25	
Dibromomethane	10.3		ug/L	10.00		103	70-130	4	25	
Dichlorodifluoromethane	8.81		ug/L	10.00		88	70-130	3	25	
Diethyl Ether	10.6		ug/L	10.00		106	70-130	0.8	25	
Di-isopropyl ether	9.72		ug/L	10.00		97	70-130	2	25	
Ethyl tertiary-butyl ether	8.97		ug/L	10.00		90	70-130	1	25	
Ethylbenzene	9.46		ug/L	10.00		95	70-130	0	25	
Hexachlorobutadiene	10.4		ug/L	10.00		104	70-130	9	25	
Hexachloroethane	10.1		ug/L	10.00		101	70-130	7	25	
Isopropylbenzene	10.4		ug/L	10.00		104	70-130	2	25	
Methyl tert-Butyl Ether	10.7		ug/L	10.00		107	70-130	1	25	
Methylene Chloride	11.4		ug/L	10.00		114	70-130	5	25	
Naphthalene	7.88		ug/L	10.00		79	70-130	5	25	
n-Butylbenzene	8.90		ug/L	10.00		89	70-130	3	25	
n-Propylbenzene	10.1		ug/L	10.00		101	70-130	4	25	
sec-Butylbenzene	9.33		ug/L	10.00		93	70-130	4	25	
Styrene	7.76		ug/L	10.00		78	70-130	0.3	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ91749 - 5030B										
tert-Butylbenzene	8.90		ug/L	10.00		89	70-130	3	25	
Tertiary-amyl methyl ether	9.00		ug/L	10.00		90	70-130	2	25	
Tetrachloroethene	8.19		ug/L	10.00		82	70-130	2	25	
Tetrahydrofuran	9.58		ug/L	10.00		96	70-130	6	25	
Toluene	10.1		ug/L	10.00		101	70-130	3	25	
trans-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.7	25	
trans-1,3-Dichloropropene	8.10		ug/L	10.00		81	70-130	4	25	
Trichloroethene	10.1		ug/L	10.00		101	70-130	1	25	
Trichlorofluoromethane	10.6		ug/L	10.00		106	70-130	2	25	
Vinyl Acetate	10.6		ug/L	10.00		106	70-130	1	25	
Vinyl Chloride	9.83		ug/L	10.00		98	70-130	4	25	
Xylene O	9.20		ug/L	10.00		92	70-130	1	25	
Xylene P,M	18.2		ug/L	20.00		91	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0251*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0254*		mg/L	*0.02500*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0254*		mg/L	*0.02500*		*102*	*70-130*			
Surrogate: Toluene-d8	*0.0244*		mg/L	*0.02500*		*97*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0765*		mg/L	*0.1000*		*76*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.126*		mg/L	*0.1500*		*84*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.115*		mg/L	*0.1500*		*77*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0890*		mg/L	*0.1000*		*89*	*30-130*			
Surrogate: 2-Fluorophenol	*0.105*		mg/L	*0.1500*		*70*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0871*		mg/L	*0.1000*		*87*	*30-130*			
Surrogate: Phenol-d6	*0.113*		mg/L	*0.1500*		*75*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.103*		mg/L	*0.1000*		*103*	*30-130*			
LCS										
1,1-Biphenyl	0.084	0.010	mg/L	0.1000		84	40-140			
1,2,4-Trichlorobenzene	0.085	0.010	mg/L	0.1000		85	40-140			
1,2-Dichlorobenzene	0.074	0.010	mg/L	0.1000		74	40-140			
1,3-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140			
1,4-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140			
2,3,4,6-Tetrachlorophenol	0.083	0.050	mg/L	0.1000		83	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
2,4,5-Trichlorophenol	0.091	0.010	mg/L	0.1000		91	30-130			
2,4,6-Trichlorophenol	0.093	0.010	mg/L	0.1000		93	30-130			
2,4-Dichlorophenol	0.088	0.010	mg/L	0.1000		88	30-130			
2,4-Dimethylphenol	0.074	0.050	mg/L	0.1000		74	30-130			
2,4-Dinitrophenol	0.098	0.050	mg/L	0.1000		98	30-130			
2,4-Dinitrotoluene	0.084	0.010	mg/L	0.1000		84	40-140			
2,6-Dinitrotoluene	0.083	0.010	mg/L	0.1000		83	40-140			
2-Chloronaphthalene	0.084	0.010	mg/L	0.1000		84	40-140			
2-Chlorophenol	0.076	0.010	mg/L	0.1000		76	30-130			
2-Methylphenol	0.079	0.010	mg/L	0.1000		79	30-130			
2-Nitroaniline	0.070	0.010	mg/L	0.1000		70	40-140			
2-Nitrophenol	0.082	0.010	mg/L	0.1000		82	30-130			
3,3´-Dichlorobenzidine	0.078	0.020	mg/L	0.1000		78	40-140			
3+4-Methylphenol	0.140	0.020	mg/L	0.2000		70	30-130			
3-Nitroaniline	0.078	0.010	mg/L	0.1000		78	40-140			
4,6-Dinitro-2-Methylphenol	0.101	0.050	mg/L	0.1000		101	30-130			
4-Bromophenyl-phenylether	0.094	0.010	mg/L	0.1000		94	40-140			
4-Chloro-3-Methylphenol	0.080	0.010	mg/L	0.1000		80	30-130			
4-Chloroaniline	0.072	0.020	mg/L	0.1000		72	40-140			
4-Chloro-phenyl-phenyl ether	0.089	0.010	mg/L	0.1000		89	40-140			
4-Nitroaniline	0.074	0.010	mg/L	0.1000		74	40-140			
4-Nitrophenol	0.072	0.050	mg/L	0.1000		72	30-130			
Acetophenone	0.068	0.010	mg/L	0.1000		68	40-140			
Aniline	0.062	0.010	mg/L	0.1000		62	40-140			
Azobenzene	0.081	0.020	mg/L	0.1000		81	40-140			
Benzoic Acid	0.079	0.100	mg/L	0.1000		79	40-140			
Benzyl Alcohol	0.080	0.010	mg/L	0.1000		80	40-140			
bis(2-Chloroethoxy)methane	0.081	0.010	mg/L	0.1000		81	40-140			
bis(2-Chloroethyl)ether	0.078	0.010	mg/L	0.1000		78	40-140			
bis(2-chloroisopropyl)Ether	0.078	0.010	mg/L	0.1000		78	40-140			
bis(2-Ethylhexyl)phthalate	0.099	0.006	mg/L	0.1000		99	40-140			
Butylbenzylphthalate	0.093	0.010	mg/L	0.1000		93	40-140			
Carbazole	0.082	0.010	mg/L	0.1000		82	40-140			
Dibenzofuran	0.083	0.010	mg/L	0.1000		83	40-140			
Diethylphthalate	0.084	0.010	mg/L	0.1000		84	40-140			
Dimethylphthalate	0.085	0.010	mg/L	0.1000		85	40-140			
Di-n-butylphthalate	0.085	0.010	mg/L	0.1000		85	40-140			
Di-n-octylphthalate	0.100	0.010	mg/L	0.1000		100	40-140			
Hexachlorobutadiene	0.089	0.010	mg/L	0.1000		89	40-140			
Hexachlorocyclopentadiene	0.081	0.025	mg/L	0.1000		81	40-140			
Hexachloroethane	0.072	0.005	mg/L	0.1000		72	40-140			
Isophorone	0.074	0.010	mg/L	0.1000		74	40-140			
Nitrobenzene	0.080	0.010	mg/L	0.1000		80	40-140			
N-Nitrosodimethylamine	0.067	0.010	mg/L	0.1000		67	40-140			
N-Nitroso-Di-n-Propylamine	0.075	0.010	mg/L	0.1000		75	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
N-nitrosodiphenylamine	0.090	0.010	mg/L	0.1000		90	40-140			
Phenol	0.072	0.010	mg/L	0.1000		72	30-130			
Pyridine	0.068	0.100	mg/L	0.1000		68	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0779*		mg/L	*0.1000*		*78*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.136*		mg/L	*0.1500*		*91*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0893*		mg/L	*0.1000*		*89*	*30-130*			
Surrogate: 2-Fluorophenol	*0.108*		mg/L	*0.1500*		*72*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0873*		mg/L	*0.1000*		*87*	*30-130*			
Surrogate: Phenol-d6	*0.113*		mg/L	*0.1500*		*76*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.108*		mg/L	*0.1000*		*108*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.087	0.010	mg/L	0.1000		87	40-140	4	20	
1,2,4-Trichlorobenzene	0.086	0.010	mg/L	0.1000		86	40-140	0.6	20	
1,2-Dichlorobenzene	0.074	0.010	mg/L	0.1000		74	40-140	0.01	20	
1,3-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140	0.7	20	
1,4-Dichlorobenzene	0.073	0.010	mg/L	0.1000		73	40-140	0.3	20	
2,3,4,6-Tetrachlorophenol	0.087	0.050	mg/L	0.1000		87	40-140	4	20	
2,4,5-Trichlorophenol	0.095	0.010	mg/L	0.1000		95	30-130	4	20	
2,4,6-Trichlorophenol	0.097	0.010	mg/L	0.1000		97	30-130	5	20	
2,4-Dichlorophenol	0.092	0.010	mg/L	0.1000		92	30-130	5	20	
2,4-Dimethylphenol	0.075	0.050	mg/L	0.1000		75	30-130	1	20	
2,4-Dinitrophenol	0.104	0.050	mg/L	0.1000		104	30-130	6	20	
2,4-Dinitrotoluene	0.086	0.010	mg/L	0.1000		86	40-140	3	20	
2,6-Dinitrotoluene	0.084	0.010	mg/L	0.1000		84	40-140	0.4	20	
2-Chloronaphthalene	0.085	0.010	mg/L	0.1000		85	40-140	1	20	
2-Chlorophenol	0.079	0.010	mg/L	0.1000		79	30-130	5	20	
2-Methylphenol	0.079	0.010	mg/L	0.1000		79	30-130	0.7	20	
2-Nitroaniline	0.072	0.010	mg/L	0.1000		72	40-140	3	20	
2-Nitrophenol	0.086	0.010	mg/L	0.1000		86	30-130	4	20	
3,3´-Dichlorobenzidine	0.078	0.020	mg/L	0.1000		78	40-140	0.4	20	
3+4-Methylphenol	0.144	0.020	mg/L	0.2000		72	30-130	3	20	
3-Nitroaniline	0.078	0.010	mg/L	0.1000		78	40-140	0.04	20	
4,6-Dinitro-2-Methylphenol	0.105	0.050	mg/L	0.1000		105	30-130	4	20	
4-Bromophenyl-phenylether	0.095	0.010	mg/L	0.1000		95	40-140	1	20	
4-Chloro-3-Methylphenol	0.081	0.010	mg/L	0.1000		81	30-130	1	20	
4-Chloroaniline	0.072	0.020	mg/L	0.1000		72	40-140	0.8	20	
4-Chloro-phenyl-phenyl ether	0.091	0.010	mg/L	0.1000		91	40-140	2	20	
4-Nitroaniline	0.076	0.010	mg/L	0.1000		76	40-140	2	20	
4-Nitrophenol	0.076	0.050	mg/L	0.1000		76	30-130	5	20	
Acetophenone	0.068	0.010	mg/L	0.1000		68	40-140	0.5	20	
Aniline	0.061	0.010	mg/L	0.1000		61	40-140	2	20	
Azobenzene	0.082	0.020	mg/L	0.1000		82	40-140	2	20	
Benzoic Acid	0.085	0.100	mg/L	0.1000		85	40-140	7	20	
Benzyl Alcohol	0.079	0.010	mg/L	0.1000		79	40-140	1	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
bis(2-Chloroethoxy)methane	0.082	0.010	mg/L	0.1000		82	40-140	1	20	
bis(2-Chloroethyl)ether	0.079	0.010	mg/L	0.1000		79	40-140	0.9	20	
bis(2-chloroisopropyl)Ether	0.077	0.010	mg/L	0.1000		77	40-140	1	20	
bis(2-Ethylhexyl)phthalate	0.100	0.006	mg/L	0.1000		100	40-140	0.9	20	
Butylbenzylphthalate	0.094	0.010	mg/L	0.1000		94	40-140	1	20	
Carbazole	0.083	0.010	mg/L	0.1000		83	40-140	1	20	
Dibenzofuran	0.086	0.010	mg/L	0.1000		86	40-140	3	20	
Diethylphthalate	0.088	0.010	mg/L	0.1000		88	40-140	4	20	
Dimethylphthalate	0.087	0.010	mg/L	0.1000		87	40-140	3	20	
Di-n-butylphthalate	0.088	0.010	mg/L	0.1000		88	40-140	3	20	
Di-n-octylphthalate	0.097	0.010	mg/L	0.1000		97	40-140	3	20	
Hexachlorobutadiene	0.091	0.010	mg/L	0.1000		91	40-140	2	20	
Hexachlorocyclopentadiene	0.083	0.025	mg/L	0.1000		83	40-140	3	20	
Hexachloroethane	0.072	0.005	mg/L	0.1000		72	40-140	0.2	20	
Isophorone	0.075	0.010	mg/L	0.1000		75	40-140	1	20	
Nitrobenzene	0.082	0.010	mg/L	0.1000		82	40-140	2	20	
N-Nitrosodimethylamine	0.067	0.010	mg/L	0.1000		67	40-140	0.2	20	
N-Nitroso-Di-n-Propylamine	0.075	0.010	mg/L	0.1000		75	40-140	0.05	20	
N-nitrosodiphenylamine	0.091	0.010	mg/L	0.1000		91	40-140	0.4	20	
Phenol	0.074	0.010	mg/L	0.1000		74	30-130	3	20	
Pyridine	0.067	0.100	mg/L	0.1000		67	40-140	0.8	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0772*		mg/L	*0.1000*		*77*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.135*		mg/L	*0.1500*		*90*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.121*		mg/L	*0.1500*		*80*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0916*		mg/L	*0.1000*		*92*	*30-130*			
Surrogate: 2-Fluorophenol	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0862*		mg/L	*0.1000*		*86*	*30-130*			
Surrogate: Phenol-d6	*0.115*		mg/L	*0.1500*		*76*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.105*		mg/L	*0.1000*		*105*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.0846	0.00400	mg/L	0.1000		85	40-140			
Acenaphthene	0.0927	0.00400	mg/L	0.1000		93	40-140			
Acenaphthylene	0.0887	0.00400	mg/L	0.1000		89	40-140			
Anthracene	0.0866	0.00400	mg/L	0.1000		87	40-140			
Benzo(a)anthracene	0.0846	0.00100	mg/L	0.1000		85	40-140			
Benzo(a)pyrene	0.0817	0.00100	mg/L	0.1000		82	40-140			
Benzo(b)fluoranthene	0.0908	0.00100	mg/L	0.1000		91	40-140			
Benzo(g,h,i)perylene	0.0863	0.00400	mg/L	0.1000		86	40-140			
Benzo(k)fluoranthene	0.0801	0.00100	mg/L	0.1000		80	40-140			
Chrysene	0.0865	0.00100	mg/L	0.1000		86	40-140			
Dibenzo(a,h)Anthracene	0.0908	0.00100	mg/L	0.1000		91	40-140			
Fluoranthene	0.0885	0.00400	mg/L	0.1000		88	40-140			
Fluorene	0.0916	0.00400	mg/L	0.1000		92	40-140			
Hexachlorobenzene	0.103	0.00400	mg/L	0.1000		103	40-140			
Indeno(1,2,3-cd)Pyrene	0.0943	0.00100	mg/L	0.1000		94	40-140			
Naphthalene	0.0834	0.00400	mg/L	0.1000		83	40-140			
Pentachlorophenol	0.0785	0.0180	mg/L	0.1000		79	30-130			
Phenanthrene	0.0858	0.00400	mg/L	0.1000		86	40-140			
Pyrene	0.0872	0.00400	mg/L	0.1000		87	40-140			
LCS Dup										
2-Methylnaphthalene	0.0864	0.00400	mg/L	0.1000		86	40-140	2	20	
Acenaphthene	0.0954	0.00400	mg/L	0.1000		95	40-140	3	20	
Acenaphthylene	0.0930	0.00400	mg/L	0.1000		93	40-140	5	20	
Anthracene	0.0896	0.00400	mg/L	0.1000		90	40-140	3	20	
Benzo(a)anthracene	0.0883	0.00100	mg/L	0.1000		88	40-140	4	20	
Benzo(a)pyrene	0.0854	0.00100	mg/L	0.1000		85	40-140	5	20	
Benzo(b)fluoranthene	0.0961	0.00100	mg/L	0.1000		96	40-140	6	20	
Benzo(g,h,i)perylene	0.0914	0.00400	mg/L	0.1000		91	40-140	6	20	
Benzo(k)fluoranthene	0.0817	0.00100	mg/L	0.1000		82	40-140	2	20	
Chrysene	0.0897	0.00100	mg/L	0.1000		90	40-140	4	20	
Dibenzo(a,h)Anthracene	0.0939	0.00100	mg/L	0.1000		94	40-140	3	20	
Fluoranthene	0.0913	0.00400	mg/L	0.1000		91	40-140	3	20	
Fluorene	0.0918	0.00400	mg/L	0.1000		92	40-140	0.2	20	
Hexachlorobenzene	0.109	0.00400	mg/L	0.1000		109	40-140	6	20	
Indeno(1,2,3-cd)Pyrene	0.100	0.00100	mg/L	0.1000		100	40-140	6	20	
Naphthalene	0.0851	0.00400	mg/L	0.1000		85	40-140	2	20	
Pentachlorophenol	0.0805	0.0180	mg/L	0.1000		81	30-130	3	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CJ91614 - 3520C										
Phenanthrene	0.0876	0.00400	mg/L	0.1000		88	40-140	2	20	
Pyrene	0.0916	0.00400	mg/L	0.1000		92	40-140	5	20	
Classical Chemistry										
Batch CJ91658 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	0.5	mg/L							
Total Organic Carbon (2)	ND	0.5	mg/L							
LCS										
Total Organic Carbon (1)	5.4	0.5	mg/L	5.000		109	80-120			
Total Organic Carbon (2)	5.5	0.5	mg/L	5.000		110	80-120			
LCS Dup										
Total Organic Carbon (1)	5.6	0.5	mg/L	5.000		111	80-120	2	20	
Total Organic Carbon (2)	5.6	0.5	mg/L	5.000		111	80-120	0.9	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0562

Notes and Definitions

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0562

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: Client

ESS Project ID: 19J0562
Date Received: 10/16/2019
Project Due Date: 10/23/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA
13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	399424	Yes	No	Yes	VOA Vial - HCl	HCl	
01	399425	Yes	No	Yes	VOA Vial - HCl	HCl	
01	399426	Yes	No	Yes	VOA Vial - HCl	HCl	
01	399429	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	399430	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	399437	Yes	NA	Yes	1L Amber - Unpres	NP	
01	399438	Yes	NA	Yes	1L Amber - Unpres	NP	
01	399439	Yes	NA	Yes	1L Amber - Unpres	NP	
01	399440	Yes	NA	Yes	1L Amber - Unpres	NP	
01	399441	Yes	NA	Yes	1L Amber - Unpres	NP	
01	399442	Yes	NA	Yes	1L Amber - Unpres	NP	
01	399444	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
02	399421	Yes	No	Yes	VOA Vial - HCl	HCl	
02	399422	Yes	No	Yes	VOA Vial - HCl	HCl	
02	399423	Yes	No	Yes	VOA Vial - HCl	HCl	
02	399427	Yes	NA	Yes	VOA Vial - HCl	HCl	
02	399428	Yes	NA	Yes	VOA Vial - HCl	HCl	
02	399431	Yes	NA	Yes	1L Amber - Unpres	NP	
02	399432	Yes	NA	Yes	1L Amber - Unpres	NP	
02	399433	Yes	NA	Yes	1L Amber - Unpres	NP	
02	399434	Yes	NA	Yes	1L Amber - Unpres	NP	
02	399435	Yes	NA	Yes	1L Amber - Unpres	NP	
02	399436	Yes	NA	Yes	1L Amber - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0562
Date Received: 10/16/2019

02	399443	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
03	399420	Yes	No	Yes	VOA Vial - HCl	HCl

2nd Review

Were all containers scanned into storage/lab? Initials

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 10/16/19 2101

Reviewed By: Date & Time: 10/16/19 2134

Delivered By: 10/16/19 2139

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 19J0562

Turn Time	5	Days
Regulatory State	RI	

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits

Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name	Project #	Project Name
GZA	34640	Truk-Away Landfill

Contact Person	Address
Richard Carlone	188 Valley St, Suite 300

City	State	Zip Code	PO #
Providence	RI	02909	

Telephone Number	FAX Number	Email Address
		richard.carlone@gza.com

Analysis

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	TOC	Metals[1,2]	SVOC	TPH	Pest.	PCBs
1	10/16/19	0715	Grab	SW	SSW-1	X	X	X	X	X	X	X
2	10/16/19	1010	Grab	SW	SSW-10	X	X	X	X	X	X	X
	10/16/19	0800	Grab	Sed.	SSW-1 (0-6")	X		X	X	X	X	X
	10/16/19	0800	Grab	Sed.	SSW-1 (6-18")	X		X	X	X	X	X
	10/16/19	0800	Grab	Sed.	SSW-1 (18-36")[3]	X		X	X	X	X	X
	10/16/19	1310	Grab	Sed.	SSW-10 (0-6")	X		X	X	X	X	X
	10/16/19	1310	Grab	Sed.	SSW-10 (6-18")	X		X	X	X	X	X
	10/16/19	1310	Grab	Sed.	SSW-10 (18-36")[3]	X		X	X	X	X	X
	10/16/19	1445	Grab	Sed.	SSW-9 (0-6")	X		X	X	X	X	X
	10/16/19	1445	Grab	Sed.	SSW-9 (6-18")	X		X	X	X	X	X
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial						V	V	P/AG	AG	AG	AG	AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*						7	7	3/10	6/10	6/10	6/10	6/10
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*						2/6	2	4/1	[illegible] 1	1	1	1
Number of Containers per Sample:						3/1	2	1/3	2/3	1/3	1/3	2/3

Laboratory Use Only		
Cooler Present:	✓	○ Drop Off
Seals Intact:		○ Pickup
Cooler Temperature:	5.5, 0.5°C Ice	

Sampled by: Rowan Hayes

Comments: Please specify "Other" preservative and containers types in this space

All SW samples were field filtered.
1. SW metals: 15 solid waste, mercury, iron
2. Sed metals: 15 solid waste, mercury
3. Sed samples from (18-36") place on HOLD until other results come back.

page 1 of 1

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 10/16/19 1733	[signature] 10/16/19 1740		
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

CHAIN OF CUSTODY

ESS Lab # 19J0562

ESS Laboratory

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

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP
Reporting Limits:
Electonic Deliverables: ☑ Data Checker ☑ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA
Project #: 346490
Project Name: Trik - Away Landfill
Contact Person: Richard Carlone
Address: 100 Valley St, Suite 300
City: Providence
State: RI
Zip Code: 02909
PO #:
Telephone Number:
FAX Number:
Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOC	SVOC	TPH	pest.	PCB	Metals	
2B	10/16/19	1425	Grab	Sed.	SSW-9 (18-36")2	X	X	X	X	X	X	
3	10/16/19	0900	Trip Blank	SW	Trip Blank	X						
	10/16/19	0900	Trip Blank	Sed.	Trip Blank	X						

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial

Container Type	V	AG	AG	AG	AG	AG	RCH
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	1	10	10	10	10	10	
	2	1	1	1	1	1	
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*							
Number of Containers per Sample:	1	←		3	→		

Sampled by: Ruvan Hayes

Please specify "Other" preservative and containers types in this space

Comments:
1. Sed metals: 15 solid waste, mercury
2. Sed samples (18-36") place on HOLD until other results come back.
page 2 of 2

Laboratory Use Only
Cooler Present: ✓
Seals Intact: ○ Drop Off ○ Pickup
Cooler Temperature: 3.5, 0.5 °C TLC

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/16/19 1733	10/16/19 1740		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
	10/16/19		

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19J0622

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

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:46 pm, Oct 25, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

SAMPLE RECEIPT

The following samples were received on October 17, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19J0622-01	SSW-11	Surface Water	6010C, 6020A, 7010, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19J0622-02	Trip Blank	Aqueous	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

PROJECT NARRATIVE

8081B Organochlorine Pesticides

C9J0393-CCV3 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Dieldrin [2C] (21% @ 20%), Heptachlor Epoxide [2C] (22% @ 20%)

C9J0393-CCV5 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Heptachlor Epoxide (22% @ 20%)

8270D Semi-Volatile Organic Compounds

C9J0414-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (77% @ 80-120%), 4,6-Dinitro-2-Methylphenol (95% @ 80-120%), Benzoic Acid (101% @ 80-120%)

C9J0414-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (23% @ 20%)

C9J0417-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%), 4,6-Dinitro-2-Methylphenol (76% @ 80-120%), Benzoic Acid (62% @ 80-120%)

C9J0417-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Di-n-octylphthalate (21% @ 20%)

C9J0417-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4,6-Tribromophenol (28% @ 20%), 2,4-Dinitrophenol (31% @ 20%), 4,6-Dinitro-2-Methylphenol (24% @ 20%), Benzoic Acid (38% @ 20%)

CJ92113-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
N-Nitrosodimethylamine (36% @ 20%), Pyridine (26% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds

C9J0411-CCV1 **Calibration required quadratic regression (Q).**
2,4,6-Tribromophenol (154% @ 80-120%), Pentachlorophenol (81% @ 80-120%)

C9J0411-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4,6-Tribromophenol (54% @ 20%)

CJ92113-BSD2 **Relative percent difference for duplicate is outside of criteria (D+).**
2-Methylnaphthalene (33% @ 20%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19J0622

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.0004)		6020A		1	NAR	10/22/19 16:12	10	10	CJ92229
Arsenic	ND (0.005)		7010		1	KJK	10/23/19 15:12	10	10	CJ92229
Barium	ND (0.050)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Beryllium	ND (0.0010)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Cadmium	ND (0.0002)		6020A		1	NAR	10/22/19 16:12	10	10	CJ92229
Chromium	ND (0.020)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Cobalt	ND (0.020)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Copper	ND (0.020)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Iron	**0.221** (0.100)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Lead	ND (0.001)		6020A		1	NAR	10/22/19 16:12	10	10	CJ92229
Mercury	ND (0.00020)		7470A		1	MKS	10/24/19 11:40	20	40	CJ92151
Nickel	ND (0.050)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Selenium	ND (0.010)		7010		1	KJK	10/23/19 20:30	10	10	CJ92229
Silver	ND (0.010)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Thallium	ND (0.0002)		6020A		1	NAR	10/22/19 16:12	10	10	CJ92229
Vanadium	ND (0.020)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229
Zinc	ND (0.050)		6010C		1	KJK	10/22/19 19:40	10	10	CJ92229

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: IBM
Prepared: 10/22/19 15:08

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
4,4´-DDE	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
4,4´-DDT	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Aldrin	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
alpha-BHC	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
alpha-Chlordane	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
beta-BHC	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Chlordane (Total)	ND (0.000467)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
delta-BHC	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Dieldrin	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Endosulfan I	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Endosulfan II	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Endosulfan Sulfate	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Endrin	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Endrin Aldehyde	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Endrin Ketone	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
gamma-Chlordane	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Heptachlor	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Heptachlor Epoxide	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Hexachlorobenzene	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Methoxychlor	ND (0.000047)		8081B		1	10/23/19 15:18	C9J0393	CJ92201
Toxaphene	ND (0.00121)		8081B		1	10/23/19 15:18	C9J0393	CJ92201

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*70 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 10/21/19 12:37

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1221	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1232	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1242	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1248	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1254	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1260	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1262	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102
Aroclor 1268	ND (0.09)		8082A		1	10/21/19 15:14		CJ92102

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*63 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*50 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 10/21/19 12:14

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	10/22/19 3:07	C9J0375	CJ92104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*101 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
1-Chlorohexane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
2-Butanone	ND (0.0100)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
2-Chlorotoluene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
2-Hexanone	ND (0.0100)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
4-Chlorotoluene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Acetone	ND (0.0100)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Benzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Bromobenzene	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Bromodichloromethane	ND (0.0006)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Bromoform	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Bromomethane	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Carbon Disulfide	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Chlorobenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Chloroethane	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Chloroform	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Chloromethane	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Dibromochloromethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Dibromomethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Diethyl Ether	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Di-isopropyl ether	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Ethylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Hexachloroethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Isopropylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Methylene Chloride	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Naphthalene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
n-Butylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
n-Propylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
sec-Butylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Styrene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
tert-Butylbenzene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Tetrachloroethene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Toluene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Trichloroethene	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Vinyl Acetate	ND (0.0050)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Vinyl Chloride	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Xylene O	ND (0.0010)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Xylene P,M	ND (0.0020)		8260B		1	10/21/19 13:09	C9J0382	CJ92133
Xylenes (Total)	ND (0.00200)		8260B		1	10/21/19 13:09		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*127 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*82 %*		*70-130*
Surrogate: Dibromofluoromethane	*120 %*		*70-130*
Surrogate: Toluene-d8	*103 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: TAJ
Prepared: 10/21/19 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
1,2-Dichlorobenzene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
1,3-Dichlorobenzene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
1,4-Dichlorobenzene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,4-Dichlorophenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,4-Dimethylphenol	ND (0.047)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,4-Dinitrophenol	ND (0.047)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,4-Dinitrotoluene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2,6-Dinitrotoluene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2-Chloronaphthalene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2-Chlorophenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2-Methylphenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2-Nitroaniline	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
2-Nitrophenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
3+4-Methylphenol	ND (0.019)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
3-Nitroaniline	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4-Chloroaniline	ND (0.019)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4-Nitroaniline	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
4-Nitrophenol	ND (0.047)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Acetophenone	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Aniline	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Azobenzene	ND (0.019)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Benzoic Acid	ND (0.093)		8270D		1	10/23/19 16:26	C9J0417	CJ92113

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: TAJ
Prepared: 10/21/19 17:15

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Butylbenzylphthalate	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Carbazole	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Dibenzofuran	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Diethylphthalate	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Dimethylphthalate	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Di-n-butylphthalate	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Di-n-octylphthalate	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Hexachlorobutadiene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Hexachloroethane	ND (0.005)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Isophorone	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Nitrobenzene	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
N-Nitrosodimethylamine	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
N-nitrosodiphenylamine	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Phenol	ND (0.009)		8270D		1	10/23/19 16:26	C9J0417	CJ92113
Pyridine	ND (0.093)		8270D		1	10/23/19 16:26	C9J0417	CJ92113

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*82 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*74 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*88 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*93 %*		*30-130*
Surrogate: 2-Fluorophenol	*87 %*		*15-110*
Surrogate: Nitrobenzene-d5	*98 %*		*30-130*
Surrogate: Phenol-d6	*89 %*		*15-110*
Surrogate: p-Terphenyl-d14	*104 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: IBM
Prepared: 10/21/19 17:15

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Acenaphthene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Acenaphthylene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Anthracene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Chrysene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Fluoranthene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Fluorene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Naphthalene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Pentachlorophenol	ND (0.00084)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Phenanthrene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113
Pyrene	ND (0.00019)		8270D SIM		1	10/23/19 0:17	C9J0411	CJ92113

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 10/17/19 09:30
Percent Solids: N/A

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-01
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**3.74** (0.500)		9060		1	CCP	10/18/19 19:01	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/17/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-02
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,1-Dichloroethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,1-Dichloroethene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,1-Dichloropropene	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2-Dibromoethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2-Dichloroethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,2-Dichloropropane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,3-Dichloropropane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1,4-Dioxane - Screen	ND (0.500)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
1-Chlorohexane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
2,2-Dichloropropane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
2-Butanone	ND (0.0100)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
2-Chlorotoluene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
2-Hexanone	ND (0.0100)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
4-Chlorotoluene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
4-Isopropyltoluene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Acetone	ND (0.0100)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Benzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Bromobenzene	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/17/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-02
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Bromodichloromethane	ND (0.0006)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Bromoform	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Bromomethane	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Carbon Disulfide	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Carbon Tetrachloride	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Chlorobenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Chloroethane	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Chloroform	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Chloromethane	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Dibromochloromethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Dibromomethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Dichlorodifluoromethane	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Diethyl Ether	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Di-isopropyl ether	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Ethylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Hexachlorobutadiene	ND (0.0006)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Hexachloroethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Isopropylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Methylene Chloride	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Naphthalene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
n-Butylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
n-Propylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
sec-Butylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Styrene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
tert-Butylbenzene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Tetrachloroethene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 10/17/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19J0622
ESS Laboratory Sample ID: 19J0622-02
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Toluene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Trichloroethene	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Trichlorofluoromethane	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Vinyl Acetate	ND (0.0050)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Vinyl Chloride	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Xylene O	ND (0.0010)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Xylene P,M	ND (0.0020)		8260B		1	10/21/19 12:43	C9J0382	CJ92133
Xylenes (Total)	ND (0.00200)		8260B		1	10/21/19 12:43		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*85 %*		*70-130*
Surrogate: Dibromofluoromethane	*122 %*		*70-130*
Surrogate: Toluene-d8	*104 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CJ92151 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00602	0.00020	mg/L	0.006042		100	80-120			
LCS Dup										
Mercury	0.00618	0.00020	mg/L	0.006042		102	80-120	3	20	
Batch CJ92229 - 200.7/6010BNoDigest										
Blank										
Barium	ND	0.050	mg/L							
Beryllium	ND	0.0010	mg/L							
Chromium	ND	0.020	mg/L							
Cobalt	ND	0.020	mg/L							
Copper	ND	0.020	mg/L							
Iron	ND	0.100	mg/L							
Nickel	ND	0.050	mg/L							
Silver	ND	0.010	mg/L							
Vanadium	ND	0.020	mg/L							
Zinc	ND	0.050	mg/L							
Blank										
Arsenic	ND	0.005	mg/L							
Selenium	ND	0.010	mg/L							
Blank										
Antimony	ND	0.0004	mg/L							
Cadmium	ND	0.0002	mg/L							
Lead	ND	0.001	mg/L							
Thallium	ND	0.0002	mg/L							
LCS										
Barium	0.489		mg/L	0.5000		98	80-120			
Beryllium	0.0490		mg/L	0.05000		98	80-120			
Chromium	0.487		mg/L	0.5000		97	80-120			
Cobalt	0.494		mg/L	0.5000		99	80-120			
Copper	0.488		mg/L	0.5000		98	80-120			
Iron	2.49		mg/L	2.500		100	80-120			
Nickel	0.493		mg/L	0.5000		99	80-120			
Silver	0.244		mg/L	0.2500		98	80-120			
Vanadium	0.486		mg/L	0.5000		97	80-120			
Zinc	0.490		mg/L	0.5000		98	80-120			
LCS										
Selenium	51.1		ug/L	50.00		102	80-120			
LCS										
Antimony	20.0		ug/L	20.04		100	80-120			
Arsenic	23.1		ug/L	20.00		116	80-120			
Cadmium	20.9		ug/L	20.10		104	80-120			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CJ92229 - 200.7/6010BNoDigest										
Lead	20.9		ug/L	19.98		105	80-120			
Thallium	21.2		ug/L	20.02		106	80-120			
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
Chlordane (Total)	ND	0.000500	mg/L							
Chlordane (Total) [2C]	ND	0.000500	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							
Endosulfan I [2C]	ND	0.000050	mg/L							
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Toxaphene	ND	0.00130	mg/L							
Toxaphene [2C]	ND	0.00130	mg/L							
Surrogate: Decachlorobiphenyl	*0.000225*		mg/L	*0.0002500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000228*		mg/L	*0.0002500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000165*		mg/L	*0.0002500*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000174*		mg/L	*0.0002500*		*69*	*30-150*			
LCS										
4,4´-DDD	0.000233	0.000050	mg/L	0.0002500		93	40-140			
4,4´-DDD [2C]	0.000226	0.000050	mg/L	0.0002500		91	40-140			
4,4´-DDE	0.000245	0.000050	mg/L	0.0002500		98	40-140			
4,4´-DDE [2C]	0.000227	0.000050	mg/L	0.0002500		91	40-140			
4,4´-DDT	0.000237	0.000050	mg/L	0.0002500		95	40-140			
4,4´-DDT [2C]	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Aldrin	0.000195	0.000050	mg/L	0.0002500		78	40-140			
Aldrin [2C]	0.000190	0.000050	mg/L	0.0002500		76	40-140			
alpha-BHC	0.000208	0.000050	mg/L	0.0002500		83	40-140			
alpha-BHC [2C]	0.000205	0.000050	mg/L	0.0002500		82	40-140			
alpha-Chlordane	0.000214	0.000050	mg/L	0.0002500		86	40-140			
alpha-Chlordane [2C]	0.000211	0.000050	mg/L	0.0002500		84	40-140			
beta-BHC	0.000229	0.000050	mg/L	0.0002500		91	40-140			
beta-BHC [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140			
delta-BHC	0.000216	0.000050	mg/L	0.0002500		87	40-140			
delta-BHC [2C]	0.000207	0.000050	mg/L	0.0002500		83	40-140			
Dieldrin	0.000234	0.000050	mg/L	0.0002500		94	40-140			
Dieldrin [2C]	0.000224	0.000050	mg/L	0.0002500		90	40-140			
Endosulfan I	0.000208	0.000050	mg/L	0.0002500		83	40-140			
Endosulfan I [2C]	0.000210	0.000050	mg/L	0.0002500		84	40-140			
Endosulfan II	0.000220	0.000050	mg/L	0.0002500		88	40-140			
Endosulfan II [2C]	0.000211	0.000050	mg/L	0.0002500		84	40-140			
Endosulfan Sulfate	0.000227	0.000050	mg/L	0.0002500		91	40-140			
Endosulfan Sulfate [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
Endrin	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Endrin [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140			
Endrin Aldehyde	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Endrin Aldehyde [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140			
Endrin Ketone	0.000236	0.000050	mg/L	0.0002500		94	40-140			
Endrin Ketone [2C]	0.000232	0.000050	mg/L	0.0002500		93	40-140			
gamma-BHC (Lindane)	0.000218	0.000050	mg/L	0.0002500		87	40-140			
gamma-BHC (Lindane) [2C]	0.000212	0.000050	mg/L	0.0002500		85	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
gamma-Chlordane	0.000215	0.000050	mg/L	0.0002500		86	40-140			
gamma-Chlordane [2C]	0.000210	0.000050	mg/L	0.0002500		84	40-140			
Heptachlor	0.000206	0.000050	mg/L	0.0002500		83	40-140			
Heptachlor [2C]	0.000206	0.000050	mg/L	0.0002500		82	40-140			
Heptachlor Epoxide	0.000238	0.000050	mg/L	0.0002500		95	40-140			
Heptachlor Epoxide [2C]	0.000230	0.000050	mg/L	0.0002500		92	40-140			
Hexachlorobenzene	0.000210	0.000050	mg/L	0.0002500		84	40-140			
Hexachlorobenzene [2C]	0.000207	0.000050	mg/L	0.0002500		83	40-140			
Methoxychlor	0.000235	0.000050	mg/L	0.0002500		94	40-140			
Methoxychlor [2C]	0.000231	0.000050	mg/L	0.0002500		92	40-140			
Surrogate: Decachlorobiphenyl	*0.000241*		mg/L	*0.0002500*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000234*		mg/L	*0.0002500*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000171*		mg/L	*0.0002500*		*68*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000184*		mg/L	*0.0002500*		*74*	*30-150*			
LCS Dup										
4,4´-DDD	0.000234	0.000050	mg/L	0.0002500		94	40-140	0.4	20	
4,4´-DDD [2C]	0.000228	0.000050	mg/L	0.0002500		91	40-140	0.7	20	
4,4´-DDE	0.000247	0.000050	mg/L	0.0002500		99	40-140	0.8	20	
4,4´-DDE [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140	2	20	
4,4´-DDT	0.000244	0.000050	mg/L	0.0002500		98	40-140	3	20	
4,4´-DDT [2C]	0.000236	0.000050	mg/L	0.0002500		95	40-140	3	20	
Aldrin	0.000218	0.000050	mg/L	0.0002500		87	40-140	11	20	
Aldrin [2C]	0.000212	0.000050	mg/L	0.0002500		85	40-140	11	20	
alpha-BHC	0.000222	0.000050	mg/L	0.0002500		89	40-140	7	20	
alpha-BHC [2C]	0.000219	0.000050	mg/L	0.0002500		88	40-140	7	20	
alpha-Chlordane	0.000227	0.000050	mg/L	0.0002500		91	40-140	6	20	
alpha-Chlordane [2C]	0.000221	0.000050	mg/L	0.0002500		89	40-140	5	20	
beta-BHC	0.000237	0.000050	mg/L	0.0002500		95	40-140	3	20	
beta-BHC [2C]	0.000234	0.000050	mg/L	0.0002500		94	40-140	4	20	
delta-BHC	0.000234	0.000050	mg/L	0.0002500		94	40-140	8	20	
delta-BHC [2C]	0.000213	0.000050	mg/L	0.0002500		85	40-140	3	20	
Dieldrin	0.000242	0.000050	mg/L	0.0002500		97	40-140	3	20	
Dieldrin [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140	4	20	
Endosulfan I	0.000218	0.000050	mg/L	0.0002500		87	40-140	5	20	
Endosulfan I [2C]	0.000219	0.000050	mg/L	0.0002500		87	40-140	4	20	
Endosulfan II	0.000226	0.000050	mg/L	0.0002500		90	40-140	3	20	
Endosulfan II [2C]	0.000217	0.000050	mg/L	0.0002500		87	40-140	3	20	
Endosulfan Sulfate	0.000231	0.000050	mg/L	0.0002500		93	40-140	2	20	
Endosulfan Sulfate [2C]	0.000228	0.000050	mg/L	0.0002500		91	40-140	2	20	
Endrin	0.000237	0.000050	mg/L	0.0002500		95	40-140	3	20	
Endrin [2C]	0.000229	0.000050	mg/L	0.0002500		91	40-140	3	20	
Endrin Aldehyde	0.000231	0.000050	mg/L	0.0002500		92	40-140	0.4	20	
Endrin Aldehyde [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140	0.7	20	
Endrin Ketone	0.000242	0.000050	mg/L	0.0002500		97	40-140	3	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CJ92201 - 3510C										
Endrin Ketone [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	2	20	
gamma-BHC (Lindane)	0.000230	0.000050	mg/L	0.0002500		92	40-140	5	20	
gamma-BHC (Lindane) [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140	6	20	
gamma-Chlordane	0.000227	0.000050	mg/L	0.0002500		91	40-140	6	20	
gamma-Chlordane [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140	6	20	
Heptachlor	0.000226	0.000050	mg/L	0.0002500		90	40-140	9	20	
Heptachlor [2C]	0.000224	0.000050	mg/L	0.0002500		90	40-140	9	20	
Heptachlor Epoxide	0.000248	0.000050	mg/L	0.0002500		99	40-140	4	20	
Heptachlor Epoxide [2C]	0.000240	0.000050	mg/L	0.0002500		96	40-140	4	20	
Hexachlorobenzene	0.000226	0.000050	mg/L	0.0002500		91	40-140	7	20	
Hexachlorobenzene [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140	7	20	
Methoxychlor	0.000237	0.000050	mg/L	0.0002500		95	40-140	0.6	20	
Methoxychlor [2C]	0.000246	0.000050	mg/L	0.0002500		99	40-140	6	20	
Surrogate: Decachlorobiphenyl	*0.000233*		mg/L	*0.0002500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000227*		mg/L	*0.0002500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000199*		mg/L	*0.0002500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000209*		mg/L	*0.0002500*		*84*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ92102 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							
Surrogate: Decachlorobiphenyl	*0.0310*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0284*		ug/L	*0.05000*		*57*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0186*		ug/L	*0.05000*		*37*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0195*		ug/L	*0.05000*		*39*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ92102 - 3510C										
LCS										
Aroclor 1016	0.84	0.10	ug/L	1.000		84	40-140			
Aroclor 1016 [2C]	0.88	0.10	ug/L	1.000		88	40-140			
Aroclor 1260	0.86	0.10	ug/L	1.000		86	40-140			
Aroclor 1260 [2C]	0.90	0.10	ug/L	1.000		90	40-140			
Surrogate: Decachlorobiphenyl	*0.0372*		ug/L	*0.05000*		*74*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0340*		ug/L	*0.05000*		*68*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0310*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0307*		ug/L	*0.05000*		*61*	*30-150*			
LCS Dup										
Aroclor 1016	0.86	0.10	ug/L	1.000		86	40-140	2	20	
Aroclor 1016 [2C]	0.92	0.10	ug/L	1.000		92	40-140	4	20	
Aroclor 1260	0.88	0.10	ug/L	1.000		88	40-140	3	20	
Aroclor 1260 [2C]	0.92	0.10	ug/L	1.000		92	40-140	2	20	
Surrogate: Decachlorobiphenyl	*0.0360*		ug/L	*0.05000*		*72*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0330*		ug/L	*0.05000*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0318*		ug/L	*0.05000*		*64*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0318*		ug/L	*0.05000*		*64*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CJ92104 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.0993*		mg/L	*0.1000*		*99*	*40-140*			
LCS										
Decane (C10)	0.027	0.005	mg/L	0.05000		54	40-140			
Docosane (C22)	0.045	0.005	mg/L	0.05000		90	40-140			
Dodecane (C12)	0.037	0.005	mg/L	0.05000		74	40-140			
Eicosane (C20)	0.045	0.005	mg/L	0.05000		89	40-140			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CJ92104 - 3510C										
Hexacosane (C26)	0.045	0.005	mg/L	0.05000		91	40-140			
Hexadecane (C16)	0.044	0.005	mg/L	0.05000		88	40-140			
Nonadecane (C19)	0.049	0.005	mg/L	0.05000		97	40-140			
Nonane (C9)	0.022	0.005	mg/L	0.05000		44	30-140			
Octacosane (C28)	0.046	0.005	mg/L	0.05000		92	40-140			
Octadecane (C18)	0.044	0.005	mg/L	0.05000		89	40-140			
Tetracosane (C24)	0.045	0.005	mg/L	0.05000		91	40-140			
Tetradecane (C14)	0.042	0.005	mg/L	0.05000		85	40-140			
Total Petroleum Hydrocarbons	0.590	0.20	mg/L	0.7000		84	40-140			
Triacontane (C30)	0.046	0.005	mg/L	0.05000		92	40-140			
Surrogate: O-Terphenyl	*0.0967*		mg/L	*0.1000*		*97*	*40-140*			
LCS Dup										
Decane (C10)	0.024	0.005	mg/L	0.05000		49	40-140	11	25	
Docosane (C22)	0.047	0.005	mg/L	0.05000		93	40-140	3	25	
Dodecane (C12)	0.038	0.005	mg/L	0.05000		75	40-140	1	25	
Eicosane (C20)	0.046	0.005	mg/L	0.05000		92	40-140	3	25	
Hexacosane (C26)	0.047	0.005	mg/L	0.05000		94	40-140	3	25	
Hexadecane (C16)	0.044	0.005	mg/L	0.05000		89	40-140	1	25	
Nonadecane (C19)	0.050	0.005	mg/L	0.05000		100	40-140	3	25	
Nonane (C9)	0.021	0.005	mg/L	0.05000		43	30-140	4	25	
Octacosane (C28)	0.047	0.005	mg/L	0.05000		95	40-140	3	25	
Octadecane (C18)	0.046	0.005	mg/L	0.05000		91	40-140	3	25	
Tetracosane (C24)	0.047	0.005	mg/L	0.05000		94	40-140	3	25	
Tetradecane (C14)	0.043	0.005	mg/L	0.05000		86	40-140	2	25	
Total Petroleum Hydrocarbons	0.600	0.20	mg/L	0.7000		86	40-140	2	25	
Triacontane (C30)	0.048	0.005	mg/L	0.05000		95	40-140	3	25	
Surrogate: O-Terphenyl	*0.0982*		mg/L	*0.1000*		*98*	*40-140*			
8260B Volatile Organic Compounds										
Batch CJ92133 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ92133 - 5030B										
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ92133 - 5030B										
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0314*		mg/L	*0.02500*		*126*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0210*		mg/L	*0.02500*		*84*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0294*		mg/L	*0.02500*		*118*	*70-130*			
Surrogate: Toluene-d8	*0.0258*		mg/L	*0.02500*		*103*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130			
1,1,1-Trichloroethane	11.1		ug/L	10.00		111	70-130			
1,1,2,2-Tetrachloroethane	11.8		ug/L	10.00		118	70-130			
1,1,2-Trichloroethane	10.6		ug/L	10.00		106	70-130			
1,1-Dichloroethane	11.4		ug/L	10.00		114	70-130			
1,1-Dichloroethene	11.0		ug/L	10.00		110	70-130			
1,1-Dichloropropene	11.3		ug/L	10.00		113	70-130			
1,2,3-Trichlorobenzene	9.42		ug/L	10.00		94	70-130			
1,2,3-Trichloropropane	10.5		ug/L	10.00		105	70-130			
1,2,4-Trichlorobenzene	8.56		ug/L	10.00		86	70-130			
1,2,4-Trimethylbenzene	9.93		ug/L	10.00		99	70-130			
1,2-Dibromo-3-Chloropropane	10.0		ug/L	10.00		100	70-130			
1,2-Dibromoethane	10.2		ug/L	10.00		102	70-130			
1,2-Dichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,2-Dichloroethane	10.9		ug/L	10.00		109	70-130			
1,2-Dichloropropane	10.5		ug/L	10.00		105	70-130			
1,3,5-Trimethylbenzene	10.0		ug/L	10.00		100	70-130			
1,3-Dichlorobenzene	10.9		ug/L	10.00		109	70-130			
1,3-Dichloropropane	10.9		ug/L	10.00		109	70-130			
1,4-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,4-Dioxane - Screen	204		ug/L	200.0		102	0-332			
1-Chlorohexane	8.60		ug/L	10.00		86	70-130			
2,2-Dichloropropane	12.3		ug/L	10.00		123	70-130			

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ92133 - 5030B										
2-Butanone	57.1		ug/L	50.00		114	70-130			
2-Chlorotoluene	10.8		ug/L	10.00		108	70-130			
2-Hexanone	50.6		ug/L	50.00		101	70-130			
4-Chlorotoluene	11.1		ug/L	10.00		111	70-130			
4-Isopropyltoluene	10.7		ug/L	10.00		107	70-130			
4-Methyl-2-Pentanone	51.0		ug/L	50.00		102	70-130			
Acetone	64.6		ug/L	50.00		129	70-130			
Benzene	11.4		ug/L	10.00		114	70-130			
Bromobenzene	10.3		ug/L	10.00		103	70-130			
Bromochloromethane	10.8		ug/L	10.00		108	70-130			
Bromodichloromethane	11.0		ug/L	10.00		110	70-130			
Bromoform	10.2		ug/L	10.00		102	70-130			
Bromomethane	11.0		ug/L	10.00		110	70-130			
Carbon Disulfide	12.3		ug/L	10.00		123	70-130			
Carbon Tetrachloride	11.6		ug/L	10.00		116	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	10.3		ug/L	10.00		103	70-130			
Chloroform	11.4		ug/L	10.00		114	70-130			
Chloromethane	11.4		ug/L	10.00		114	70-130			
cis-1,2-Dichloroethene	11.0		ug/L	10.00		110	70-130			
cis-1,3-Dichloropropene	9.36		ug/L	10.00		94	70-130			
Dibromochloromethane	10.5		ug/L	10.00		105	70-130			
Dibromomethane	10.9		ug/L	10.00		109	70-130			
Dichlorodifluoromethane	9.44		ug/L	10.00		94	70-130			
Diethyl Ether	11.2		ug/L	10.00		112	70-130			
Di-isopropyl ether	10.4		ug/L	10.00		104	70-130			
Ethyl tertiary-butyl ether	9.33		ug/L	10.00		93	70-130			
Ethylbenzene	9.50		ug/L	10.00		95	70-130			
Hexachlorobutadiene	11.4		ug/L	10.00		114	70-130			
Hexachloroethane	10.8		ug/L	10.00		108	70-130			
Isopropylbenzene	10.3		ug/L	10.00		103	70-130			
Methyl tert-Butyl Ether	11.2		ug/L	10.00		112	70-130			
Methylene Chloride	12.0		ug/L	10.00		120	70-130			
Naphthalene	8.72		ug/L	10.00		87	70-130			
n-Butylbenzene	9.48		ug/L	10.00		95	70-130			
n-Propylbenzene	10.3		ug/L	10.00		103	70-130			
sec-Butylbenzene	9.61		ug/L	10.00		96	70-130			
Styrene	7.75		ug/L	10.00		78	70-130			
tert-Butylbenzene	8.93		ug/L	10.00		89	70-130			
Tertiary-amyl methyl ether	9.65		ug/L	10.00		96	70-130			
Tetrachloroethene	8.14		ug/L	10.00		81	70-130			
Tetrahydrofuran	10.6		ug/L	10.00		106	70-130			
Toluene	10.6		ug/L	10.00		106	70-130			
trans-1,2-Dichloroethene	10.6		ug/L	10.00		106	70-130			
trans-1,3-Dichloropropene	8.94		ug/L	10.00		89	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ92133 - 5030B										
Trichloroethene	10.6		ug/L	10.00		106	70-130			
Trichlorofluoromethane	11.4		ug/L	10.00		114	70-130			
Vinyl Acetate	11.2		ug/L	10.00		112	70-130			
Vinyl Chloride	11.2		ug/L	10.00		112	70-130			
Xylene O	9.45		ug/L	10.00		94	70-130			
Xylene P,M	18.6		ug/L	20.00		93	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0266*		mg/L	*0.02500*		*106*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0258*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0270*		mg/L	*0.02500*		*108*	*70-130*			
Surrogate: Toluene-d8	*0.0243*		mg/L	*0.02500*		*97*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.2		ug/L	10.00		102	70-130	4	25	
1,1,1-Trichloroethane	10.8		ug/L	10.00		108	70-130	2	25	
1,1,2,2-Tetrachloroethane	11.2		ug/L	10.00		112	70-130	5	25	
1,1,2-Trichloroethane	10.6		ug/L	10.00		106	70-130	0.09	25	
1,1-Dichloroethane	11.1		ug/L	10.00		111	70-130	2	25	
1,1-Dichloroethene	10.9		ug/L	10.00		109	70-130	0.9	25	
1,1-Dichloropropene	11.1		ug/L	10.00		111	70-130	2	25	
1,2,3-Trichlorobenzene	8.68		ug/L	10.00		87	70-130	8	25	
1,2,3-Trichloropropane	9.97		ug/L	10.00		100	70-130	6	25	
1,2,4-Trichlorobenzene	8.03		ug/L	10.00		80	70-130	6	25	
1,2,4-Trimethylbenzene	9.51		ug/L	10.00		95	70-130	4	25	
1,2-Dibromo-3-Chloropropane	9.30		ug/L	10.00		93	70-130	7	25	
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130	0.9	25	
1,2-Dichlorobenzene	9.74		ug/L	10.00		97	70-130	6	25	
1,2-Dichloroethane	10.6		ug/L	10.00		106	70-130	3	25	
1,2-Dichloropropane	10.2		ug/L	10.00		102	70-130	3	25	
1,3,5-Trimethylbenzene	9.60		ug/L	10.00		96	70-130	4	25	
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130	6	25	
1,3-Dichloropropane	10.7		ug/L	10.00		107	70-130	2	25	
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	6	25	
1,4-Dioxane - Screen	205		ug/L	200.0		102	0-332	0.6	200	
1-Chlorohexane	8.56		ug/L	10.00		86	70-130	0.5	25	
2,2-Dichloropropane	11.9		ug/L	10.00		119	70-130	4	25	
2-Butanone	53.8		ug/L	50.00		108	70-130	6	25	
2-Chlorotoluene	10.5		ug/L	10.00		105	70-130	3	25	
2-Hexanone	49.6		ug/L	50.00		99	70-130	2	25	
4-Chlorotoluene	10.6		ug/L	10.00		106	70-130	4	25	
4-Isopropyltoluene	10.2		ug/L	10.00		102	70-130	5	25	
4-Methyl-2-Pentanone	49.6		ug/L	50.00		99	70-130	3	25	
Acetone	55.7		ug/L	50.00		111	70-130	15	25	
Benzene	11.1		ug/L	10.00		111	70-130	2	25	
Bromobenzene	9.89		ug/L	10.00		99	70-130	4	25	
Bromochloromethane	10.4		ug/L	10.00		104	70-130	3	25	
Bromodichloromethane	10.7		ug/L	10.00		107	70-130	3	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CJ92133 - 5030B										
Bromoform	9.96		ug/L	10.00		100	70-130	3	25	
Bromomethane	10.5		ug/L	10.00		105	70-130	5	25	
Carbon Disulfide	12.0		ug/L	10.00		120	70-130	2	25	
Carbon Tetrachloride	11.1		ug/L	10.00		111	70-130	5	25	
Chlorobenzene	10.0		ug/L	10.00		100	70-130	0.6	25	
Chloroethane	9.82		ug/L	10.00		98	70-130	5	25	
Chloroform	11.0		ug/L	10.00		110	70-130	3	25	
Chloromethane	10.7		ug/L	10.00		107	70-130	6	25	
cis-1,2-Dichloroethene	10.7		ug/L	10.00		107	70-130	3	25	
cis-1,3-Dichloropropene	9.11		ug/L	10.00		91	70-130	3	25	
Dibromochloromethane	10.1		ug/L	10.00		101	70-130	4	25	
Dibromomethane	10.6		ug/L	10.00		106	70-130	3	25	
Dichlorodifluoromethane	8.87		ug/L	10.00		89	70-130	6	25	
Diethyl Ether	11.0		ug/L	10.00		110	70-130	2	25	
Di-isopropyl ether	10.1		ug/L	10.00		101	70-130	4	25	
Ethyl tertiary-butyl ether	9.21		ug/L	10.00		92	70-130	1	25	
Ethylbenzene	9.37		ug/L	10.00		94	70-130	1	25	
Hexachlorobutadiene	10.2		ug/L	10.00		102	70-130	11	25	
Hexachloroethane	10.6		ug/L	10.00		106	70-130	2	25	
Isopropylbenzene	9.94		ug/L	10.00		99	70-130	4	25	
Methyl tert-Butyl Ether	10.9		ug/L	10.00		109	70-130	3	25	
Methylene Chloride	11.9		ug/L	10.00		119	70-130	0.8	25	
Naphthalene	8.09		ug/L	10.00		81	70-130	7	25	
n-Butylbenzene	8.96		ug/L	10.00		90	70-130	6	25	
n-Propylbenzene	9.97		ug/L	10.00		100	70-130	3	25	
sec-Butylbenzene	9.20		ug/L	10.00		92	70-130	4	25	
Styrene	7.71		ug/L	10.00		77	70-130	0.5	25	
tert-Butylbenzene	8.64		ug/L	10.00		86	70-130	3	25	
Tertiary-amyl methyl ether	9.50		ug/L	10.00		95	70-130	2	25	
Tetrachloroethene	8.01		ug/L	10.00		80	70-130	2	25	
Tetrahydrofuran	10.5		ug/L	10.00		105	70-130	0.3	25	
Toluene	10.4		ug/L	10.00		104	70-130	3	25	
trans-1,2-Dichloroethene	10.5		ug/L	10.00		105	70-130	1	25	
trans-1,3-Dichloropropene	8.67		ug/L	10.00		87	70-130	3	25	
Trichloroethene	10.3		ug/L	10.00		103	70-130	2	25	
Trichlorofluoromethane	11.0		ug/L	10.00		110	70-130	3	25	
Vinyl Acetate	11.1		ug/L	10.00		111	70-130	1	25	
Vinyl Chloride	10.7		ug/L	10.00		107	70-130	5	25	
Xylene O	9.19		ug/L	10.00		92	70-130	3	25	
Xylene P,M	18.4		ug/L	20.00		92	70-130	0.8	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0262*		mg/L	*0.02500*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0262*		mg/L	*0.02500*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0263*		mg/L	*0.02500*		*105*	*70-130*			
Surrogate: Toluene-d8	*0.0242*		mg/L	*0.02500*		*97*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0660*		mg/L	*0.1000*		*66*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.0997*		mg/L	*0.1500*		*66*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.101*		mg/L	*0.1500*		*68*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0648*		mg/L	*0.1000*		*65*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0865*		mg/L	*0.1500*		*58*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0728*		mg/L	*0.1000*		*73*	*30-130*			
Surrogate: Phenol-d6	*0.0994*		mg/L	*0.1500*		*66*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0749*		mg/L	*0.1000*		*75*	*30-130*			
LCS										
1,1-Biphenyl	0.084	0.010	mg/L	0.1000		84	40-140			
1,2,4-Trichlorobenzene	0.082	0.010	mg/L	0.1000		82	40-140			
1,2-Dichlorobenzene	0.077	0.010	mg/L	0.1000		77	40-140			
1,3-Dichlorobenzene	0.078	0.010	mg/L	0.1000		78	40-140			
1,4-Dichlorobenzene	0.076	0.010	mg/L	0.1000		76	40-140			
2,3,4,6-Tetrachlorophenol	0.083	0.050	mg/L	0.1000		83	40-140			
2,4,5-Trichlorophenol	0.095	0.010	mg/L	0.1000		95	30-130			
2,4,6-Trichlorophenol	0.091	0.010	mg/L	0.1000		91	30-130			
2,4-Dichlorophenol	0.083	0.010	mg/L	0.1000		83	30-130			
2,4-Dimethylphenol	0.079	0.050	mg/L	0.1000		79	30-130			
2,4-Dinitrophenol	0.089	0.050	mg/L	0.1000		89	30-130			
2,4-Dinitrotoluene	0.092	0.010	mg/L	0.1000		92	40-140			
2,6-Dinitrotoluene	0.087	0.010	mg/L	0.1000		87	40-140			
2-Chloronaphthalene	0.084	0.010	mg/L	0.1000		84	40-140			
2-Chlorophenol	0.080	0.010	mg/L	0.1000		80	30-130			
2-Methylphenol	0.082	0.010	mg/L	0.1000		82	30-130			
2-Nitroaniline	0.080	0.010	mg/L	0.1000		80	40-140			
2-Nitrophenol	0.081	0.010	mg/L	0.1000		81	30-130			
3,3´-Dichlorobenzidine	0.085	0.020	mg/L	0.1000		85	40-140			
3+4-Methylphenol	0.174	0.020	mg/L	0.2000		87	30-130			
3-Nitroaniline	0.089	0.010	mg/L	0.1000		89	40-140			
4,6-Dinitro-2-Methylphenol	0.098	0.050	mg/L	0.1000		98	30-130			
4-Bromophenyl-phenylether	0.086	0.010	mg/L	0.1000		86	40-140			
4-Chloro-3-Methylphenol	0.087	0.010	mg/L	0.1000		87	30-130			
4-Chloroaniline	0.080	0.020	mg/L	0.1000		80	40-140			
4-Chloro-phenyl-phenyl ether	0.089	0.010	mg/L	0.1000		89	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
4-Nitroaniline	0.080	0.010	mg/L	0.1000		80	40-140			
4-Nitrophenol	0.087	0.050	mg/L	0.1000		87	30-130			
Acetophenone	0.083	0.010	mg/L	0.1000		83	40-140			
Aniline	0.070	0.010	mg/L	0.1000		70	40-140			
Azobenzene	0.086	0.020	mg/L	0.1000		86	40-140			
Benzoic Acid	0.072	0.100	mg/L	0.1000		72	40-140			
Benzyl Alcohol	0.087	0.010	mg/L	0.1000		87	40-140			
bis(2-Chloroethoxy)methane	0.084	0.010	mg/L	0.1000		84	40-140			
bis(2-Chloroethyl)ether	0.084	0.010	mg/L	0.1000		84	40-140			
bis(2-chloroisopropyl)Ether	0.079	0.010	mg/L	0.1000		79	40-140			
bis(2-Ethylhexyl)phthalate	0.093	0.006	mg/L	0.1000		93	40-140			
Butylbenzylphthalate	0.093	0.010	mg/L	0.1000		93	40-140			
Carbazole	0.087	0.010	mg/L	0.1000		87	40-140			
Dibenzofuran	0.087	0.010	mg/L	0.1000		87	40-140			
Diethylphthalate	0.092	0.010	mg/L	0.1000		92	40-140			
Dimethylphthalate	0.092	0.010	mg/L	0.1000		92	40-140			
Di-n-butylphthalate	0.083	0.010	mg/L	0.1000		83	40-140			
Di-n-octylphthalate	0.096	0.010	mg/L	0.1000		96	40-140			
Hexachlorobutadiene	0.081	0.010	mg/L	0.1000		81	40-140			
Hexachlorocyclopentadiene	0.066	0.025	mg/L	0.1000		66	40-140			
Hexachloroethane	0.077	0.005	mg/L	0.1000		77	40-140			
Isophorone	0.079	0.010	mg/L	0.1000		79	40-140			
Nitrobenzene	0.083	0.010	mg/L	0.1000		83	40-140			
N-Nitrosodimethylamine	0.060	0.010	mg/L	0.1000		60	40-140			
N-Nitroso-Di-n-Propylamine	0.082	0.010	mg/L	0.1000		82	40-140			
N-nitrosodiphenylamine	0.085	0.010	mg/L	0.1000		85	40-140			
Phenol	0.092	0.010	mg/L	0.1000		92	30-130			
Pyridine	0.062	0.100	mg/L	0.1000		62	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0823*		mg/L	*0.1000*		*82*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.133*		mg/L	*0.1500*		*89*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.133*		mg/L	*0.1500*		*88*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0914*		mg/L	*0.1000*		*91*	*30-130*			
Surrogate: 2-Fluorophenol	*0.123*		mg/L	*0.1500*		*82*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0931*		mg/L	*0.1000*		*93*	*30-130*			
Surrogate: Phenol-d6	*0.138*		mg/L	*0.1500*		*92*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.101*		mg/L	*0.1000*		*101*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.090	0.010	mg/L	0.1000		90	40-140	7	20	
1,2,4-Trichlorobenzene	0.086	0.010	mg/L	0.1000		86	40-140	5	20	
1,2-Dichlorobenzene	0.085	0.010	mg/L	0.1000		85	40-140	11	20	
1,3-Dichlorobenzene	0.080	0.010	mg/L	0.1000		80	40-140	3	20	
1,4-Dichlorobenzene	0.079	0.010	mg/L	0.1000		79	40-140	4	20	
2,3,4,6-Tetrachlorophenol	0.093	0.050	mg/L	0.1000		93	40-140	11	20	
2,4,5-Trichlorophenol	0.104	0.010	mg/L	0.1000		104	30-130	8	20	
2,4,6-Trichlorophenol	0.102	0.010	mg/L	0.1000		102	30-130	11	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
2,4-Dichlorophenol	0.087	0.010	mg/L	0.1000		87	30-130	5	20	
2,4-Dimethylphenol	0.075	0.050	mg/L	0.1000		75	30-130	5	20	
2,4-Dinitrophenol	0.095	0.050	mg/L	0.1000		95	30-130	6	20	
2,4-Dinitrotoluene	0.103	0.010	mg/L	0.1000		103	40-140	11	20	
2,6-Dinitrotoluene	0.092	0.010	mg/L	0.1000		92	40-140	5	20	
2-Chloronaphthalene	0.092	0.010	mg/L	0.1000		92	40-140	9	20	
2-Chlorophenol	0.087	0.010	mg/L	0.1000		87	30-130	9	20	
2-Methylphenol	0.091	0.010	mg/L	0.1000		91	30-130	11	20	
2-Nitroaniline	0.083	0.010	mg/L	0.1000		83	40-140	5	20	
2-Nitrophenol	0.083	0.010	mg/L	0.1000		83	30-130	2	20	
3,3´-Dichlorobenzidine	0.084	0.020	mg/L	0.1000		84	40-140	2	20	
3+4-Methylphenol	0.190	0.020	mg/L	0.2000		95	30-130	9	20	
3-Nitroaniline	0.091	0.010	mg/L	0.1000		91	40-140	2	20	
4,6-Dinitro-2-Methylphenol	0.108	0.050	mg/L	0.1000		108	30-130	10	20	
4-Bromophenyl-phenylether	0.095	0.010	mg/L	0.1000		95	40-140	10	20	
4-Chloro-3-Methylphenol	0.081	0.010	mg/L	0.1000		81	30-130	6	20	
4-Chloroaniline	0.080	0.020	mg/L	0.1000		80	40-140	0.5	20	
4-Chloro-phenyl-phenyl ether	0.097	0.010	mg/L	0.1000		97	40-140	9	20	
4-Nitroaniline	0.087	0.010	mg/L	0.1000		87	40-140	8	20	
4-Nitrophenol	0.089	0.050	mg/L	0.1000		89	30-130	2	20	
Acetophenone	0.091	0.010	mg/L	0.1000		91	40-140	10	20	
Aniline	0.074	0.010	mg/L	0.1000		74	40-140	6	20	
Azobenzene	0.090	0.020	mg/L	0.1000		90	40-140	5	20	
Benzoic Acid	0.074	0.100	mg/L	0.1000		74	40-140	3	20	
Benzyl Alcohol	0.097	0.010	mg/L	0.1000		97	40-140	10	20	
bis(2-Chloroethoxy)methane	0.085	0.010	mg/L	0.1000		85	40-140	0.4	20	
bis(2-Chloroethyl)ether	0.092	0.010	mg/L	0.1000		92	40-140	9	20	
bis(2-chloroisopropyl)Ether	0.089	0.010	mg/L	0.1000		89	40-140	11	20	
bis(2-Ethylhexyl)phthalate	0.091	0.006	mg/L	0.1000		91	40-140	2	20	
Butylbenzylphthalate	0.089	0.010	mg/L	0.1000		89	40-140	5	20	
Carbazole	0.098	0.010	mg/L	0.1000		98	40-140	12	20	
Dibenzofuran	0.097	0.010	mg/L	0.1000		97	40-140	10	20	
Diethylphthalate	0.102	0.010	mg/L	0.1000		102	40-140	10	20	
Dimethylphthalate	0.094	0.010	mg/L	0.1000		94	40-140	2	20	
Di-n-butylphthalate	0.093	0.010	mg/L	0.1000		93	40-140	11	20	
Di-n-octylphthalate	0.093	0.010	mg/L	0.1000		93	40-140	3	20	
Hexachlorobutadiene	0.083	0.010	mg/L	0.1000		83	40-140	2	20	
Hexachlorocyclopentadiene	0.077	0.025	mg/L	0.1000		77	40-140	15	20	
Hexachloroethane	0.079	0.005	mg/L	0.1000		79	40-140	2	20	
Isophorone	0.079	0.010	mg/L	0.1000		79	40-140	0.1	20	
Nitrobenzene	0.086	0.010	mg/L	0.1000		86	40-140	3	20	
N-Nitrosodimethylamine	0.087	0.010	mg/L	0.1000		87	40-140	36	20	D+
N-Nitroso-Di-n-Propylamine	0.091	0.010	mg/L	0.1000		91	40-140	10	20	
N-nitrosodiphenylamine	0.092	0.010	mg/L	0.1000		92	40-140	7	20	
Phenol	0.100	0.010	mg/L	0.1000		100	30-130	8	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
Pyridine	0.081	0.100	mg/L	0.1000		81	40-140	26	20	D+
Surrogate: 1,2-Dichlorobenzene-d4	*0.0911*		mg/L	*0.1000*		*91*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.148*		mg/L	*0.1500*		*99*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.142*		mg/L	*0.1500*		*95*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0992*		mg/L	*0.1000*		*99*	*30-130*			
Surrogate: 2-Fluorophenol	*0.133*		mg/L	*0.1500*		*89*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0934*		mg/L	*0.1000*		*93*	*30-130*			
Surrogate: Phenol-d6	*0.147*		mg/L	*0.1500*		*98*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.114*		mg/L	*0.1000*		*114*	*30-130*			
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	0.00005	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	0.00006	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	0.00005	0.00005	mg/L							
Chrysene	0.00005	0.00005	mg/L							
Dibenzo(a,h)Anthracene	0.00006	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	0.00006	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.111	0.00400	mg/L	0.1000		111	40-140			
Acenaphthene	0.0868	0.00400	mg/L	0.1000		87	40-140			
Acenaphthylene	0.0859	0.00400	mg/L	0.1000		86	40-140			
Anthracene	0.0810	0.00400	mg/L	0.1000		81	40-140			
Benzo(a)anthracene	0.0828	0.00100	mg/L	0.1000		83	40-140			
Benzo(a)pyrene	0.0788	0.00100	mg/L	0.1000		79	40-140			
Benzo(b)fluoranthene	0.0859	0.00100	mg/L	0.1000		86	40-140			
Benzo(g,h,i)perylene	0.0843	0.00400	mg/L	0.1000		84	40-140			
Benzo(k)fluoranthene	0.0757	0.00100	mg/L	0.1000		76	40-140			
Chrysene	0.0813	0.00100	mg/L	0.1000		81	40-140			
Dibenzo(a,h)Anthracene	0.0869	0.00100	mg/L	0.1000		87	40-140			
Fluoranthene	0.0821	0.00400	mg/L	0.1000		82	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CJ92113 - 3520C										
Fluorene	0.0870	0.00400	mg/L	0.1000		87	40-140			
Hexachlorobenzene	0.101	0.00400	mg/L	0.1000		101	40-140			
Indeno(1,2,3-cd)Pyrene	0.0924	0.00100	mg/L	0.1000		92	40-140			
Naphthalene	0.0780	0.00400	mg/L	0.1000		78	40-140			
Pentachlorophenol	0.0662	0.0180	mg/L	0.1000		66	30-130			
Phenanthrene	0.0794	0.00400	mg/L	0.1000		79	40-140			
Pyrene	0.0882	0.00400	mg/L	0.1000		88	40-140			
LCS Dup										
2-Methylnaphthalene	0.0796	0.00400	mg/L	0.1000		80	40-140	33	20	D+
Acenaphthene	0.0872	0.00400	mg/L	0.1000		87	40-140	0.4	20	
Acenaphthylene	0.0866	0.00400	mg/L	0.1000		87	40-140	0.7	20	
Anthracene	0.0809	0.00400	mg/L	0.1000		81	40-140	0.1	20	
Benzo(a)anthracene	0.0816	0.00100	mg/L	0.1000		82	40-140	2	20	
Benzo(a)pyrene	0.0775	0.00100	mg/L	0.1000		78	40-140	2	20	
Benzo(b)fluoranthene	0.0857	0.00100	mg/L	0.1000		86	40-140	0.2	20	
Benzo(g,h,i)perylene	0.0870	0.00400	mg/L	0.1000		87	40-140	3	20	
Benzo(k)fluoranthene	0.0729	0.00100	mg/L	0.1000		73	40-140	4	20	
Chrysene	0.0803	0.00100	mg/L	0.1000		80	40-140	1	20	
Dibenzo(a,h)Anthracene	0.0873	0.00100	mg/L	0.1000		87	40-140	0.5	20	
Fluoranthene	0.0828	0.00400	mg/L	0.1000		83	40-140	0.8	20	
Fluorene	0.0860	0.00400	mg/L	0.1000		86	40-140	1	20	
Hexachlorobenzene	0.101	0.00400	mg/L	0.1000		101	40-140	0.1	20	
Indeno(1,2,3-cd)Pyrene	0.0894	0.00100	mg/L	0.1000		89	40-140	3	20	
Naphthalene	0.0788	0.00400	mg/L	0.1000		79	40-140	1	20	
Pentachlorophenol	0.0736	0.0180	mg/L	0.1000		74	30-130	11	20	
Phenanthrene	0.0795	0.00400	mg/L	0.1000		80	40-140	0.1	20	
Pyrene	0.0850	0.00400	mg/L	0.1000		85	40-140	4	20	
Classical Chemistry										
Batch CJ91836 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	0.5	mg/L							
Total Organic Carbon (2)	ND	0.5	mg/L							
LCS										
Total Organic Carbon (1)	5.0	0.5	mg/L	5.000		101	80-120			
Total Organic Carbon (2)	5.1	0.5	mg/L	5.000		103	80-120			
LCS Dup										
Total Organic Carbon (1)	5.1	0.5	mg/L	5.000		102	80-120	1	20	
Total Organic Carbon (2)	5.2	0.5	mg/L	5.000		103	80-120	0.3	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

Notes and Definitions

U	Analyte included in the analysis, but not detected
Q	Calibration required quadratic regression (Q).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19J0622

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ~~ESS Courier~~ client in vehicle

ESS Project ID: 19J0622
Date Received: 10/17/2019
Project Due Date: 10/24/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: ~~2.6~~ 3.1 Iced with: Ice
   jjs 10/24/19
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	400075	Yes	No	Yes	VOA Vial - HCl	HCl	
01	400076	Yes	No	Yes	VOA Vial - HCl	HCl	
01	400077	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	400078	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	400079	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	400080	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
01	400081	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400082	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400225	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400226	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400227	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400228	Yes	NA	Yes	1L Amber - Unpres	NP	
02	400073	Yes	No	Yes	VOA Vial - HCl	HCl	

2nd Review
Were all containers scanned into storage/lab? Initials
Are barcode labels on correct containers? Yes / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0622
Date Received: 10/17/2019

Completed By:		Date & Time:	10/18/19 1401
Reviewed By:		Date & Time:	10/18/19 1423
Delivered By:			10/18/19 1423

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ~~ESS Courier~~ client in vehicle

ESS Project ID: 19J0622
Date Received: 10/17/2019
Project Due Date: 10/24/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.0 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	400075	Yes	No	Yes	VOA Vial - HCl	HCl	
01	400076	Yes	No	Yes	VOA Vial - HCl	HCl	
01	400077	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	400078	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	400079	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	400080	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
01	400081	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400082	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400225	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400226	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400227	Yes	NA	Yes	1L Amber - Unpres	NP	
01	400228	Yes	NA	Yes	1L Amber - Unpres	NP	
02	400073	Yes	No	Yes	VOA Vial - HCl	HCl	

2nd Review
Were all containers scanned into storage/lab? Initials
Are barcode labels on correct containers? Yes / No
Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA
Are all Hex Chrome stickers attached? Yes / No / NA
Are all QC stickers attached? Yes / No / NA
Are VOA stickers attached if bubbles noted? Yes / No / NA

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19J0622

Date Received: 10/17/2019

Completed By:		Date & Time:	10/18/19 1401
Reviewed By:		Date & Time:	10/18/19 1423
Delivered By:			10/18/19 1423

CHAIN OF CUSTODY

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

ESS Lab # 190622

Reporting Limits

Electonic Deliverables: ☒ Data Checker ☒ Excel ☒ Other (Please Specify →) PDF

Company Name: GZA	Turn Time: 5 Days	Project #: 346449	Project Name: TNK - Away Landfill
Contact Person: Richard Carlone	Regulatory State: RI	Address: 100 Valley St, Suite 300	
City: Providence	State: RI	Zip Code: 02909	PO #:
Telephone Number:	FAX Number:	Email Address: richard.carlone@gza.com	

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOC	TOC	Metals	SVOC	PCB	TPH	Pest.
1	10/17/19	0930	Grab	SW	SSW-11	X	X	X	X	X	X	X
2	10/17/19	0900			Trip Blank	X						

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial — V V P AG AG AG AG

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 7 7 3 6 6 6 6

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* — 2 2 4 1 1 1 1

Number of Containers per Sample: 3 2 1 2 2 1 1

Laboratory Use Only

Cooler Present: Y ○ Drop Off
Seals Intact: NA ○ Pickup
Cooler Temperature: 2.0 2.9 °C 3.1

Sampled by: Rowan Hayes

Comments: Please specify "Other" preservative and containers types in this space
All SW samples were field filtered.
1. SW metals: 15 solid waste, mercury, iron

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/17/19 1600	10/17/19 1608		
Relinquished by: (Signature, Date & Time) 10/17/19 (PDH)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Carlone
GZA GeoEnvironmental, Inc.
188 Valley Street
Providence, RI 02909

RE: Truk Away Landfill (03.0034648)
ESS Laboratory Work Order Number: 19L0295

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 1:02 pm, Dec 18, 2019

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

SAMPLE RECEIPT

The following samples were received on December 10, 2019 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
19L0295-01	SSW-1	Surface Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-02	SSW-11	Surface Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-03	SSW-10	Surface Water	8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-04	SSW-9	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-05	SSW-8	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-06	SSW-7	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-07	SSW-2	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-08	SSW-3	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-09	SSW-4	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-10	SSW-6	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-11	SSW-5	Surface Water	6010C, 6020A, 7470A, 8081B, 8082A, 8100M, 8260B, 8270D, 8270D SIM, 9060
19L0295-12	Trip Blank	Aqueous	8260B

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

PROJECT NARRATIVE

8270D Semi-Volatile Organic Compounds

19L0295-04	**Surrogate recovery(ies) below lower control limit (S-).**
	p-Terphenyl-d14 (29% @ 30-130%)
19L0295-08	**Surrogate recovery(ies) below lower control limit (S-).**
	p-Terphenyl-d14 (21% @ 30-130%)
19L0295-09	**Surrogate recovery(ies) below lower control limit (S-).**
	p-Terphenyl-d14 (27% @ 30-130%)
C9L0193-CCV2	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (88% @ 80-120%), 4,6-Dinitro-2-Methylphenol (101% @ 80-120%), Benzoic Acid (94% @ 80-120%)
C9L0193-CCV2	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	3,3′-Dichlorobenzidine (21% @ 20%), 4-Nitroaniline (23% @ 20%), N-nitrosodiphenylamine (29% @ 20%)
C9L0193-CCV2	**Initial Calibration Verification recovery is below lower control limit (ICV-).**
	Aniline
C9L0226-CCV2	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (114% @ 80-120%), 4,6-Dinitro-2-Methylphenol (106% @ 80-120%), Benzoic Acid (106% @ 80-120%)
C9L0226-CCV2	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	N-nitrosodiphenylamine (30% @ 20%)
C9L0226-CCV2	**Initial Calibration Verification recovery is below lower control limit (ICV-).**
	Aniline
C9L0254-CCV1	**Calibration required quadratic regression (Q).**
	2,4-Dinitrophenol (72% @ 80-120%), Benzoic Acid (89% @ 80-120%)
C9L0254-CCV1	**Continuing Calibration %Diff/Drift is above control limit (CD+).**
	2-Nitroaniline (24% @ 20%), Aniline (23% @ 20%), N-Nitroso-Di-n-Propylamine (25% @ 20%), Phenol (31% @ 20%), Pyridine (21% @ 20%)
C9L0254-CCV1	**Continuing Calibration %Diff/Drift is below control limit (CD-).**
	2,4-Dinitrophenol (28% @ 20%)

8270D(SIM) Semi-Volatile Organic Compounds

C9L0206-CCV1	**Calibration required quadratic regression (Q).**
	Pentachlorophenol (90% @ 80-120%)
C9L0206-TUN1	**Pentachlorophenol tailing factor > 2.**
C9L0252-CCV1	**Calibration required quadratic regression (Q).**
	Pentachlorophenol (95% @ 80-120%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill ESS Laboratory Work Order: 19L0295

DATA USABILITY LINKS

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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

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 18-2.1 - 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
5035A - Solid Purge and Trap

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

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 18:46	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 18:46	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 18:46	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*76 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*76 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*78 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 14:18		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 14:18		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*52 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*48 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*54 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	12/12/19 3:35	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*96 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/12/19 15:05	C9L0181	CL91143
1-Chlorohexane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
2-Butanone	ND (0.0100)		8260B		1	12/12/19 15:05	C9L0181	CL91143
2-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
2-Hexanone	ND (0.0100)		8260B		1	12/12/19 15:05	C9L0181	CL91143
4-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Acetone	ND (0.0100)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Benzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Bromobenzene	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Bromodichloromethane	ND (0.0006)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Bromoform	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Bromomethane	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Carbon Disulfide	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Chlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Chloroethane	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Chloroform	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Chloromethane	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Dibromochloromethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Dibromomethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Diethyl Ether	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Di-isopropyl ether	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Ethylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Hexachloroethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Isopropylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Methylene Chloride	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Naphthalene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
n-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
n-Propylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
sec-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Styrene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
tert-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Tetrachloroethene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Toluene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Trichloroethene	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Vinyl Acetate	ND (0.0050)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Vinyl Chloride	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Xylene O	ND (0.0010)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Xylene P,M	ND (0.0020)		8260B		1	12/12/19 15:05	C9L0181	CL91143
Xylenes (Total)	ND (0.00200)		8260B		1	12/12/19 15:05		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*99 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*97 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/12/19 19:05	C9L0193	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/12/19 19:05	C9L0193	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Acetophenone	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Aniline	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Azobenzene	ND (0.019)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/12/19 19:05	C9L0193	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Carbazole	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Isophorone	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Phenol	ND (0.009)		8270D		1	12/12/19 19:05	C9L0193	CL91105
Pyridine	ND (0.093)		8270D		1	12/12/19 19:05	C9L0193	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*70 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*82 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*73 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*72 %*		*30-130*
Surrogate: 2-Fluorophenol	*67 %*		*15-110*
Surrogate: Nitrobenzene-d5	*76 %*		*30-130*
Surrogate: Phenol-d6	*73 %*		*15-110*
Surrogate: p-Terphenyl-d14	*67 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/11/19 17:10

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Chrysene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Fluoranthene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105
Pyrene	ND (0.00019)		8270D SIM		1	12/13/19 7:56	C9L0206	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-1
Date Sampled: 12/10/19 08:00
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-01
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**6.13** (0.500)		9060		1	CCP	12/12/19 17:57	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 19:17	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 19:17	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 19:17	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*65 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*64 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 14:37		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 14:37		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*63 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*51 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*57 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	ND (0.19)		8100M		1	12/12/19 4:07	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*94 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/12/19 15:32	C9L0181	CL91143
1-Chlorohexane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
2-Butanone	ND (0.0100)		8260B		1	12/12/19 15:32	C9L0181	CL91143
2-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
2-Hexanone	ND (0.0100)		8260B		1	12/12/19 15:32	C9L0181	CL91143
4-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Acetone	ND (0.0100)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Benzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Bromobenzene	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Bromodichloromethane	ND (0.0006)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Bromoform	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Bromomethane	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Carbon Disulfide	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Chlorobenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Chloroethane	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Chloroform	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Chloromethane	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Dibromochloromethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Dibromomethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Diethyl Ether	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Di-isopropyl ether	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Ethylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Hexachloroethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Isopropylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Methylene Chloride	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Naphthalene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
n-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
n-Propylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
sec-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Styrene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
tert-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Tetrachloroethene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Toluene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Trichloroethene	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Vinyl Acetate	ND (0.0050)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Vinyl Chloride	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Xylene O	ND (0.0010)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Xylene P,M	ND (0.0020)		8260B		1	12/12/19 15:32	C9L0181	CL91143
Xylenes (Total)	ND (0.00200)		8260B		1	12/12/19 15:32		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*103 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/12/19 19:31	C9L0193	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/12/19 19:31	C9L0193	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Acetophenone	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Aniline	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Azobenzene	ND (0.019)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/12/19 19:31	C9L0193	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Carbazole	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Isophorone	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Phenol	ND (0.009)		8270D		1	12/12/19 19:31	C9L0193	CL91105
Pyridine	ND (0.093)		8270D		1	12/12/19 19:31	C9L0193	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*68 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*86 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*76 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*71 %*		*30-130*
Surrogate: 2-Fluorophenol	*72 %*		*15-110*
Surrogate: Nitrobenzene-d5	*74 %*		*30-130*
Surrogate: Phenol-d6	*76 %*		*15-110*
Surrogate: p-Terphenyl-d14	*66 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/11/19 17:10

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Chrysene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Fluoranthene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105
Pyrene	ND (0.00019)		8270D SIM		1	12/13/19 8:44	C9L0206	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-11
Date Sampled: 12/10/19 09:00
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-02
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**7.77** (0.500)		9060		1	CCP	12/12/19 18:10	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 19:47	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 19:47	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 19:47	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*63 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 14:56		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 14:56		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*51 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*59 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*44 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*49 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.20** (0.19)		8100M		1	12/12/19 4:39	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/12/19 16:35	C9L0181	CL91143
1-Chlorohexane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
2-Butanone	ND (0.0100)		8260B		1	12/12/19 16:35	C9L0181	CL91143
2-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
2-Hexanone	ND (0.0100)		8260B		1	12/12/19 16:35	C9L0181	CL91143
4-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Acetone	ND (0.0100)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Benzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Bromobenzene	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Bromodichloromethane	ND (0.0006)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Bromoform	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Bromomethane	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Carbon Disulfide	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Chlorobenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Chloroethane	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Chloroform	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Chloromethane	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Dibromochloromethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Dibromomethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Diethyl Ether	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Di-isopropyl ether	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Ethylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Hexachloroethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Isopropylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Methylene Chloride	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Naphthalene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
n-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
n-Propylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
sec-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Styrene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
tert-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Tetrachloroethene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Toluene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Trichloroethene	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Vinyl Acetate	ND (0.0050)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Vinyl Chloride	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Xylene O	ND (0.0010)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Xylene P,M	ND (0.0020)		8260B		1	12/12/19 16:35	C9L0181	CL91143
Xylenes (Total)	ND (0.00200)		8260B		1	12/12/19 16:35		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/12/19 19:57	C9L0193	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/12/19 19:57	C9L0193	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Acetophenone	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Aniline	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Azobenzene	ND (0.019)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/12/19 19:57	C9L0193	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Carbazole	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Isophorone	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Phenol	ND (0.009)		8270D		1	12/12/19 19:57	C9L0193	CL91105
Pyridine	ND (0.093)		8270D		1	12/12/19 19:57	C9L0193	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*87 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*83 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*78 %*		*30-130*
Surrogate: 2-Fluorophenol	*77 %*		*15-110*
Surrogate: Nitrobenzene-d5	*81 %*		*30-130*
Surrogate: Phenol-d6	*81 %*		*15-110*
Surrogate: p-Terphenyl-d14	*51 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/11/19 17:10

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Chrysene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Fluoranthene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105
Pyrene	ND (0.00019)		8270D SIM		1	12/13/19 9:31	C9L0206	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-10
Date Sampled: 12/10/19 09:40
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-03
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**13.0** (0.500)		9060		1	CCP	12/12/19 18:23	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 18:15	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 18:15	10	10	CL91024
Barium	**0.159** (0.050)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 18:15	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Iron	**22.6** (0.100)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 18:15	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:06	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 18:15	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 18:15	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024
Zinc	ND (0.050)		6010C		1	KJK	12/11/19 12:01	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 20:18	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 20:18	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 20:18	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*41 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*43 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1242	**0.20** (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 15:15		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 15:15		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*39 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*48 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*48 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**1.52** (0.20)		8100M		1	12/12/19 5:11	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2,4-Trimethylbenzene	**0.0196** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,4-Dichlorobenzene	**0.0046** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/12/19 17:02	C9L0181	CL91143
1-Chlorohexane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
2-Butanone	ND (0.0100)		8260B		1	12/12/19 17:02	C9L0181	CL91143
2-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
2-Hexanone	ND (0.0100)		8260B		1	12/12/19 17:02	C9L0181	CL91143
4-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Acetone	**0.0114** (0.0100)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Benzene	**0.0036** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Bromobenzene	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Bromodichloromethane	ND (0.0006)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Bromoform	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Bromomethane	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Carbon Disulfide	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Chlorobenzene	**0.0257** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Chloroethane	**0.0204** (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Chloroform	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Chloromethane	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Dibromochloromethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Dibromomethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Diethyl Ether	**0.0020** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Di-isopropyl ether	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Ethylbenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Hexachloroethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Isopropylbenzene	**0.0019** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Methylene Chloride	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Naphthalene	**0.0012** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
n-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
n-Propylbenzene	**0.0031** (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
sec-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Styrene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
tert-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Tetrachloroethene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	**0.0247** (0.0050)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Toluene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Trichloroethene	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Vinyl Acetate	ND (0.0050)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Vinyl Chloride	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Xylene O	ND (0.0010)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Xylene P,M	ND (0.0020)		8260B		1	12/12/19 17:02	C9L0181	CL91143
Xylenes (Total)	ND (0.00200)		8260B		1	12/12/19 17:02		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*103 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*102 %*		*70-130*
Surrogate: Dibromofluoromethane	*98 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
1,4-Dichlorobenzene	**0.011** (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/12/19 20:24	C9L0193	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/12/19 20:24	C9L0193	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Acetophenone	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Aniline	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Azobenzene	ND (0.019)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/12/19 20:24	C9L0193	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Carbazole	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Isophorone	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Phenol	ND (0.009)		8270D		1	12/12/19 20:24	C9L0193	CL91105
Pyridine	ND (0.093)		8270D		1	12/12/19 20:24	C9L0193	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*62 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*64 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*75 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*45 %*		*30-130*
Surrogate: 2-Fluorophenol	*67 %*		*15-110*
Surrogate: Nitrobenzene-d5	*71 %*		*30-130*
Surrogate: Phenol-d6	*73 %*		*15-110*
Surrogate: p-Terphenyl-d14	*29 %*	*S-*	*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/11/19 17:10

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	**0.00219** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Acenaphthene	**0.00029** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Benzo(a)anthracene	**0.00011** (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Benzo(a)pyrene	**0.00015** (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Benzo(b)fluoranthene	**0.00020** (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Benzo(k)fluoranthene	**0.00007** (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Chrysene	**0.00015** (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Fluoranthene	**0.00027** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Fluorene	**0.00033** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Indeno(1,2,3-cd)Pyrene	**0.00013** (0.00005)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Naphthalene	**0.00277** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Phenanthrene	**0.00053** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105
Pyrene	**0.00031** (0.00019)		8270D SIM		1	12/13/19 10:18	C9L0206	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-9
Date Sampled: 12/10/19 10:00
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-04
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**54.8** (5.00)		9060		10	CCP	12/12/19 18:36	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 18:33	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 18:33	10	10	CL91024
Barium	**0.124** (0.050)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 18:33	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Iron	**0.138** (0.100)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 18:33	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:13	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 18:33	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 18:33	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024
Zinc	ND (0.050)		6010C		1	KJK	12/11/19 12:05	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 20:48	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 20:48	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 20:48	C9L0167	CL91001

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*57 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*59 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*55 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 15:35		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 15:35		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*40 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*50 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*46 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.82** (0.20)		8100M		1	12/12/19 5:43	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*91 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/12/19 17:28	C9L0181	CL91143
1-Chlorohexane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
2-Butanone	ND (0.0100)		8260B		1	12/12/19 17:28	C9L0181	CL91143
2-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
2-Hexanone	ND (0.0100)		8260B		1	12/12/19 17:28	C9L0181	CL91143
4-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Acetone	ND (0.0100)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Benzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Bromobenzene	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Bromodichloromethane	ND (0.0006)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Bromoform	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Bromomethane	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Carbon Disulfide	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Chlorobenzene	**0.0017** (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Chloroethane	**0.0104** (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Chloroform	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Chloromethane	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Dibromochloromethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Dibromomethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Diethyl Ether	**0.0019** (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Di-isopropyl ether	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Ethylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Hexachloroethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Isopropylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Methylene Chloride	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Naphthalene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
n-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
n-Propylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
sec-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Styrene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
tert-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Tetrachloroethene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Toluene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Trichloroethene	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Vinyl Acetate	ND (0.0050)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Vinyl Chloride	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Xylene O	ND (0.0010)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Xylene P,M	ND (0.0020)		8260B		1	12/12/19 17:28	C9L0181	CL91143
Xylenes (Total)	ND (0.00200)		8260B		1	12/12/19 17:28		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*101 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*99 %*		*70-130*
Surrogate: Toluene-d8	*102 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/12/19 20:50	C9L0193	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/12/19 20:50	C9L0193	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Acetophenone	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Aniline	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Azobenzene	ND (0.019)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/12/19 20:50	C9L0193	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/11/19 17:10

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Carbazole	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Isophorone	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Phenol	ND (0.009)		8270D		1	12/12/19 20:50	C9L0193	CL91105
Pyridine	ND (0.093)		8270D		1	12/12/19 20:50	C9L0193	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*69 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*82 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*78 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*60 %*		*30-130*
Surrogate: 2-Fluorophenol	*68 %*		*15-110*
Surrogate: Nitrobenzene-d5	*79 %*		*30-130*
Surrogate: Phenol-d6	*73 %*		*15-110*
Surrogate: p-Terphenyl-d14	*34 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/11/19 17:10

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Chrysene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Fluoranthene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Naphthalene	**0.00034** (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105
Pyrene	ND (0.00019)		8270D SIM		1	12/13/19 11:06	C9L0206	CL91105

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-8
Date Sampled: 12/10/19 10:30
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-05
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**24.9** (5.00)		9060		10	CCP	12/12/19 19:14	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 18:38	10	10	CL91024
Arsenic	**0.006** (0.005)		6020A		1	BJV	12/11/19 18:38	10	10	CL91024
Barium	**0.075** (0.050)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 18:38	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Iron	**11.0** (0.100)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 18:38	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:15	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 18:38	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 18:38	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024
Zinc	**0.068** (0.050)		6010C		1	KJK	12/11/19 12:09	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 21:19	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 21:19	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 21:19	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*59 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*59 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 15:54		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 15:54		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*48 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*46 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.49** (0.20)		8100M		1	12/12/19 6:15	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*93 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/19 13:13	C9L0221	CL91348
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
2-Butanone	ND (0.0100)		8260B		1	12/13/19 13:13	C9L0221	CL91348
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
2-Hexanone	ND (0.0100)		8260B		1	12/13/19 13:13	C9L0221	CL91348
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Acetone	ND (0.0100)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Benzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Bromobenzene	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Bromoform	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Bromomethane	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Chlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Chloroethane	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Chloroform	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Chloromethane	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Dibromomethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Diethyl Ether	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Ethylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Hexachloroethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Methylene Chloride	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Naphthalene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Styrene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Tetrachloroethene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Toluene	**0.0011** (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Trichloroethene	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Vinyl Chloride	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Xylene O	ND (0.0010)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Xylene P,M	ND (0.0020)		8260B		1	12/13/19 13:13	C9L0221	CL91348
Xylenes (Total)	ND (0.00200)		8260B		1	12/13/19 13:13		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*93 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/13/19 17:01	C9L0226	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/13/19 17:01	C9L0226	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Acetophenone	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Aniline	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Azobenzene	ND (0.019)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/13/19 17:01	C9L0226	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Carbazole	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Isophorone	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Phenol	ND (0.009)		8270D		1	12/13/19 17:01	C9L0226	CL91105
Pyridine	ND (0.093)		8270D		1	12/13/19 17:01	C9L0226	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*55 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*63 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*60 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*51 %*		*30-130*
Surrogate: 2-Fluorophenol	*55 %*		*15-110*
Surrogate: Nitrobenzene-d5	*60 %*		*30-130*
Surrogate: Phenol-d6	*60 %*		*15-110*
Surrogate: p-Terphenyl-d14	*32 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/12/19 16:05

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Chrysene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Fluoranthene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105
Pyrene	ND (0.00019)		8270D SIM		1	12/16/19 20:00	C9L0252	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-7
Date Sampled: 12/10/19 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-06
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**16.5** (5.00)		9060		10	CCP	12/12/19 19:27	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 18:44	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 18:44	10	10	CL91024
Barium	ND (0.050)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 18:44	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Iron	**12.6** (0.100)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 18:44	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:18	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 18:44	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 18:44	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024
Zinc	ND (0.050)		6010C		1	KJK	12/11/19 12:12	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 21:50	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 21:50	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 21:50	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*55 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*56 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*65 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 16:13		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 16:13		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*30 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*40 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*31 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*41 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.26** (0.20)		8100M		1	12/12/19 6:47	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*94 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/19 13:39	C9L0221	CL91348
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
2-Butanone	ND (0.0100)		8260B		1	12/13/19 13:39	C9L0221	CL91348
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
2-Hexanone	ND (0.0100)		8260B		1	12/13/19 13:39	C9L0221	CL91348
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Acetone	ND (0.0100)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Benzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Bromobenzene	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Bromoform	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Bromomethane	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Chlorobenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Chloroethane	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Chloroform	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Chloromethane	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Dibromomethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Diethyl Ether	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Ethylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Hexachloroethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Methylene Chloride	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Naphthalene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Styrene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Tetrachloroethene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Toluene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Trichloroethene	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Vinyl Chloride	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Xylene O	ND (0.0010)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Xylene P,M	ND (0.0020)		8260B		1	12/13/19 13:39	C9L0221	CL91348
Xylenes (Total)	ND (0.00200)		8260B		1	12/13/19 13:39		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*100 %*		*70-130*
Surrogate: Toluene-d8	*96 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/13/19 17:28	C9L0226	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/13/19 17:28	C9L0226	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Acetophenone	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Aniline	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Azobenzene	ND (0.019)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/13/19 17:28	C9L0226	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Carbazole	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Isophorone	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Phenol	ND (0.009)		8270D		1	12/13/19 17:28	C9L0226	CL91105
Pyridine	ND (0.093)		8270D		1	12/13/19 17:28	C9L0226	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*72 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*72 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*80 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*61 %*		*30-130*
Surrogate: 2-Fluorophenol	*75 %*		*15-110*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: Phenol-d6	*81 %*		*15-110*
Surrogate: p-Terphenyl-d14	*38 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/12/19 16:05

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Benzo(a)anthracene	**0.00011** (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Benzo(a)pyrene	**0.00017** (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Benzo(b)fluoranthene	**0.00029** (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Benzo(k)fluoranthene	**0.00010** (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Chrysene	**0.00021** (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Fluoranthene	**0.00042** (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Indeno(1,2,3-cd)Pyrene	**0.00017** (0.00005)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Phenanthrene	**0.00019** (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105
Pyrene	**0.00033** (0.00019)		8270D SIM		1	12/16/19 20:47	C9L0252	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-2
Date Sampled: 12/10/19 12:30
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-07
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**18.1** (5.00)		9060		10	CCP	12/12/19 19:39	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 18:50	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 18:50	10	10	CL91024
Barium	**0.074** (0.050)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 18:50	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Iron	**10.9** (0.100)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 18:50	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:20	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 18:50	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 18:50	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024
Zinc	**0.060** (0.050)		6010C		1	KJK	12/11/19 12:16	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
4,4´-DDE	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
4,4´-DDT	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Aldrin	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
alpha-BHC	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
alpha-Chlordane	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
beta-BHC	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Chlordane (Total)	ND (0.000481)		8081B		1	12/11/19 22:20	C9L0167	CL91001
delta-BHC	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Dieldrin	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Endosulfan I	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Endosulfan II	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Endrin	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Endrin Aldehyde	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Endrin Ketone	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
gamma-Chlordane	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Heptachlor	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Hexachlorobenzene	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Methoxychlor	ND (0.000048)		8081B		1	12/11/19 22:20	C9L0167	CL91001
Toxaphene	ND (0.00125)		8081B		1	12/11/19 22:20	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*54 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*53 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*62 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 16:32		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 16:32		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*36 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*52 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.36** (0.19)		8100M		1	12/12/19 7:19	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*89 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/19 14:06	C9L0221	CL91348
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
2-Butanone	ND (0.0100)		8260B		1	12/13/19 14:06	C9L0221	CL91348
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
2-Hexanone	ND (0.0100)		8260B		1	12/13/19 14:06	C9L0221	CL91348
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Acetone	ND (0.0100)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Benzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Bromobenzene	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Bromoform	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Bromomethane	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Chlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Chloroethane	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Chloroform	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Chloromethane	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Dibromomethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Diethyl Ether	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Ethylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Hexachloroethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Methylene Chloride	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Naphthalene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Styrene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Tetrachloroethene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Toluene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Trichloroethene	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Vinyl Chloride	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Xylene O	ND (0.0010)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Xylene P,M	ND (0.0020)		8260B		1	12/13/19 14:06	C9L0221	CL91348
Xylenes (Total)	ND (0.00200)		8260B		1	12/13/19 14:06		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*96 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*96 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
1,2,4-Trichlorobenzene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
1,2-Dichlorobenzene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
1,3-Dichlorobenzene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
1,4-Dichlorobenzene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.050)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,4,5-Trichlorophenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,4,6-Trichlorophenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,4-Dichlorophenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,4-Dimethylphenol	ND (0.050)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,4-Dinitrophenol	ND (0.050)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,4-Dinitrotoluene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2,6-Dinitrotoluene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2-Chloronaphthalene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2-Chlorophenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2-Methylphenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2-Nitroaniline	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
2-Nitrophenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
3,3´-Dichlorobenzidine	ND (0.020)		8270D		1	12/13/19 17:54	C9L0226	CL91105
3+4-Methylphenol	ND (0.020)		8270D		1	12/13/19 17:54	C9L0226	CL91105
3-Nitroaniline	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.050)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4-Bromophenyl-phenylether	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4-Chloro-3-Methylphenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4-Chloroaniline	ND (0.020)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4-Nitroaniline	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
4-Nitrophenol	ND (0.050)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Acetophenone	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Aniline	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Azobenzene	ND (0.020)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Benzoic Acid	ND (0.100)		8270D		1	12/13/19 17:54	C9L0226	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
bis(2-Chloroethoxy)methane	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
bis(2-Chloroethyl)ether	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
bis(2-chloroisopropyl)Ether	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Butylbenzylphthalate	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Carbazole	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Dibenzofuran	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Diethylphthalate	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Dimethylphthalate	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Di-n-butylphthalate	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Di-n-octylphthalate	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Hexachlorobutadiene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Hexachlorocyclopentadiene	ND (0.025)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Isophorone	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Nitrobenzene	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
N-Nitrosodimethylamine	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
N-nitrosodiphenylamine	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Phenol	ND (0.010)		8270D		1	12/13/19 17:54	C9L0226	CL91105
Pyridine	ND (0.100)		8270D		1	12/13/19 17:54	C9L0226	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*52 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*50 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*62 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*40 %*		*30-130*
Surrogate: 2-Fluorophenol	*59 %*		*15-110*
Surrogate: Nitrobenzene-d5	*61 %*		*30-130*
Surrogate: Phenol-d6	*63 %*		*15-110*
Surrogate: p-Terphenyl-d14	*21 %*	*S-*	*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/12/19 16:05

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Acenaphthene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Acenaphthylene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Anthracene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Benzo(a)anthracene	**0.00012** (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Benzo(a)pyrene	**0.00015** (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Benzo(b)fluoranthene	**0.00022** (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Benzo(g,h,i)perylene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Benzo(k)fluoranthene	**0.00007** (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Chrysene	**0.00017** (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Fluoranthene	**0.00032** (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Fluorene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Hexachlorobenzene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Indeno(1,2,3-cd)Pyrene	**0.00013** (0.00005)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Naphthalene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Pentachlorophenol	ND (0.00090)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Phenanthrene	ND (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105
Pyrene	**0.00028** (0.00020)		8270D SIM		1	12/16/19 21:35	C9L0252	CL91105

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-3
Date Sampled: 12/10/19 13:15
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-08
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**29.7** (5.00)		9060		10	CCP	12/12/19 19:52	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 18:56	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 18:56	10	10	CL91024
Barium	ND (0.050)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 18:56	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Iron	**3.42** (0.100)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 18:56	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:22	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 18:56	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 18:56	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024
Zinc	**0.056** (0.050)		6010C		1	KJK	12/11/19 12:20	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 22:51	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 22:51	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 22:51	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*62 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*63 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*66 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 16:51		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 16:51		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*45 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*59 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*54 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.25** (0.19)		8100M		1	12/12/19 7:51	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*89 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/19 14:33	C9L0221	CL91348
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
2-Butanone	ND (0.0100)		8260B		1	12/13/19 14:33	C9L0221	CL91348
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
2-Hexanone	ND (0.0100)		8260B		1	12/13/19 14:33	C9L0221	CL91348
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Acetone	ND (0.0100)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Benzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Bromobenzene	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Bromoform	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Bromomethane	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Chlorobenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Chloroethane	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Chloroform	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Chloromethane	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Dibromomethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Diethyl Ether	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Ethylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Hexachloroethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Methylene Chloride	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Naphthalene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Styrene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Tetrachloroethene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Toluene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Trichloroethene	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Vinyl Chloride	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Xylene O	ND (0.0010)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Xylene P,M	ND (0.0020)		8260B		1	12/13/19 14:33	C9L0221	CL91348
Xylenes (Total)	ND (0.00200)		8260B		1	12/13/19 14:33		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 970
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
1,2,4-Trichlorobenzene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
1,2-Dichlorobenzene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
1,3-Dichlorobenzene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
1,4-Dichlorobenzene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.052)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,4,5-Trichlorophenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,4,6-Trichlorophenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,4-Dichlorophenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,4-Dimethylphenol	ND (0.052)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,4-Dinitrophenol	ND (0.052)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,4-Dinitrotoluene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2,6-Dinitrotoluene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2-Chloronaphthalene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2-Chlorophenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2-Methylphenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2-Nitroaniline	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
2-Nitrophenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
3,3´-Dichlorobenzidine	ND (0.021)		8270D		1	12/16/19 15:56	C9L0254	CL91105
3+4-Methylphenol	ND (0.021)		8270D		1	12/16/19 15:56	C9L0254	CL91105
3-Nitroaniline	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.052)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4-Bromophenyl-phenylether	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4-Chloro-3-Methylphenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4-Chloroaniline	ND (0.021)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4-Nitroaniline	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
4-Nitrophenol	ND (0.052)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Acetophenone	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Aniline	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Azobenzene	ND (0.021)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Benzoic Acid	ND (0.103)		8270D		1	12/16/19 15:56	C9L0254	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 970
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
bis(2-Chloroethoxy)methane	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
bis(2-Chloroethyl)ether	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
bis(2-chloroisopropyl)Ether	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Butylbenzylphthalate	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Carbazole	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Dibenzofuran	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Diethylphthalate	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Dimethylphthalate	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Di-n-butylphthalate	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Di-n-octylphthalate	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Hexachlorobutadiene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Hexachlorocyclopentadiene	ND (0.026)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Isophorone	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Nitrobenzene	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
N-Nitrosodimethylamine	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
N-nitrosodiphenylamine	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Phenol	ND (0.010)		8270D		1	12/16/19 15:56	C9L0254	CL91105
Pyridine	ND (0.103)		8270D		1	12/16/19 15:56	C9L0254	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*60 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*60 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*75 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*42 %*		*30-130*
Surrogate: 2-Fluorophenol	*67 %*		*15-110*
Surrogate: Nitrobenzene-d5	*82 %*		*30-130*
Surrogate: Phenol-d6	*87 %*		*15-110*
Surrogate: p-Terphenyl-d14	*27 %*	*S-*	*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A
Initial Volume: 970
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/12/19 16:05

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Acenaphthene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Acenaphthylene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Anthracene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Benzo(a)anthracene	**0.00044** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Benzo(a)pyrene	**0.00071** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Benzo(b)fluoranthene	**0.00116** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Benzo(g,h,i)perylene	**0.00066** (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Benzo(k)fluoranthene	**0.00039** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Chrysene	**0.00081** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Dibenzo(a,h)Anthracene	**0.00014** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Fluoranthene	**0.00160** (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Fluorene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Hexachlorobenzene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Indeno(1,2,3-cd)Pyrene	**0.00070** (0.00005)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Naphthalene	ND (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Pentachlorophenol	ND (0.00093)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Phenanthrene	**0.00074** (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105
Pyrene	**0.00132** (0.00021)		8270D SIM		1	12/16/19 23:58	C9L0252	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-4
Date Sampled: 12/10/19 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-09
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**18.6** (5.00)		9060		10	CCP	12/12/19 20:04	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 19:02	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 19:02	10	10	CL91024
Barium	**0.121** (0.050)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Cadmium	**0.0040** (0.0010)		6020A		1	BJV	12/11/19 19:02	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Iron	**0.167** (0.100)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 19:02	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:24	20	40	CL91136
Nickel	**0.065** (0.050)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 19:02	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 19:02	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024
Zinc	**1.31** (0.050)		6010C		1	KJK	12/11/19 12:36	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 23:22	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 23:22	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 23:22	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 17:10		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 17:10		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*47 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*44 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*49 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.32** (0.19)		8100M		1	12/12/19 8:23	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*85 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,1-Dichloroethane	**0.0015** (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/19 15:00	C9L0221	CL91348
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
2-Butanone	ND (0.0100)		8260B		1	12/13/19 15:00	C9L0221	CL91348
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
2-Hexanone	ND (0.0100)		8260B		1	12/13/19 15:00	C9L0221	CL91348
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Acetone	ND (0.0100)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Benzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Bromobenzene	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Bromoform	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Bromomethane	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Chlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Chloroethane	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Chloroform	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Chloromethane	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Dibromomethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Diethyl Ether	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Ethylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Hexachloroethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Methylene Chloride	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Naphthalene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Styrene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Tetrachloroethene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Toluene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Trichloroethene	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Vinyl Chloride	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Xylene O	ND (0.0010)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Xylene P,M	ND (0.0020)		8260B		1	12/13/19 15:00	C9L0221	CL91348
Xylenes (Total)	ND (0.00200)		8260B		1	12/13/19 15:00		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*97 %*		*70-130*
Surrogate: Dibromofluoromethane	*95 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/13/19 18:47	C9L0226	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/13/19 18:47	C9L0226	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Acetophenone	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Aniline	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Azobenzene	ND (0.019)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/13/19 18:47	C9L0226	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Carbazole	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Dimethylphthalate	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Isophorone	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Phenol	ND (0.009)		8270D		1	12/13/19 18:47	C9L0226	CL91105
Pyridine	ND (0.093)		8270D		1	12/13/19 18:47	C9L0226	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*86 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*103 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*94 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*87 %*		*30-130*
Surrogate: 2-Fluorophenol	*82 %*		*15-110*
Surrogate: Nitrobenzene-d5	*96 %*		*30-130*
Surrogate: Phenol-d6	*96 %*		*15-110*
Surrogate: p-Terphenyl-d14	*63 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/12/19 16:05

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Benzo(a)anthracene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Benzo(a)pyrene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Benzo(b)fluoranthene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Benzo(k)fluoranthene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Chrysene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Fluoranthene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Indeno(1,2,3-cd)Pyrene	ND (0.00005)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105
Pyrene	ND (0.00019)		8270D SIM		1	12/16/19 22:23	C9L0252	CL91105

%Recovery	Qualifier	Limits

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-6
Date Sampled: 12/10/19 14:30
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-10
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**10.5** (5.00)		9060		10	CCP	12/12/19 20:42	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L

Extraction Method: 200.7/6010BNoDigest

Dissolved Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.001)		6020A		1	BJV	12/11/19 19:08	10	10	CL91024
Arsenic	ND (0.005)		6020A		1	BJV	12/11/19 19:08	10	10	CL91024
Barium	**0.091** (0.050)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Beryllium	ND (0.0010)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Cadmium	ND (0.0010)		6020A		1	BJV	12/11/19 19:08	10	10	CL91024
Chromium	ND (0.020)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Cobalt	ND (0.020)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Copper	ND (0.020)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Iron	**0.142** (0.100)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Lead	ND (0.001)		6020A		1	BJV	12/11/19 19:08	10	10	CL91024
Mercury	ND (0.00020)		7470A		1	MKS	12/16/19 11:27	20	40	CL91136
Nickel	ND (0.050)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Selenium	ND (0.005)		6020A		1	BJV	12/11/19 19:08	10	10	CL91024
Silver	ND (0.010)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Thallium	ND (0.0002)		6020A		1	BJV	12/11/19 19:08	10	10	CL91024
Vanadium	ND (0.020)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024
Zinc	ND (0.050)		6010C		1	KJK	12/11/19 12:40	10	10	CL91024

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 5
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: DMC
Prepared: 12/11/19 9:48

8081B Organochlorine Pesticides

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
4,4´-DDD	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
4,4´-DDE	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
4,4´-DDT	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Aldrin	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
alpha-BHC	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
alpha-Chlordane	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
beta-BHC	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Chlordane (Total)	ND (0.000467)		8081B		1	12/11/19 23:52	C9L0167	CL91001
delta-BHC	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Dieldrin	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Endosulfan I	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Endosulfan II	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Endosulfan Sulfate	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Endrin	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Endrin Aldehyde	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Endrin Ketone	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
gamma-BHC (Lindane)	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
gamma-Chlordane	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Heptachlor	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Heptachlor Epoxide	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Hexachlorobenzene	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Methoxychlor	ND (0.000047)		8081B		1	12/11/19 23:52	C9L0167	CL91001
Toxaphene	ND (0.00121)		8081B		1	12/11/19 23:52	C9L0167	CL91001

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*66 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*72 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: ug/L
Analyst: MJV
Prepared: 12/11/19 11:28

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1221	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1232	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1242	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1248	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1254	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1260	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1262	ND (0.09)		8082A		1	12/11/19 17:29		CL91103
Aroclor 1268	ND (0.09)		8082A		1	12/11/19 17:29		CL91103

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*47 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*57 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*44 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*50 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 980
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: CAD
Prepared: 12/11/19 14:11

8100M Total Petroleum Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Total Petroleum Hydrocarbons	**0.31** (0.20)		8100M		1	12/12/19 8:55	C9L0172	CL91104

	%Recovery	Qualifier	Limits
Surrogate: O-Terphenyl	*83 %*		*40-140*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/13/19 15:26	C9L0221	CL91348
1-Chlorohexane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
2-Butanone	ND (0.0100)		8260B		1	12/13/19 15:26	C9L0221	CL91348
2-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
2-Hexanone	ND (0.0100)		8260B		1	12/13/19 15:26	C9L0221	CL91348
4-Chlorotoluene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Acetone	ND (0.0100)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Benzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Bromobenzene	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Bromodichloromethane	ND (0.0006)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Bromoform	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Bromomethane	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Carbon Disulfide	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Chlorobenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Chloroethane	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Chloroform	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Chloromethane	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Dibromochloromethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Dibromomethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Diethyl Ether	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Di-isopropyl ether	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Ethylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Hexachloroethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Isopropylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Methylene Chloride	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Naphthalene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
n-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
n-Propylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
sec-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Styrene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
tert-Butylbenzene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Tetrachloroethene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Toluene	**0.0022** (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Trichloroethene	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Vinyl Acetate	ND (0.0050)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Vinyl Chloride	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Xylene O	ND (0.0010)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Xylene P,M	ND (0.0020)		8260B		1	12/13/19 15:26	C9L0221	CL91348
Xylenes (Total)	ND (0.00200)		8260B		1	12/13/19 15:26		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*98 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*101 %*		*70-130*
Surrogate: Dibromofluoromethane	*96 %*		*70-130*
Surrogate: Toluene-d8	*98 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1-Biphenyl	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
1,2,4-Trichlorobenzene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
1,2-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
1,3-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
1,4-Dichlorobenzene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,3,4,6-Tetrachlorophenol	ND (0.047)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,4,5-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,4,6-Trichlorophenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,4-Dichlorophenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,4-Dimethylphenol	ND (0.047)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,4-Dinitrophenol	ND (0.047)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,4-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2,6-Dinitrotoluene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2-Chloronaphthalene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2-Chlorophenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2-Methylphenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2-Nitroaniline	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
2-Nitrophenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
3,3´-Dichlorobenzidine	ND (0.019)		8270D		1	12/13/19 19:13	C9L0226	CL91105
3+4-Methylphenol	ND (0.019)		8270D		1	12/13/19 19:13	C9L0226	CL91105
3-Nitroaniline	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4,6-Dinitro-2-Methylphenol	ND (0.047)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4-Bromophenyl-phenylether	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4-Chloro-3-Methylphenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4-Chloroaniline	ND (0.019)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4-Chloro-phenyl-phenyl ether	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4-Nitroaniline	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
4-Nitrophenol	ND (0.047)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Acetophenone	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Aniline	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Azobenzene	ND (0.019)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Benzoic Acid	ND (0.093)		8270D		1	12/13/19 19:13	C9L0226	CL91105

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: TJ
Prepared: 12/12/19 16:05

8270D Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Benzyl Alcohol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
bis(2-Chloroethoxy)methane	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
bis(2-Chloroethyl)ether	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
bis(2-chloroisopropyl)Ether	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
bis(2-Ethylhexyl)phthalate	ND (0.006)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Butylbenzylphthalate	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Carbazole	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Dibenzofuran	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Diethylphthalate	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Dimethylphthalate	**0.009** (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Di-n-butylphthalate	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Di-n-octylphthalate	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Hexachlorobutadiene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Hexachlorocyclopentadiene	ND (0.023)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Hexachloroethane	ND (0.005)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Isophorone	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Nitrobenzene	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
N-Nitrosodimethylamine	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
N-Nitroso-Di-n-Propylamine	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
N-nitrosodiphenylamine	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Phenol	ND (0.009)		8270D		1	12/13/19 19:13	C9L0226	CL91105
Pyridine	ND (0.093)		8270D		1	12/13/19 19:13	C9L0226	CL91105

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*76 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*66 %*		*15-110*
Surrogate: 2-Chlorophenol-d4	*81 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*59 %*		*30-130*
Surrogate: 2-Fluorophenol	*69 %*		*15-110*
Surrogate: Nitrobenzene-d5	*88 %*		*30-130*
Surrogate: Phenol-d6	*84 %*		*15-110*
Surrogate: p-Terphenyl-d14	*35 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3520C

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water
Units: mg/L
Analyst: VSC
Prepared: 12/12/19 16:05

8270D(SIM) Semi-Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
2-Methylnaphthalene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Acenaphthene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Acenaphthylene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Anthracene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Benzo(a)anthracene	**0.00009** (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Benzo(a)pyrene	**0.00013** (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Benzo(b)fluoranthene	**0.00020** (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Benzo(g,h,i)perylene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Benzo(k)fluoranthene	**0.00005** (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Chrysene	**0.00014** (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Dibenzo(a,h)Anthracene	ND (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Fluoranthene	**0.00025** (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Fluorene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Hexachlorobenzene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Indeno(1,2,3-cd)Pyrene	**0.00011** (0.00005)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Naphthalene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Pentachlorophenol	ND (0.00084)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Phenanthrene	ND (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105
Pyrene	**0.00020** (0.00019)		8270D SIM		1	12/16/19 23:10	C9L0252	CL91105

%Recovery *Qualifier* *Limits*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: SSW-5
Date Sampled: 12/10/19 14:50
Percent Solids: N/A

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-11
Sample Matrix: Surface Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Total Organic Carbon (Average)	**23.1** (5.00)		9060		10	CCP	12/12/19 20:54	mg/L	[CALC]

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 12/10/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-12
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,1-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,1-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,1-Dichloropropene	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2-Dibromoethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2-Dichloroethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,3-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1,4-Dioxane - Screen	ND (0.500)		8260B		1	12/12/19 12:19	C9L0181	CL91143
1-Chlorohexane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
2,2-Dichloropropane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
2-Butanone	ND (0.0100)		8260B		1	12/12/19 12:19	C9L0181	CL91143
2-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
2-Hexanone	ND (0.0100)		8260B		1	12/12/19 12:19	C9L0181	CL91143
4-Chlorotoluene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
4-Isopropyltoluene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Acetone	ND (0.0100)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Benzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Bromobenzene	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 12/10/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-12
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Bromodichloromethane	ND (0.0006)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Bromoform	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Bromomethane	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Carbon Disulfide	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Carbon Tetrachloride	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Chlorobenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Chloroethane	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Chloroform	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Chloromethane	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Dibromochloromethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Dibromomethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Dichlorodifluoromethane	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Diethyl Ether	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Di-isopropyl ether	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Ethylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Hexachlorobutadiene	ND (0.0006)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Hexachloroethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Isopropylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Methylene Chloride	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Naphthalene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
n-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
n-Propylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
sec-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Styrene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
tert-Butylbenzene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Tetrachloroethene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill
Client Sample ID: Trip Blank
Date Sampled: 12/10/19 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 19L0295
ESS Laboratory Sample ID: 19L0295-12
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Toluene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Trichloroethene	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Trichlorofluoromethane	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Vinyl Acetate	ND (0.0050)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Vinyl Chloride	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Xylene O	ND (0.0010)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Xylene P,M	ND (0.0020)		8260B		1	12/12/19 12:19	C9L0181	CL91143
Xylenes (Total)	ND (0.00200)		8260B		1	12/12/19 12:19		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*102 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*99 %*		*70-130*
Surrogate: Dibromofluoromethane	*98 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CL91024 - 200.7/6010BNoDigest										
Blank										
Barium	ND	0.050	mg/L							
Beryllium	ND	0.0010	mg/L							
Chromium	ND	0.020	mg/L							
Cobalt	ND	0.020	mg/L							
Copper	ND	0.020	mg/L							
Iron	ND	0.100	mg/L							
Nickel	ND	0.050	mg/L							
Silver	ND	0.010	mg/L							
Vanadium	ND	0.020	mg/L							
Zinc	ND	0.050	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Arsenic	ND	0.005	mg/L							
Cadmium	ND	0.0010	mg/L							
Lead	ND	0.001	mg/L							
Selenium	ND	0.005	mg/L							
Thallium	ND	0.0002	mg/L							
Blank										
Antimony	ND	0.001	mg/L							
Arsenic	ND	0.005	mg/L							
Cadmium	ND	0.0010	mg/L							
Lead	ND	0.001	mg/L							
Selenium	ND	0.005	mg/L							
Thallium	ND	0.0002	mg/L							
LCS										
Barium	0.502		mg/L	0.5000		100	80-120			
Beryllium	0.0494		mg/L	0.05000		99	80-120			
Chromium	0.502		mg/L	0.5000		100	80-120			
Cobalt	0.508		mg/L	0.5000		102	80-120			
Copper	0.507		mg/L	0.5000		101	80-120			
Iron	2.50		mg/L	2.500		100	80-120			
Nickel	0.510		mg/L	0.5000		102	80-120			
Silver	0.254		mg/L	0.2500		102	80-120			
Vanadium	0.502		mg/L	0.5000		100	80-120			
Zinc	0.502		mg/L	0.5000		100	80-120			
LCS										
Antimony	19.3		ug/L	20.04		96	80-120			
Arsenic	19.8		ug/L	20.00		99	80-120			
Cadmium	21.1		ug/L	20.10		105	80-120			
Lead	20.6		ug/L	19.98		103	80-120			
Selenium	21.1		ug/L	19.98		106	80-120			
Thallium	20.8		ug/L	20.02		104	80-120			
Batch CL91136 - 245.1/7470A										

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Dissolved Metals										
Batch CL91136 - 245.1/7470A										
Blank										
Mercury	ND	0.00020	mg/L							
LCS										
Mercury	0.00604	0.00020	mg/L	0.006042		100	80-120			
LCS Dup										
Mercury	0.00602	0.00020	mg/L	0.006042		100	80-120	0.4	20	
8081B Organochlorine Pesticides										
Batch CL91001 - 3510C										
Blank										
4,4´-DDD	ND	0.000050	mg/L							
4,4´-DDD [2C]	ND	0.000050	mg/L							
4,4´-DDE	ND	0.000050	mg/L							
4,4´-DDE [2C]	ND	0.000050	mg/L							
4,4´-DDT	ND	0.000050	mg/L							
4,4´-DDT [2C]	ND	0.000050	mg/L							
Aldrin	ND	0.000050	mg/L							
Aldrin [2C]	ND	0.000050	mg/L							
alpha-BHC	ND	0.000050	mg/L							
alpha-BHC [2C]	ND	0.000050	mg/L							
alpha-Chlordane	ND	0.000050	mg/L							
alpha-Chlordane [2C]	ND	0.000050	mg/L							
beta-BHC	ND	0.000050	mg/L							
beta-BHC [2C]	ND	0.000050	mg/L							
Chlordane (Total)	ND	0.000500	mg/L							
Chlordane (Total) [2C]	ND	0.000500	mg/L							
delta-BHC	ND	0.000050	mg/L							
delta-BHC [2C]	ND	0.000050	mg/L							
Dieldrin	ND	0.000050	mg/L							
Dieldrin [2C]	ND	0.000050	mg/L							
Endosulfan I	ND	0.000050	mg/L							
Endosulfan I [2C]	ND	0.000050	mg/L							
Endosulfan II	ND	0.000050	mg/L							
Endosulfan II [2C]	ND	0.000050	mg/L							
Endosulfan Sulfate	ND	0.000050	mg/L							
Endosulfan Sulfate [2C]	ND	0.000050	mg/L							
Endrin	ND	0.000050	mg/L							
Endrin [2C]	ND	0.000050	mg/L							
Endrin Aldehyde	ND	0.000050	mg/L							
Endrin Aldehyde [2C]	ND	0.000050	mg/L							
Endrin Ketone	ND	0.000050	mg/L							
Endrin Ketone [2C]	ND	0.000050	mg/L							
gamma-BHC (Lindane)	ND	0.000050	mg/L							
gamma-BHC (Lindane) [2C]	ND	0.000050	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL91001 - 3510C										
gamma-Chlordane	ND	0.000050	mg/L							
gamma-Chlordane [2C]	ND	0.000050	mg/L							
Heptachlor	ND	0.000050	mg/L							
Heptachlor [2C]	ND	0.000050	mg/L							
Heptachlor Epoxide	ND	0.000050	mg/L							
Heptachlor Epoxide [2C]	ND	0.000050	mg/L							
Hexachlorobenzene	ND	0.000050	mg/L							
Hexachlorobenzene [2C]	ND	0.000050	mg/L							
Methoxychlor	ND	0.000050	mg/L							
Methoxychlor [2C]	ND	0.000050	mg/L							
Toxaphene	ND	0.00130	mg/L							
Toxaphene [2C]	ND	0.00130	mg/L							
Surrogate: Decachlorobiphenyl	*0.000190*		mg/L	*0.0002500*		*76*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000193*		mg/L	*0.0002500*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000215*		mg/L	*0.0002500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000218*		mg/L	*0.0002500*		*87*	*30-150*			
LCS										
4,4´-DDD	0.000248	0.000050	mg/L	0.0002500		99	40-140			
4,4´-DDD [2C]	0.000245	0.000050	mg/L	0.0002500		98	40-140			
4,4´-DDE	0.000222	0.000050	mg/L	0.0002500		89	40-140			
4,4´-DDE [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140			
4,4´-DDT	0.000241	0.000050	mg/L	0.0002500		96	40-140			
4,4´-DDT [2C]	0.000249	0.000050	mg/L	0.0002500		100	40-140			
Aldrin	0.000180	0.000050	mg/L	0.0002500		72	40-140			
Aldrin [2C]	0.000185	0.000050	mg/L	0.0002500		74	40-140			
alpha-BHC	0.000236	0.000050	mg/L	0.0002500		95	40-140			
alpha-BHC [2C]	0.000241	0.000050	mg/L	0.0002500		96	40-140			
alpha-Chlordane	0.000213	0.000050	mg/L	0.0002500		85	40-140			
alpha-Chlordane [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140			
beta-BHC	0.000236	0.000050	mg/L	0.0002500		94	40-140			
beta-BHC [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140			
delta-BHC	0.000197	0.000050	mg/L	0.0002500		79	40-140			
delta-BHC [2C]	0.000195	0.000050	mg/L	0.0002500		78	40-140			
Dieldrin	0.000245	0.000050	mg/L	0.0002500		98	40-140			
Dieldrin [2C]	0.000258	0.000050	mg/L	0.0002500		103	40-140			
Endosulfan I	0.000226	0.000050	mg/L	0.0002500		90	40-140			
Endosulfan I [2C]	0.000234	0.000050	mg/L	0.0002500		94	40-140			
Endosulfan II	0.000234	0.000050	mg/L	0.0002500		93	40-140			
Endosulfan II [2C]	0.000250	0.000050	mg/L	0.0002500		100	40-140			
Endosulfan Sulfate	0.000234	0.000050	mg/L	0.0002500		94	40-140			
Endosulfan Sulfate [2C]	0.000244	0.000050	mg/L	0.0002500		97	40-140			
Endrin	0.000241	0.000050	mg/L	0.0002500		97	40-140			
Endrin [2C]	0.000252	0.000050	mg/L	0.0002500		101	40-140			
Endrin Aldehyde	0.000229	0.000050	mg/L	0.0002500		92	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL91001 - 3510C										
Endrin Aldehyde [2C]	0.000268	0.000050	mg/L	0.0002500		107	40-140			
Endrin Ketone	0.000250	0.000050	mg/L	0.0002500		100	40-140			
Endrin Ketone [2C]	0.000260	0.000050	mg/L	0.0002500		104	40-140			
gamma-BHC (Lindane)	0.000237	0.000050	mg/L	0.0002500		95	40-140			
gamma-BHC (Lindane) [2C]	0.000238	0.000050	mg/L	0.0002500		95	40-140			
gamma-Chlordane	0.000210	0.000050	mg/L	0.0002500		84	40-140			
gamma-Chlordane [2C]	0.000217	0.000050	mg/L	0.0002500		87	40-140			
Heptachlor	0.000185	0.000050	mg/L	0.0002500		74	40-140			
Heptachlor [2C]	0.000190	0.000050	mg/L	0.0002500		76	40-140			
Heptachlor Epoxide	0.000246	0.000050	mg/L	0.0002500		99	40-140			
Heptachlor Epoxide [2C]	0.000251	0.000050	mg/L	0.0002500		101	40-140			
Hexachlorobenzene	0.000206	0.000050	mg/L	0.0002500		82	40-140			
Hexachlorobenzene [2C]	0.000200	0.000050	mg/L	0.0002500		80	40-140			
Methoxychlor	0.000224	0.000050	mg/L	0.0002500		89	40-140			
Methoxychlor [2C]	0.000233	0.000050	mg/L	0.0002500		93	40-140			
Surrogate: Decachlorobiphenyl	*0.000182*		mg/L	*0.0002500*		*73*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000185*		mg/L	*0.0002500*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000188*		mg/L	*0.0002500*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000191*		mg/L	*0.0002500*		*77*	*30-150*			
LCS Dup										
4,4´-DDD	0.000222	0.000050	mg/L	0.0002500		89	40-140	11	20	
4,4´-DDD [2C]	0.000221	0.000050	mg/L	0.0002500		88	40-140	10	20	
4,4´-DDE	0.000207	0.000050	mg/L	0.0002500		83	40-140	7	20	
4,4´-DDE [2C]	0.000222	0.000050	mg/L	0.0002500		89	40-140	6	20	
4,4´-DDT	0.000215	0.000050	mg/L	0.0002500		86	40-140	11	20	
4,4´-DDT [2C]	0.000225	0.000050	mg/L	0.0002500		90	40-140	10	20	
Aldrin	0.000167	0.000050	mg/L	0.0002500		67	40-140	7	20	
Aldrin [2C]	0.000172	0.000050	mg/L	0.0002500		69	40-140	7	20	
alpha-BHC	0.000218	0.000050	mg/L	0.0002500		87	40-140	8	20	
alpha-BHC [2C]	0.000223	0.000050	mg/L	0.0002500		89	40-140	7	20	
alpha-Chlordane	0.000204	0.000050	mg/L	0.0002500		82	40-140	4	20	
alpha-Chlordane [2C]	0.000215	0.000050	mg/L	0.0002500		86	40-140	4	20	
beta-BHC	0.000220	0.000050	mg/L	0.0002500		88	40-140	7	20	
beta-BHC [2C]	0.000218	0.000050	mg/L	0.0002500		87	40-140	8	20	
delta-BHC	0.000180	0.000050	mg/L	0.0002500		72	40-140	9	20	
delta-BHC [2C]	0.000180	0.000050	mg/L	0.0002500		72	40-140	8	20	
Dieldrin	0.000231	0.000050	mg/L	0.0002500		92	40-140	6	20	
Dieldrin [2C]	0.000244	0.000050	mg/L	0.0002500		98	40-140	6	20	
Endosulfan I	0.000212	0.000050	mg/L	0.0002500		85	40-140	6	20	
Endosulfan I [2C]	0.000220	0.000050	mg/L	0.0002500		88	40-140	6	20	
Endosulfan II	0.000215	0.000050	mg/L	0.0002500		86	40-140	8	20	
Endosulfan II [2C]	0.000230	0.000050	mg/L	0.0002500		92	40-140	8	20	
Endosulfan Sulfate	0.000210	0.000050	mg/L	0.0002500		84	40-140	11	20	
Endosulfan Sulfate [2C]	0.000220	0.000050	mg/L	0.0002500		88	40-140	10	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CL91001 - 3510C										
Endrin	0.000226	0.000050	mg/L	0.0002500		90	40-140	6	20	
Endrin [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	6	20	
Endrin Aldehyde	0.000210	0.000050	mg/L	0.0002500		84	40-140	8	20	
Endrin Aldehyde [2C]	0.000235	0.000050	mg/L	0.0002500		94	40-140	13	20	
Endrin Ketone	0.000222	0.000050	mg/L	0.0002500		89	40-140	12	20	
Endrin Ketone [2C]	0.000231	0.000050	mg/L	0.0002500		93	40-140	12	20	
gamma-BHC (Lindane)	0.000220	0.000050	mg/L	0.0002500		88	40-140	7	20	
gamma-BHC (Lindane) [2C]	0.000221	0.000050	mg/L	0.0002500		89	40-140	7	20	
gamma-Chlordane	0.000204	0.000050	mg/L	0.0002500		82	40-140	3	20	
gamma-Chlordane [2C]	0.000211	0.000050	mg/L	0.0002500		84	40-140	3	20	
Heptachlor	0.000171	0.000050	mg/L	0.0002500		69	40-140	8	20	
Heptachlor [2C]	0.000177	0.000050	mg/L	0.0002500		71	40-140	8	20	
Heptachlor Epoxide	0.000232	0.000050	mg/L	0.0002500		93	40-140	6	20	
Heptachlor Epoxide [2C]	0.000237	0.000050	mg/L	0.0002500		95	40-140	6	20	
Hexachlorobenzene	0.000187	0.000050	mg/L	0.0002500		75	40-140	10	20	
Hexachlorobenzene [2C]	0.000182	0.000050	mg/L	0.0002500		73	40-140	9	20	
Methoxychlor	0.000199	0.000050	mg/L	0.0002500		80	40-140	12	20	
Methoxychlor [2C]	0.000207	0.000050	mg/L	0.0002500		83	40-140	12	20	
Surrogate: Decachlorobiphenyl	*0.000161*		mg/L	*0.0002500*		*65*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.000164*		mg/L	*0.0002500*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.000171*		mg/L	*0.0002500*		*69*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.000175*		mg/L	*0.0002500*		*70*	*30-150*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CL91103 - 3510C										
Blank										
Aroclor 1016	ND	0.05	ug/L							
Aroclor 1016 [2C]	ND	0.05	ug/L							
Aroclor 1221	ND	0.05	ug/L							
Aroclor 1221 [2C]	ND	0.05	ug/L							
Aroclor 1232	ND	0.05	ug/L							
Aroclor 1232 [2C]	ND	0.05	ug/L							
Aroclor 1242	ND	0.05	ug/L							
Aroclor 1242 [2C]	ND	0.05	ug/L							
Aroclor 1248	ND	0.05	ug/L							
Aroclor 1248 [2C]	ND	0.05	ug/L							
Aroclor 1254	ND	0.05	ug/L							
Aroclor 1254 [2C]	ND	0.05	ug/L							
Aroclor 1260	ND	0.05	ug/L							
Aroclor 1260 [2C]	ND	0.05	ug/L							
Aroclor 1262	ND	0.05	ug/L							
Aroclor 1262 [2C]	ND	0.05	ug/L							
Aroclor 1268	ND	0.05	ug/L							
Aroclor 1268 [2C]	ND	0.05	ug/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CL91103 - 3510C										
Surrogate: Decachlorobiphenyl	*0.0267*		ug/L	*0.05000*		*53*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0301*		ug/L	*0.05000*		*60*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0203*		ug/L	*0.05000*		*41*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0255*		ug/L	*0.05000*		*51*	*30-150*			
LCS										
Aroclor 1016	0.71	0.10	ug/L	1.000		71	40-140			
Aroclor 1016 [2C]	0.78	0.10	ug/L	1.000		78	40-140			
Aroclor 1260	0.65	0.10	ug/L	1.000		65	40-140			
Aroclor 1260 [2C]	0.77	0.10	ug/L	1.000		77	40-140			
Surrogate: Decachlorobiphenyl	*0.0308*		ug/L	*0.05000*		*62*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0348*		ug/L	*0.05000*		*70*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0245*		ug/L	*0.05000*		*49*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0262*		ug/L	*0.05000*		*52*	*30-150*			
LCS Dup										
Aroclor 1016	0.82	0.10	ug/L	1.000		82	40-140	14	20	
Aroclor 1016 [2C]	0.90	0.10	ug/L	1.000		90	40-140	14	20	
Aroclor 1260	0.74	0.10	ug/L	1.000		74	40-140	13	20	
Aroclor 1260 [2C]	0.88	0.10	ug/L	1.000		88	40-140	13	20	
Surrogate: Decachlorobiphenyl	*0.0349*		ug/L	*0.05000*		*70*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0387*		ug/L	*0.05000*		*77*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0277*		ug/L	*0.05000*		*55*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0295*		ug/L	*0.05000*		*59*	*30-150*			
8100M Total Petroleum Hydrocarbons										
Batch CL91104 - 3510C										
Blank										
Decane (C10)	ND	0.005	mg/L							
Docosane (C22)	ND	0.005	mg/L							
Dodecane (C12)	ND	0.005	mg/L							
Eicosane (C20)	ND	0.005	mg/L							
Hexacosane (C26)	ND	0.005	mg/L							
Hexadecane (C16)	ND	0.005	mg/L							
Nonadecane (C19)	ND	0.005	mg/L							
Nonane (C9)	ND	0.005	mg/L							
Octacosane (C28)	ND	0.005	mg/L							
Octadecane (C18)	ND	0.005	mg/L							
Tetracosane (C24)	ND	0.005	mg/L							
Tetradecane (C14)	ND	0.005	mg/L							
Total Petroleum Hydrocarbons	ND	0.20	mg/L							
Triacontane (C30)	ND	0.005	mg/L							
Surrogate: O-Terphenyl	*0.102*		mg/L	*0.1000*		*102*	*40-140*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CL91104 - 3510C										
LCS										
Decane (C10)	0.042	0.005	mg/L	0.05000		85	40-140			
Docosane (C22)	0.051	0.005	mg/L	0.05000		102	40-140			
Dodecane (C12)	0.046	0.005	mg/L	0.05000		93	40-140			
Eicosane (C20)	0.051	0.005	mg/L	0.05000		101	40-140			
Hexacosane (C26)	0.051	0.005	mg/L	0.05000		101	40-140			
Hexadecane (C16)	0.049	0.005	mg/L	0.05000		98	40-140			
Nonadecane (C19)	0.056	0.005	mg/L	0.05000		112	40-140			
Nonane (C9)	0.035	0.005	mg/L	0.05000		71	30-140			
Octacosane (C28)	0.051	0.005	mg/L	0.05000		102	40-140			
Octadecane (C18)	0.050	0.005	mg/L	0.05000		100	40-140			
Tetracosane (C24)	0.051	0.005	mg/L	0.05000		102	40-140			
Tetradecane (C14)	0.049	0.005	mg/L	0.05000		98	40-140			
Total Petroleum Hydrocarbons	0.691	0.20	mg/L	0.7000		99	40-140			
Triacontane (C30)	0.052	0.005	mg/L	0.05000		103	40-140			
Surrogate: O-Terphenyl	*0.0968*		mg/L	*0.1000*		*97*	*40-140*			
LCS										
Decane (C10)	0.007	0.005	mg/L	0.01000		69	40-140			
Docosane (C22)	0.011	0.005	mg/L	0.01000		115	40-140			
Dodecane (C12)	0.009	0.005	mg/L	0.01000		94	40-140			
Eicosane (C20)	0.011	0.005	mg/L	0.01000		113	40-140			
Hexacosane (C26)	0.011	0.005	mg/L	0.01000		115	40-140			
Hexadecane (C16)	0.011	0.005	mg/L	0.01000		106	40-140			
Nonadecane (C19)	0.009	0.005	mg/L	0.01000		91	40-140			
Nonane (C9)	0.005	0.005	mg/L	0.01000		53	30-140			
Octacosane (C28)	0.012	0.005	mg/L	0.01000		117	40-140			
Octadecane (C18)	0.011	0.005	mg/L	0.01000		110	40-140			
Tetracosane (C24)	0.012	0.005	mg/L	0.01000		116	40-140			
Tetradecane (C14)	0.010	0.005	mg/L	0.01000		99	40-140			
Total Petroleum Hydrocarbons	0.144	0.20	mg/L	0.1400		103	40-140			
Triacontane (C30)	0.012	0.005	mg/L	0.01000		117	40-140			
Surrogate: O-Terphenyl	*0.101*		mg/L	*0.1000*		*101*	*40-140*			
LCS Dup										
Decane (C10)	0.043	0.005	mg/L	0.05000		86	40-140	0.9	25	
Docosane (C22)	0.052	0.005	mg/L	0.05000		104	40-140	2	25	
Dodecane (C12)	0.047	0.005	mg/L	0.05000		94	40-140	2	25	
Eicosane (C20)	0.052	0.005	mg/L	0.05000		103	40-140	2	25	
Hexacosane (C26)	0.052	0.005	mg/L	0.05000		104	40-140	2	25	
Hexadecane (C16)	0.050	0.005	mg/L	0.05000		101	40-140	2	25	
Nonadecane (C19)	0.058	0.005	mg/L	0.05000		115	40-140	2	25	
Nonane (C9)	0.036	0.005	mg/L	0.05000		71	30-140	0.4	25	
Octacosane (C28)	0.052	0.005	mg/L	0.05000		105	40-140	2	25	
Octadecane (C18)	0.051	0.005	mg/L	0.05000		103	40-140	2	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8100M Total Petroleum Hydrocarbons										
Batch CL91104 - 3510C										
Tetracosane (C24)	0.052	0.005	mg/L	0.05000		104	40-140	2	25	
Tetradecane (C14)	0.050	0.005	mg/L	0.05000		100	40-140	2	25	
Total Petroleum Hydrocarbons	0.706	0.20	mg/L	0.7000		101	40-140	2	25	
Triacontane (C30)	0.053	0.005	mg/L	0.05000		106	40-140	2	25	
Surrogate: O-Terphenyl	*0.0993*		mg/L	*0.1000*		*99*	*40-140*			
8260B Volatile Organic Compounds										
Batch CL91143 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91143 - 5030B										
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0246*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0246*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0241*		mg/L	*0.02500*		*96*	*70-130*			
Surrogate: Toluene-d8	*0.0256*		mg/L	*0.02500*		*102*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	10.3		ug/L	10.00		103	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91143 - 5030B										
1,1,1-Trichloroethane	9.62		ug/L	10.00		96	70-130			
1,1,2,2-Tetrachloroethane	9.77		ug/L	10.00		98	70-130			
1,1,2-Trichloroethane	9.72		ug/L	10.00		97	70-130			
1,1-Dichloroethane	9.34		ug/L	10.00		93	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			
1,1-Dichloropropene	9.77		ug/L	10.00		98	70-130			
1,2,3-Trichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,2,3-Trichloropropane	9.52		ug/L	10.00		95	70-130			
1,2,4-Trichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,2,4-Trimethylbenzene	11.0		ug/L	10.00		110	70-130			
1,2-Dibromo-3-Chloropropane	10.1		ug/L	10.00		101	70-130			
1,2-Dibromoethane	10.8		ug/L	10.00		108	70-130			
1,2-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2-Dichloroethane	10.2		ug/L	10.00		102	70-130			
1,2-Dichloropropane	9.73		ug/L	10.00		97	70-130			
1,3,5-Trimethylbenzene	10.2		ug/L	10.00		102	70-130			
1,3-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,3-Dichloropropane	9.59		ug/L	10.00		96	70-130			
1,4-Dichlorobenzene	9.98		ug/L	10.00		100	70-130			
1,4-Dioxane - Screen	401		ug/L	200.0		200	0-332			
1-Chlorohexane	9.93		ug/L	10.00		99	70-130			
2,2-Dichloropropane	9.98		ug/L	10.00		100	70-130			
2-Butanone	45.9		ug/L	50.00		92	70-130			
2-Chlorotoluene	10.2		ug/L	10.00		102	70-130			
2-Hexanone	48.2		ug/L	50.00		96	70-130			
4-Chlorotoluene	10.5		ug/L	10.00		105	70-130			
4-Isopropyltoluene	10.5		ug/L	10.00		105	70-130			
4-Methyl-2-Pentanone	46.3		ug/L	50.00		93	70-130			
Acetone	43.4		ug/L	50.00		87	70-130			
Benzene	10.4		ug/L	10.00		104	70-130			
Bromobenzene	10.6		ug/L	10.00		106	70-130			
Bromochloromethane	9.69		ug/L	10.00		97	70-130			
Bromodichloromethane	10.4		ug/L	10.00		104	70-130			
Bromoform	11.1		ug/L	10.00		111	70-130			
Bromomethane	9.34		ug/L	10.00		93	70-130			
Carbon Disulfide	11.3		ug/L	10.00		113	70-130			
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130			
Chlorobenzene	10.2		ug/L	10.00		102	70-130			
Chloroethane	8.62		ug/L	10.00		86	70-130			
Chloroform	10.6		ug/L	10.00		106	70-130			
Chloromethane	7.98		ug/L	10.00		80	70-130			
cis-1,2-Dichloroethene	9.80		ug/L	10.00		98	70-130			
cis-1,3-Dichloropropene	9.75		ug/L	10.00		98	70-130			
Dibromochloromethane	9.42		ug/L	10.00		94	70-130			
Dibromomethane	9.25		ug/L	10.00		92	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91143 - 5030B										
Dichlorodifluoromethane	8.82		ug/L	10.00		88	70-130			
Diethyl Ether	9.98		ug/L	10.00		100	70-130			
Di-isopropyl ether	10.4		ug/L	10.00		104	70-130			
Ethyl tertiary-butyl ether	9.47		ug/L	10.00		95	70-130			
Ethylbenzene	10.8		ug/L	10.00		108	70-130			
Hexachlorobutadiene	11.9		ug/L	10.00		119	70-130			
Hexachloroethane	11.4		ug/L	10.00		114	70-130			
Isopropylbenzene	10.6		ug/L	10.00		106	70-130			
Methyl tert-Butyl Ether	9.77		ug/L	10.00		98	70-130			
Methylene Chloride	10.3		ug/L	10.00		103	70-130			
Naphthalene	10.3		ug/L	10.00		103	70-130			
n-Butylbenzene	10.5		ug/L	10.00		105	70-130			
n-Propylbenzene	10.5		ug/L	10.00		105	70-130			
sec-Butylbenzene	10.3		ug/L	10.00		103	70-130			
Styrene	10.1		ug/L	10.00		101	70-130			
tert-Butylbenzene	10.6		ug/L	10.00		106	70-130			
Tertiary-amyl methyl ether	10.5		ug/L	10.00		105	70-130			
Tetrachloroethene	9.92		ug/L	10.00		99	70-130			
Tetrahydrofuran	10.4		ug/L	10.00		104	70-130			
Toluene	9.78		ug/L	10.00		98	70-130			
trans-1,2-Dichloroethene	9.59		ug/L	10.00		96	70-130			
trans-1,3-Dichloropropene	9.05		ug/L	10.00		90	70-130			
Trichloroethene	9.45		ug/L	10.00		94	70-130			
Trichlorofluoromethane	10.8		ug/L	10.00		108	70-130			
Vinyl Acetate	8.71		ug/L	10.00		87	70-130			
Vinyl Chloride	8.05		ug/L	10.00		80	70-130			
Xylene O	10.7		ug/L	10.00		107	70-130			
Xylene P,M	20.9		ug/L	20.00		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0244*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0249*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0246*		mg/L	*0.02500*		*98*	*70-130*			
Surrogate: Toluene-d8	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	10.1		ug/L	10.00		101	70-130	2	25	
1,1,1-Trichloroethane	9.68		ug/L	10.00		97	70-130	0.6	25	
1,1,2,2-Tetrachloroethane	9.51		ug/L	10.00		95	70-130	3	25	
1,1,2-Trichloroethane	9.42		ug/L	10.00		94	70-130	3	25	
1,1-Dichloroethane	9.89		ug/L	10.00		99	70-130	6	25	
1,1-Dichloroethene	9.98		ug/L	10.00		100	70-130	4	25	
1,1-Dichloropropene	9.26		ug/L	10.00		93	70-130	5	25	
1,2,3-Trichlorobenzene	9.85		ug/L	10.00		98	70-130	9	25	
1,2,3-Trichloropropane	9.29		ug/L	10.00		93	70-130	2	25	
1,2,4-Trichlorobenzene	10.4		ug/L	10.00		104	70-130	2	25	
1,2,4-Trimethylbenzene	10.8		ug/L	10.00		108	70-130	2	25	
1,2-Dibromo-3-Chloropropane	7.87		ug/L	10.00		79	70-130	25	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91143 - 5030B										
1,2-Dibromoethane	9.80		ug/L	10.00		98	70-130	10	25	
1,2-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	2	25	
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130	0.9	25	
1,2-Dichloropropane	9.55		ug/L	10.00		96	70-130	2	25	
1,3,5-Trimethylbenzene	10.3		ug/L	10.00		103	70-130	1	25	
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	6	25	
1,3-Dichloropropane	9.86		ug/L	10.00		99	70-130	3	25	
1,4-Dichlorobenzene	9.99		ug/L	10.00		100	70-130	0.1	25	
1,4-Dioxane - Screen	287		ug/L	200.0		144	0-332	33	200	
1-Chlorohexane	9.44		ug/L	10.00		94	70-130	5	25	
2,2-Dichloropropane	9.93		ug/L	10.00		99	70-130	0.5	25	
2-Butanone	44.4		ug/L	50.00		89	70-130	3	25	
2-Chlorotoluene	9.80		ug/L	10.00		98	70-130	4	25	
2-Hexanone	42.3		ug/L	50.00		85	70-130	13	25	
4-Chlorotoluene	10.1		ug/L	10.00		101	70-130	4	25	
4-Isopropyltoluene	10.8		ug/L	10.00		108	70-130	3	25	
4-Methyl-2-Pentanone	43.7		ug/L	50.00		87	70-130	6	25	
Acetone	39.3		ug/L	50.00		79	70-130	10	25	
Benzene	10.4		ug/L	10.00		104	70-130	0.9	25	
Bromobenzene	10.3		ug/L	10.00		103	70-130	3	25	
Bromochloromethane	10.3		ug/L	10.00		103	70-130	6	25	
Bromodichloromethane	10.2		ug/L	10.00		102	70-130	2	25	
Bromoform	9.92		ug/L	10.00		99	70-130	11	25	
Bromomethane	8.66		ug/L	10.00		87	70-130	8	25	
Carbon Disulfide	11.4		ug/L	10.00		114	70-130	1	25	
Carbon Tetrachloride	10.4		ug/L	10.00		104	70-130	2	25	
Chlorobenzene	10.3		ug/L	10.00		103	70-130	1	25	
Chloroethane	8.28		ug/L	10.00		83	70-130	4	25	
Chloroform	10.5		ug/L	10.00		105	70-130	0.09	25	
Chloromethane	8.79		ug/L	10.00		88	70-130	10	25	
cis-1,2-Dichloroethene	9.78		ug/L	10.00		98	70-130	0.2	25	
cis-1,3-Dichloropropene	9.16		ug/L	10.00		92	70-130	6	25	
Dibromochloromethane	9.59		ug/L	10.00		96	70-130	2	25	
Dibromomethane	8.89		ug/L	10.00		89	70-130	4	25	
Dichlorodifluoromethane	8.12		ug/L	10.00		81	70-130	8	25	
Diethyl Ether	9.91		ug/L	10.00		99	70-130	0.7	25	
Di-isopropyl ether	10.3		ug/L	10.00		103	70-130	1	25	
Ethyl tertiary-butyl ether	9.56		ug/L	10.00		96	70-130	0.9	25	
Ethylbenzene	11.2		ug/L	10.00		112	70-130	4	25	
Hexachlorobutadiene	11.0		ug/L	10.00		110	70-130	8	25	
Hexachloroethane	10.5		ug/L	10.00		105	70-130	8	25	
Isopropylbenzene	10.1		ug/L	10.00		101	70-130	5	25	
Methyl tert-Butyl Ether	9.99		ug/L	10.00		100	70-130	2	25	
Methylene Chloride	9.96		ug/L	10.00		100	70-130	3	25	
Naphthalene	9.32		ug/L	10.00		93	70-130	10	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91143 - 5030B										
n-Butylbenzene	10.6		ug/L	10.00		106	70-130	0.9	25	
n-Propylbenzene	10.8		ug/L	10.00		108	70-130	2	25	
sec-Butylbenzene	9.75		ug/L	10.00		98	70-130	5	25	
Styrene	10.1		ug/L	10.00		101	70-130	0.5	25	
tert-Butylbenzene	10.4		ug/L	10.00		104	70-130	2	25	
Tertiary-amyl methyl ether	9.81		ug/L	10.00		98	70-130	7	25	
Tetrachloroethene	9.63		ug/L	10.00		96	70-130	3	25	
Tetrahydrofuran	11.9		ug/L	10.00		119	70-130	13	25	
Toluene	9.63		ug/L	10.00		96	70-130	2	25	
trans-1,2-Dichloroethene	9.10		ug/L	10.00		91	70-130	5	25	
trans-1,3-Dichloropropene	8.32		ug/L	10.00		83	70-130	8	25	
Trichloroethene	9.14		ug/L	10.00		91	70-130	3	25	
Trichlorofluoromethane	10.3		ug/L	10.00		103	70-130	5	25	
Vinyl Acetate	8.70		ug/L	10.00		87	70-130	0.1	25	
Vinyl Chloride	7.61		ug/L	10.00		76	70-130	6	25	
Xylene O	10.4		ug/L	10.00		104	70-130	3	25	
Xylene P,M	21.7		ug/L	20.00		109	70-130	4	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0243*		mg/L	*0.02500*		*97*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0257*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: Toluene-d8	*0.0260*		mg/L	*0.02500*		*104*	*70-130*			
Batch CL91348 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91348 - 5030B										
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91348 - 5030B										
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0237*		mg/L	*0.02500*		*95*	*70-130*			
Surrogate: Toluene-d8	*0.0241*		mg/L	*0.02500*		*97*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0095	0.0010	mg/L	0.01000		95	70-130			
1,1,1-Trichloroethane	0.0101	0.0010	mg/L	0.01000		101	70-130			
1,1,2,2-Tetrachloroethane	0.0099	0.0005	mg/L	0.01000		99	70-130			
1,1,2-Trichloroethane	0.0094	0.0010	mg/L	0.01000		94	70-130			
1,1-Dichloroethane	0.0097	0.0010	mg/L	0.01000		97	70-130			
1,1-Dichloroethene	0.0105	0.0010	mg/L	0.01000		105	70-130			
1,1-Dichloropropene	0.0092	0.0020	mg/L	0.01000		92	70-130			
1,2,3-Trichlorobenzene	0.0102	0.0010	mg/L	0.01000		102	70-130			
1,2,3-Trichloropropane	0.0097	0.0010	mg/L	0.01000		97	70-130			
1,2,4-Trichlorobenzene	0.0101	0.0010	mg/L	0.01000		101	70-130			
1,2,4-Trimethylbenzene	0.0108	0.0010	mg/L	0.01000		108	70-130			
1,2-Dibromo-3-Chloropropane	0.0098	0.0050	mg/L	0.01000		98	70-130			
1,2-Dibromoethane	0.0098	0.0010	mg/L	0.01000		98	70-130			
1,2-Dichlorobenzene	0.0102	0.0010	mg/L	0.01000		102	70-130			
1,2-Dichloroethane	0.0096	0.0010	mg/L	0.01000		96	70-130			
1,2-Dichloropropane	0.0092	0.0010	mg/L	0.01000		92	70-130			
1,3,5-Trimethylbenzene	0.0103	0.0010	mg/L	0.01000		103	70-130			
1,3-Dichlorobenzene	0.0099	0.0010	mg/L	0.01000		99	70-130			
1,3-Dichloropropane	0.0098	0.0010	mg/L	0.01000		98	70-130			
1,4-Dichlorobenzene	0.0099	0.0010	mg/L	0.01000		99	70-130			
1,4-Dioxane - Screen	0.359	0.500	mg/L	0.2000		179	0-332			
1-Chlorohexane	0.0090	0.0010	mg/L	0.01000		91	70-130			
2,2-Dichloropropane	0.0096	0.0010	mg/L	0.01000		96	70-130			
2-Butanone	0.0461	0.0100	mg/L	0.05000		92	70-130			
2-Chlorotoluene	0.0100	0.0010	mg/L	0.01000		100	70-130			
2-Hexanone	0.0450	0.0100	mg/L	0.05000		90	70-130			
4-Chlorotoluene	0.0102	0.0010	mg/L	0.01000		102	70-130			
4-Isopropyltoluene	0.0105	0.0010	mg/L	0.01000		105	70-130			
4-Methyl-2-Pentanone	0.0450	0.0250	mg/L	0.05000		90	70-130			
Acetone	0.0453	0.0100	mg/L	0.05000		91	70-130			
Benzene	0.0104	0.0010	mg/L	0.01000		104	70-130			
Bromobenzene	0.0101	0.0020	mg/L	0.01000		101	70-130			
Bromochloromethane	0.0100	0.0010	mg/L	0.01000		100	70-130			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91348 - 5030B										
Bromodichloromethane	0.0097	0.0006	mg/L	0.01000		97	70-130			
Bromoform	0.0094	0.0010	mg/L	0.01000		94	70-130			
Bromomethane	0.0094	0.0020	mg/L	0.01000		94	70-130			
Carbon Disulfide	0.0106	0.0010	mg/L	0.01000		106	70-130			
Carbon Tetrachloride	0.0103	0.0010	mg/L	0.01000		103	70-130			
Chlorobenzene	0.0100	0.0010	mg/L	0.01000		100	70-130			
Chloroethane	0.0085	0.0020	mg/L	0.01000		85	70-130			
Chloroform	0.0102	0.0010	mg/L	0.01000		102	70-130			
Chloromethane	0.0090	0.0020	mg/L	0.01000		90	70-130			
cis-1,2-Dichloroethene	0.0096	0.0010	mg/L	0.01000		96	70-130			
cis-1,3-Dichloropropene	0.0098	0.0004	mg/L	0.01000		98	70-130			
Dibromochloromethane	0.0089	0.0010	mg/L	0.01000		89	70-130			
Dibromomethane	0.0095	0.0010	mg/L	0.01000		95	70-130			
Dichlorodifluoromethane	0.0085	0.0020	mg/L	0.01000		85	70-130			
Diethyl Ether	0.0094	0.0010	mg/L	0.01000		94	70-130			
Di-isopropyl ether	0.0105	0.0010	mg/L	0.01000		105	70-130			
Ethyl tertiary-butyl ether	0.0094	0.0010	mg/L	0.01000		94	70-130			
Ethylbenzene	0.0106	0.0010	mg/L	0.01000		106	70-130			
Hexachlorobutadiene	0.0112	0.0006	mg/L	0.01000		112	70-130			
Hexachloroethane	0.0090	0.0010	mg/L	0.01000		90	70-130			
Isopropylbenzene	0.0100	0.0010	mg/L	0.01000		100	70-130			
Methyl tert-Butyl Ether	0.0102	0.0010	mg/L	0.01000		102	70-130			
Methylene Chloride	0.0098	0.0020	mg/L	0.01000		98	70-130			
Naphthalene	0.0100	0.0010	mg/L	0.01000		100	70-130			
n-Butylbenzene	0.0106	0.0010	mg/L	0.01000		106	70-130			
n-Propylbenzene	0.0103	0.0010	mg/L	0.01000		103	70-130			
sec-Butylbenzene	0.0101	0.0010	mg/L	0.01000		101	70-130			
Styrene	0.0100	0.0010	mg/L	0.01000		100	70-130			
tert-Butylbenzene	0.0098	0.0010	mg/L	0.01000		98	70-130			
Tertiary-amyl methyl ether	0.0104	0.0010	mg/L	0.01000		104	70-130			
Tetrachloroethene	0.0097	0.0010	mg/L	0.01000		97	70-130			
Tetrahydrofuran	0.0128	0.0050	mg/L	0.01000		128	70-130			
Toluene	0.0103	0.0010	mg/L	0.01000		103	70-130			
trans-1,2-Dichloroethene	0.0096	0.0010	mg/L	0.01000		96	70-130			
trans-1,3-Dichloropropene	0.0084	0.0004	mg/L	0.01000		84	70-130			
Trichloroethene	0.0093	0.0010	mg/L	0.01000		93	70-130			
Trichlorofluoromethane	0.0105	0.0010	mg/L	0.01000		105	70-130			
Vinyl Acetate	0.0086	0.0050	mg/L	0.01000		86	70-130			
Vinyl Chloride	0.0083	0.0010	mg/L	0.01000		83	70-130			
Xylene O	0.0102	0.0010	mg/L	0.01000		102	70-130			
Xylene P,M	0.0208	0.0020	mg/L	0.02000		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0239*		mg/L	*0.02500*		*96*	*70-130*			
Surrogate: Toluene-d8	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91348 - 5030B										
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0101	0.0010	mg/L	0.01000		101	70-130	7	25	
1,1,1-Trichloroethane	0.0102	0.0010	mg/L	0.01000		102	70-130	1	25	
1,1,2,2-Tetrachloroethane	0.0100	0.0005	mg/L	0.01000		100	70-130	2	25	
1,1,2-Trichloroethane	0.0098	0.0010	mg/L	0.01000		98	70-130	4	25	
1,1-Dichloroethane	0.0093	0.0010	mg/L	0.01000		93	70-130	4	25	
1,1-Dichloroethene	0.0103	0.0010	mg/L	0.01000		103	70-130	2	25	
1,1-Dichloropropene	0.0092	0.0020	mg/L	0.01000		92	70-130	0	25	
1,2,3-Trichlorobenzene	0.0104	0.0010	mg/L	0.01000		104	70-130	2	25	
1,2,3-Trichloropropane	0.0101	0.0010	mg/L	0.01000		101	70-130	4	25	
1,2,4-Trichlorobenzene	0.0100	0.0010	mg/L	0.01000		100	70-130	1	25	
1,2,4-Trimethylbenzene	0.0107	0.0010	mg/L	0.01000		107	70-130	0.7	25	
1,2-Dibromo-3-Chloropropane	0.0089	0.0050	mg/L	0.01000		89	70-130	9	25	
1,2-Dibromoethane	0.0096	0.0010	mg/L	0.01000		96	70-130	3	25	
1,2-Dichlorobenzene	0.0103	0.0010	mg/L	0.01000		103	70-130	1	25	
1,2-Dichloroethane	0.0100	0.0010	mg/L	0.01000		100	70-130	3	25	
1,2-Dichloropropane	0.0102	0.0010	mg/L	0.01000		102	70-130	10	25	
1,3,5-Trimethylbenzene	0.0098	0.0010	mg/L	0.01000		98	70-130	5	25	
1,3-Dichlorobenzene	0.0099	0.0010	mg/L	0.01000		99	70-130	0	25	
1,3-Dichloropropane	0.0097	0.0010	mg/L	0.01000		97	70-130	0.6	25	
1,4-Dichlorobenzene	0.0094	0.0010	mg/L	0.01000		94	70-130	6	25	
1,4-Dioxane - Screen	0.283	0.500	mg/L	0.2000		142	0-332	23	200	
1-Chlorohexane	0.0090	0.0010	mg/L	0.01000		90	70-130	0.9	25	
2,2-Dichloropropane	0.0100	0.0010	mg/L	0.01000		100	70-130	4	25	
2-Butanone	0.0478	0.0100	mg/L	0.05000		96	70-130	4	25	
2-Chlorotoluene	0.0100	0.0010	mg/L	0.01000		100	70-130	0.5	25	
2-Hexanone	0.0459	0.0100	mg/L	0.05000		92	70-130	2	25	
4-Chlorotoluene	0.0101	0.0010	mg/L	0.01000		101	70-130	2	25	
4-Isopropyltoluene	0.0100	0.0010	mg/L	0.01000		100	70-130	5	25	
4-Methyl-2-Pentanone	0.0484	0.0250	mg/L	0.05000		97	70-130	7	25	
Acetone	0.0458	0.0100	mg/L	0.05000		92	70-130	1	25	
Benzene	0.0104	0.0010	mg/L	0.01000		104	70-130	0.2	25	
Bromobenzene	0.0101	0.0020	mg/L	0.01000		101	70-130	0.2	25	
Bromochloromethane	0.0098	0.0010	mg/L	0.01000		98	70-130	2	25	
Bromodichloromethane	0.0100	0.0006	mg/L	0.01000		100	70-130	4	25	
Bromoform	0.0096	0.0010	mg/L	0.01000		96	70-130	2	25	
Bromomethane	0.0090	0.0020	mg/L	0.01000		90	70-130	4	25	
Carbon Disulfide	0.0106	0.0010	mg/L	0.01000		106	70-130	0.09	25	
Carbon Tetrachloride	0.0105	0.0010	mg/L	0.01000		105	70-130	1	25	
Chlorobenzene	0.0104	0.0010	mg/L	0.01000		104	70-130	4	25	
Chloroethane	0.0091	0.0020	mg/L	0.01000		91	70-130	6	25	
Chloroform	0.0107	0.0010	mg/L	0.01000		107	70-130	5	25	
Chloromethane	0.0084	0.0020	mg/L	0.01000		84	70-130	7	25	
cis-1,2-Dichloroethene	0.0095	0.0010	mg/L	0.01000		95	70-130	1	25	
cis-1,3-Dichloropropene	0.0097	0.0004	mg/L	0.01000		97	70-130	2	25	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CL91348 - 5030B										
Dibromochloromethane	0.0083	0.0010	mg/L	0.01000		83	70-130	6	25	
Dibromomethane	0.0093	0.0010	mg/L	0.01000		93	70-130	3	25	
Dichlorodifluoromethane	0.0080	0.0020	mg/L	0.01000		80	70-130	7	25	
Diethyl Ether	0.0104	0.0010	mg/L	0.01000		104	70-130	11	25	
Di-isopropyl ether	0.0105	0.0010	mg/L	0.01000		105	70-130	0.1	25	
Ethyl tertiary-butyl ether	0.0103	0.0010	mg/L	0.01000		103	70-130	9	25	
Ethylbenzene	0.0108	0.0010	mg/L	0.01000		108	70-130	2	25	
Hexachlorobutadiene	0.0109	0.0006	mg/L	0.01000		109	70-130	3	25	
Hexachloroethane	0.0094	0.0010	mg/L	0.01000		94	70-130	4	25	
Isopropylbenzene	0.0105	0.0010	mg/L	0.01000		105	70-130	4	25	
Methyl tert-Butyl Ether	0.0108	0.0010	mg/L	0.01000		108	70-130	6	25	
Methylene Chloride	0.0100	0.0020	mg/L	0.01000		100	70-130	2	25	
Naphthalene	0.0098	0.0010	mg/L	0.01000		98	70-130	3	25	
n-Butylbenzene	0.0098	0.0010	mg/L	0.01000		98	70-130	8	25	
n-Propylbenzene	0.0100	0.0010	mg/L	0.01000		100	70-130	3	25	
sec-Butylbenzene	0.0098	0.0010	mg/L	0.01000		98	70-130	3	25	
Styrene	0.0098	0.0010	mg/L	0.01000		98	70-130	1	25	
tert-Butylbenzene	0.0097	0.0010	mg/L	0.01000		97	70-130	0.4	25	
Tertiary-amyl methyl ether	0.0102	0.0010	mg/L	0.01000		102	70-130	2	25	
Tetrachloroethene	0.0094	0.0010	mg/L	0.01000		94	70-130	3	25	
Tetrahydrofuran	0.0099	0.0050	mg/L	0.01000		99	70-130	25	25	
Toluene	0.0100	0.0010	mg/L	0.01000		100	70-130	2	25	
trans-1,2-Dichloroethene	0.0094	0.0010	mg/L	0.01000		94	70-130	2	25	
trans-1,3-Dichloropropene	0.0080	0.0004	mg/L	0.01000		80	70-130	5	25	
Trichloroethene	0.0091	0.0010	mg/L	0.01000		91	70-130	2	25	
Trichlorofluoromethane	0.0111	0.0010	mg/L	0.01000		111	70-130	6	25	
Vinyl Acetate	0.0080	0.0050	mg/L	0.01000		80	70-130	7	25	
Vinyl Chloride	0.0076	0.0010	mg/L	0.01000		76	70-130	8	25	
Xylene O	0.0102	0.0010	mg/L	0.01000		102	70-130	0.4	25	
Xylene P,M	0.0213	0.0020	mg/L	0.02000		106	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0250*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0249*		mg/L	*0.02500*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0256*		mg/L	*0.02500*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
8270D Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
Blank										
1,1-Biphenyl	ND	0.010	mg/L							
1,2,4-Trichlorobenzene	ND	0.010	mg/L							
1,2-Dichlorobenzene	ND	0.010	mg/L							
1,3-Dichlorobenzene	ND	0.010	mg/L							
1,4-Dichlorobenzene	ND	0.010	mg/L							
2,3,4,6-Tetrachlorophenol	ND	0.050	mg/L							
2,4,5-Trichlorophenol	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
2,4,6-Trichlorophenol	ND	0.010	mg/L							
2,4-Dichlorophenol	ND	0.010	mg/L							
2,4-Dimethylphenol	ND	0.050	mg/L							
2,4-Dinitrophenol	ND	0.050	mg/L							
2,4-Dinitrotoluene	ND	0.010	mg/L							
2,6-Dinitrotoluene	ND	0.010	mg/L							
2-Chloronaphthalene	ND	0.010	mg/L							
2-Chlorophenol	ND	0.010	mg/L							
2-Methylphenol	ND	0.010	mg/L							
2-Nitroaniline	ND	0.010	mg/L							
2-Nitrophenol	ND	0.010	mg/L							
3,3´-Dichlorobenzidine	ND	0.020	mg/L							
3+4-Methylphenol	ND	0.020	mg/L							
3-Nitroaniline	ND	0.010	mg/L							
4,6-Dinitro-2-Methylphenol	ND	0.050	mg/L							
4-Bromophenyl-phenylether	ND	0.010	mg/L							
4-Chloro-3-Methylphenol	ND	0.010	mg/L							
4-Chloroaniline	ND	0.020	mg/L							
4-Chloro-phenyl-phenyl ether	ND	0.010	mg/L							
4-Nitroaniline	ND	0.010	mg/L							
4-Nitrophenol	ND	0.050	mg/L							
Acetophenone	ND	0.010	mg/L							
Aniline	ND	0.010	mg/L							
Azobenzene	ND	0.020	mg/L							
Benzoic Acid	ND	0.100	mg/L							
Benzyl Alcohol	ND	0.010	mg/L							
bis(2-Chloroethoxy)methane	ND	0.010	mg/L							
bis(2-Chloroethyl)ether	ND	0.010	mg/L							
bis(2-chloroisopropyl)Ether	ND	0.010	mg/L							
bis(2-Ethylhexyl)phthalate	ND	0.006	mg/L							
Butylbenzylphthalate	ND	0.010	mg/L							
Carbazole	ND	0.010	mg/L							
Dibenzofuran	ND	0.010	mg/L							
Diethylphthalate	ND	0.010	mg/L							
Dimethylphthalate	ND	0.010	mg/L							
Di-n-butylphthalate	ND	0.010	mg/L							
Di-n-octylphthalate	ND	0.010	mg/L							
Hexachlorobutadiene	ND	0.010	mg/L							
Hexachlorocyclopentadiene	ND	0.025	mg/L							
Hexachloroethane	ND	0.005	mg/L							
Isophorone	ND	0.010	mg/L							
Nitrobenzene	ND	0.010	mg/L							
N-Nitrosodimethylamine	ND	0.010	mg/L							
N-Nitroso-Di-n-Propylamine	ND	0.010	mg/L							
N-nitrosodiphenylamine	ND	0.010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
Phenol	ND	0.010	mg/L							
Pyridine	ND	0.100	mg/L							
Surrogate: 1,2-Dichlorobenzene-d4	*0.0435*		mg/L	*0.1000*		*44*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.0738*		mg/L	*0.1500*		*49*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.0680*		mg/L	*0.1500*		*45*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0440*		mg/L	*0.1000*		*44*	*30-130*			
Surrogate: 2-Fluorophenol	*0.0590*		mg/L	*0.1500*		*39*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0461*		mg/L	*0.1000*		*46*	*30-130*			
Surrogate: Phenol-d6	*0.0694*		mg/L	*0.1500*		*46*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0474*		mg/L	*0.1000*		*47*	*30-130*			
LCS										
1,1-Biphenyl	0.085	0.010	mg/L	0.1000		85	40-140			
1,2,4-Trichlorobenzene	0.085	0.010	mg/L	0.1000		85	40-140			
1,2-Dichlorobenzene	0.079	0.010	mg/L	0.1000		79	40-140			
1,3-Dichlorobenzene	0.076	0.010	mg/L	0.1000		76	40-140			
1,4-Dichlorobenzene	0.075	0.010	mg/L	0.1000		75	40-140			
2,3,4,6-Tetrachlorophenol	0.092	0.050	mg/L	0.1000		92	40-140			
2,4,5-Trichlorophenol	0.092	0.010	mg/L	0.1000		92	30-130			
2,4,6-Trichlorophenol	0.090	0.010	mg/L	0.1000		90	30-130			
2,4-Dichlorophenol	0.092	0.010	mg/L	0.1000		92	30-130			
2,4-Dimethylphenol	0.086	0.050	mg/L	0.1000		86	30-130			
2,4-Dinitrophenol	0.114	0.050	mg/L	0.1000		114	30-130			
2,4-Dinitrotoluene	0.097	0.010	mg/L	0.1000		97	40-140			
2,6-Dinitrotoluene	0.091	0.010	mg/L	0.1000		91	40-140			
2-Chloronaphthalene	0.083	0.010	mg/L	0.1000		83	40-140			
2-Chlorophenol	0.080	0.010	mg/L	0.1000		80	30-130			
2-Methylphenol	0.085	0.010	mg/L	0.1000		85	30-130			
2-Nitroaniline	0.092	0.010	mg/L	0.1000		92	40-140			
2-Nitrophenol	0.084	0.010	mg/L	0.1000		84	30-130			
3,3´-Dichlorobenzidine	0.075	0.020	mg/L	0.1000		75	40-140			
3+4-Methylphenol	0.173	0.020	mg/L	0.2000		87	30-130			
3-Nitroaniline	0.091	0.010	mg/L	0.1000		91	40-140			
4,6-Dinitro-2-Methylphenol	0.110	0.050	mg/L	0.1000		110	30-130			
4-Bromophenyl-phenylether	0.094	0.010	mg/L	0.1000		94	40-140			
4-Chloro-3-Methylphenol	0.094	0.010	mg/L	0.1000		94	30-130			
4-Chloroaniline	0.070	0.020	mg/L	0.1000		70	40-140			
4-Chloro-phenyl-phenyl ether	0.093	0.010	mg/L	0.1000		93	40-140			
4-Nitroaniline	0.084	0.010	mg/L	0.1000		84	40-140			
4-Nitrophenol	0.091	0.050	mg/L	0.1000		91	30-130			
Acetophenone	0.087	0.010	mg/L	0.1000		87	40-140			
Aniline	0.066	0.010	mg/L	0.1000		66	40-140			
Azobenzene	0.087	0.020	mg/L	0.1000		87	40-140			
Benzoic Acid	0.111	0.100	mg/L	0.1000		111	40-140			
Benzyl Alcohol	0.094	0.010	mg/L	0.1000		94	40-140			
bis(2-Chloroethoxy)methane	0.089	0.010	mg/L	0.1000		89	40-140			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
bis(2-Chloroethyl)ether	0.084	0.010	mg/L	0.1000		84	40-140			
bis(2-chloroisopropyl)Ether	0.083	0.010	mg/L	0.1000		83	40-140			
bis(2-Ethylhexyl)phthalate	0.093	0.006	mg/L	0.1000		93	40-140			
Butylbenzylphthalate	0.092	0.010	mg/L	0.1000		92	40-140			
Carbazole	0.092	0.010	mg/L	0.1000		92	40-140			
Dibenzofuran	0.088	0.010	mg/L	0.1000		88	40-140			
Diethylphthalate	0.096	0.010	mg/L	0.1000		96	40-140			
Dimethylphthalate	0.093	0.010	mg/L	0.1000		93	40-140			
Di-n-butylphthalate	0.102	0.010	mg/L	0.1000		102	40-140			
Di-n-octylphthalate	0.090	0.010	mg/L	0.1000		90	40-140			
Hexachlorobutadiene	0.087	0.010	mg/L	0.1000		87	40-140			
Hexachlorocyclopentadiene	0.062	0.025	mg/L	0.1000		62	40-140			
Hexachloroethane	0.074	0.005	mg/L	0.1000		74	40-140			
Isophorone	0.080	0.010	mg/L	0.1000		80	40-140			
Nitrobenzene	0.087	0.010	mg/L	0.1000		87	40-140			
N-Nitrosodimethylamine	0.076	0.010	mg/L	0.1000		76	40-140			
N-Nitroso-Di-n-Propylamine	0.088	0.010	mg/L	0.1000		88	40-140			
N-nitrosodiphenylamine	0.093	0.010	mg/L	0.1000		93	40-140			
Phenol	0.080	0.010	mg/L	0.1000		80	30-130			
Pyridine	0.079	0.100	mg/L	0.1000		79	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*0.0814*		mg/L	*0.1000*		*81*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.145*		mg/L	*0.1500*		*97*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.122*		mg/L	*0.1500*		*82*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0884*		mg/L	*0.1000*		*88*	*30-130*			
Surrogate: 2-Fluorophenol	*0.102*		mg/L	*0.1500*		*68*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0910*		mg/L	*0.1000*		*91*	*30-130*			
Surrogate: Phenol-d6	*0.123*		mg/L	*0.1500*		*82*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.0945*		mg/L	*0.1000*		*94*	*30-130*			
LCS Dup										
1,1-Biphenyl	0.091	0.010	mg/L	0.1000		91	40-140	7	20	
1,2,4-Trichlorobenzene	0.092	0.010	mg/L	0.1000		92	40-140	7	20	
1,2-Dichlorobenzene	0.083	0.010	mg/L	0.1000		83	40-140	6	20	
1,3-Dichlorobenzene	0.081	0.010	mg/L	0.1000		81	40-140	7	20	
1,4-Dichlorobenzene	0.081	0.010	mg/L	0.1000		81	40-140	8	20	
2,3,4,6-Tetrachlorophenol	0.098	0.050	mg/L	0.1000		98	40-140	7	20	
2,4,5-Trichlorophenol	0.101	0.010	mg/L	0.1000		101	30-130	9	20	
2,4,6-Trichlorophenol	0.099	0.010	mg/L	0.1000		99	30-130	10	20	
2,4-Dichlorophenol	0.099	0.010	mg/L	0.1000		99	30-130	8	20	
2,4-Dimethylphenol	0.093	0.050	mg/L	0.1000		93	30-130	7	20	
2,4-Dinitrophenol	0.122	0.050	mg/L	0.1000		122	30-130	7	20	
2,4-Dinitrotoluene	0.104	0.010	mg/L	0.1000		104	40-140	7	20	
2,6-Dinitrotoluene	0.098	0.010	mg/L	0.1000		98	40-140	7	20	
2-Chloronaphthalene	0.089	0.010	mg/L	0.1000		89	40-140	6	20	
2-Chlorophenol	0.089	0.010	mg/L	0.1000		89	30-130	11	20	
2-Methylphenol	0.092	0.010	mg/L	0.1000		92	30-130	8	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
2-Nitroaniline	0.099	0.010	mg/L	0.1000		99	40-140	7	20	
2-Nitrophenol	0.093	0.010	mg/L	0.1000		93	30-130	9	20	
3,3´-Dichlorobenzidine	0.078	0.020	mg/L	0.1000		78	40-140	3	20	
3+4-Methylphenol	0.187	0.020	mg/L	0.2000		93	30-130	8	20	
3-Nitroaniline	0.095	0.010	mg/L	0.1000		95	40-140	5	20	
4,6-Dinitro-2-Methylphenol	0.117	0.050	mg/L	0.1000		117	30-130	6	20	
4-Bromophenyl-phenylether	0.099	0.010	mg/L	0.1000		99	40-140	5	20	
4-Chloro-3-Methylphenol	0.101	0.010	mg/L	0.1000		101	30-130	7	20	
4-Chloroaniline	0.072	0.020	mg/L	0.1000		72	40-140	2	20	
4-Chloro-phenyl-phenyl ether	0.099	0.010	mg/L	0.1000		99	40-140	7	20	
4-Nitroaniline	0.089	0.010	mg/L	0.1000		89	40-140	6	20	
4-Nitrophenol	0.098	0.050	mg/L	0.1000		98	30-130	7	20	
Acetophenone	0.092	0.010	mg/L	0.1000		92	40-140	6	20	
Aniline	0.070	0.010	mg/L	0.1000		70	40-140	6	20	
Azobenzene	0.091	0.020	mg/L	0.1000		91	40-140	5	20	
Benzoic Acid	0.115	0.100	mg/L	0.1000		115	40-140	4	20	
Benzyl Alcohol	0.100	0.010	mg/L	0.1000		100	40-140	6	20	
bis(2-Chloroethoxy)methane	0.093	0.010	mg/L	0.1000		93	40-140	5	20	
bis(2-Chloroethyl)ether	0.089	0.010	mg/L	0.1000		89	40-140	6	20	
bis(2-chloroisopropyl)Ether	0.089	0.010	mg/L	0.1000		89	40-140	6	20	
bis(2-Ethylhexyl)phthalate	0.098	0.006	mg/L	0.1000		98	40-140	6	20	
Butylbenzylphthalate	0.098	0.010	mg/L	0.1000		98	40-140	6	20	
Carbazole	0.097	0.010	mg/L	0.1000		97	40-140	4	20	
Dibenzofuran	0.094	0.010	mg/L	0.1000		94	40-140	6	20	
Diethylphthalate	0.102	0.010	mg/L	0.1000		102	40-140	6	20	
Dimethylphthalate	0.100	0.010	mg/L	0.1000		100	40-140	7	20	
Di-n-butylphthalate	0.106	0.010	mg/L	0.1000		106	40-140	5	20	
Di-n-octylphthalate	0.099	0.010	mg/L	0.1000		99	40-140	9	20	
Hexachlorobutadiene	0.091	0.010	mg/L	0.1000		91	40-140	4	20	
Hexachlorocyclopentadiene	0.067	0.025	mg/L	0.1000		67	40-140	7	20	
Hexachloroethane	0.078	0.005	mg/L	0.1000		78	40-140	6	20	
Isophorone	0.085	0.010	mg/L	0.1000		85	40-140	6	20	
Nitrobenzene	0.092	0.010	mg/L	0.1000		92	40-140	6	20	
N-Nitrosodimethylamine	0.081	0.010	mg/L	0.1000		81	40-140	6	20	
N-Nitroso-Di-n-Propylamine	0.094	0.010	mg/L	0.1000		94	40-140	7	20	
N-nitrosodiphenylamine	0.097	0.010	mg/L	0.1000		97	40-140	5	20	
Phenol	0.089	0.010	mg/L	0.1000		89	30-130	11	20	
Pyridine	0.084	0.100	mg/L	0.1000		84	40-140	7	20	
Surrogate: 1,2-Dichlorobenzene-d4	*0.0844*		mg/L	*0.1000*		*84*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*0.155*		mg/L	*0.1500*		*103*	*15-110*			
Surrogate: 2-Chlorophenol-d4	*0.134*		mg/L	*0.1500*		*89*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*0.0921*		mg/L	*0.1000*		*92*	*30-130*			
Surrogate: 2-Fluorophenol	*0.118*		mg/L	*0.1500*		*79*	*15-110*			
Surrogate: Nitrobenzene-d5	*0.0956*		mg/L	*0.1000*		*96*	*30-130*			
Surrogate: Phenol-d6	*0.134*		mg/L	*0.1500*		*90*	*15-110*			
Surrogate: p-Terphenyl-d14	*0.101*		mg/L	*0.1000*		*101*	*30-130*			

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
Blank										
2-Methylnaphthalene	ND	0.00020	mg/L							
Acenaphthene	ND	0.00020	mg/L							
Acenaphthylene	ND	0.00020	mg/L							
Anthracene	ND	0.00020	mg/L							
Benzo(a)anthracene	ND	0.00005	mg/L							
Benzo(a)pyrene	ND	0.00005	mg/L							
Benzo(b)fluoranthene	ND	0.00005	mg/L							
Benzo(g,h,i)perylene	ND	0.00020	mg/L							
Benzo(k)fluoranthene	ND	0.00005	mg/L							
Chrysene	ND	0.00005	mg/L							
Dibenzo(a,h)Anthracene	ND	0.00005	mg/L							
Fluoranthene	ND	0.00020	mg/L							
Fluorene	ND	0.00020	mg/L							
Hexachlorobenzene	ND	0.00020	mg/L							
Indeno(1,2,3-cd)Pyrene	ND	0.00005	mg/L							
Naphthalene	ND	0.00020	mg/L							
Pentachlorophenol	ND	0.00090	mg/L							
Phenanthrene	ND	0.00020	mg/L							
Pyrene	ND	0.00020	mg/L							
LCS										
2-Methylnaphthalene	0.0820	0.00400	mg/L	0.1000		82	40-140			
Acenaphthene	0.0888	0.00400	mg/L	0.1000		89	40-140			
Acenaphthylene	0.0871	0.00400	mg/L	0.1000		87	40-140			
Anthracene	0.0865	0.00400	mg/L	0.1000		86	40-140			
Benzo(a)anthracene	0.0823	0.00100	mg/L	0.1000		82	40-140			
Benzo(a)pyrene	0.0849	0.00100	mg/L	0.1000		85	40-140			
Benzo(b)fluoranthene	0.0943	0.00100	mg/L	0.1000		94	40-140			
Benzo(g,h,i)perylene	0.0868	0.00400	mg/L	0.1000		87	40-140			
Benzo(k)fluoranthene	0.0850	0.00100	mg/L	0.1000		85	40-140			
Chrysene	0.0837	0.00100	mg/L	0.1000		84	40-140			
Dibenzo(a,h)Anthracene	0.0909	0.00100	mg/L	0.1000		91	40-140			
Fluoranthene	0.0920	0.00400	mg/L	0.1000		92	40-140			
Fluorene	0.0888	0.00400	mg/L	0.1000		89	40-140			
Hexachlorobenzene	0.110	0.00400	mg/L	0.1000		110	40-140			
Indeno(1,2,3-cd)Pyrene	0.0925	0.00100	mg/L	0.1000		93	40-140			
Naphthalene	0.0783	0.00400	mg/L	0.1000		78	40-140			
Pentachlorophenol	0.111	0.0180	mg/L	0.1000		111	30-130			
Phenanthrene	0.0852	0.00400	mg/L	0.1000		85	40-140			
Pyrene	0.0886	0.00400	mg/L	0.1000		89	40-140			
LCS Dup										
2-Methylnaphthalene	0.0826	0.00400	mg/L	0.1000		83	40-140	0.8	20	
Acenaphthene	0.0895	0.00400	mg/L	0.1000		89	40-140	0.8	20	
Acenaphthylene	0.0858	0.00400	mg/L	0.1000		86	40-140	2	20	
Anthracene	0.0871	0.00400	mg/L	0.1000		87	40-140	0.7	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
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ESS Laboratory Work Order: 19L0295

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D(SIM) Semi-Volatile Organic Compounds										
Batch CL91105 - 3520C										
Benzo(a)anthracene	0.0821	0.00100	mg/L	0.1000		82	40-140	0.2	20	
Benzo(a)pyrene	0.0868	0.00100	mg/L	0.1000		87	40-140	2	20	
Benzo(b)fluoranthene	0.0954	0.00100	mg/L	0.1000		95	40-140	1	20	
Benzo(g,h,i)perylene	0.0903	0.00400	mg/L	0.1000		90	40-140	4	20	
Benzo(k)fluoranthene	0.0878	0.00100	mg/L	0.1000		88	40-140	3	20	
Chrysene	0.0838	0.00100	mg/L	0.1000		84	40-140	0.1	20	
Dibenzo(a,h)Anthracene	0.0930	0.00100	mg/L	0.1000		93	40-140	2	20	
Fluoranthene	0.0884	0.00400	mg/L	0.1000		88	40-140	4	20	
Fluorene	0.0874	0.00400	mg/L	0.1000		87	40-140	2	20	
Hexachlorobenzene	0.109	0.00400	mg/L	0.1000		109	40-140	0.1	20	
Indeno(1,2,3-cd)Pyrene	0.0948	0.00100	mg/L	0.1000		95	40-140	2	20	
Naphthalene	0.0784	0.00400	mg/L	0.1000		78	40-140	0.1	20	
Pentachlorophenol	0.110	0.0180	mg/L	0.1000		110	30-130	1	20	
Phenanthrene	0.0861	0.00400	mg/L	0.1000		86	40-140	1	20	
Pyrene	0.0867	0.00400	mg/L	0.1000		87	40-140	2	20	
Classical Chemistry										
Batch CL91242 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	0.5	mg/L							
Total Organic Carbon (2)	ND	0.5	mg/L							
LCS										
Total Organic Carbon (1)	5.1	0.5	mg/L	5.000		101	80-120			
Total Organic Carbon (2)	5.1	0.5	mg/L	5.000		102	80-120			
LCS Dup										
Total Organic Carbon (1)	5.2	0.5	mg/L	5.000		104	80-120	3	20	
Total Organic Carbon (2)	5.2	0.5	mg/L	5.000		104	80-120	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

Notes and Definitions

U	Analyte included in the analysis, but not detected
S-	Surrogate recovery(ies) below lower control limit (S-).
Q	Calibration required quadratic regression (Q).
PT	Pentachlorophenol tailing factor > 2.
ICV-	Initial Calibration Verification recovery is below lower control limit (ICV-).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Truk Away Landfill

ESS Laboratory Work Order: 19L0295

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/dwp/partners/labCert.shtml

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.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 19L0295
Date Received: 12/10/2019
Project Due Date: 12/17/2019
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 4.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / (NA)

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

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	419972	Yes	No	Yes	VOA Vial - HCl	HCl	
01	419973	Yes	No	Yes	VOA Vial - HCl	HCl	
01	419974	Yes	No	Yes	VOA Vial - HCl	HCl	
01	419995	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	419996	Yes	NA	Yes	VOA Vial - HCl	HCl	
01	420057	Yes	NA	Yes	1L Amber - Unpres	NP	
01	420058	Yes	NA	Yes	1L Amber - Unpres	NP	
01	420059	Yes	NA	Yes	1L Amber - Unpres	NP	
01	420060	Yes	NA	Yes	1L Amber - Unpres	NP	
01	420061	Yes	NA	Yes	1L Amber - Unpres	NP	
01	420062	Yes	NA	Yes	1L Amber - Unpres	NP	
02	419969	Yes	No	Yes	VOA Vial - HCl	HCl	
02	419970	Yes	No	Yes	VOA Vial - HCl	HCl	
02	419971	Yes	No	Yes	VOA Vial - HCl	HCl	
02	419993	Yes	NA	Yes	VOA Vial - HCl	HCl	
02	419994	Yes	NA	Yes	VOA Vial - HCl	HCl	
02	420051	Yes	NA	Yes	1L Amber - Unpres	NP	
02	420052	Yes	NA	Yes	1L Amber - Unpres	NP	
02	420053	Yes	NA	Yes	1L Amber - Unpres	NP	
02	420054	Yes	NA	Yes	1L Amber - Unpres	NP	
02	420055	Yes	NA	Yes	1L Amber - Unpres	NP	
02	420056	Yes	NA	Yes	1L Amber - Unpres	NP	
03	419966	Yes	No	Yes	VOA Vial - HCl	HCl	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19L0295

Date Received: 12/10/2019

03	419967	Yes	No	Yes	VOA Vial - HCl	HCl
03	419968	Yes	No	Yes	VOA Vial - HCl	HCl
03	419991	Yes	NA	Yes	VOA Vial - HCl	HCl
03	419992	Yes	NA	Yes	VOA Vial - HCl	HCl
03	420045	Yes	NA	Yes	1L Amber - Unpres	NP
03	420046	Yes	NA	Yes	1L Amber - Unpres	NP
03	420047	Yes	NA	Yes	1L Amber - Unpres	NP
03	420048	Yes	NA	Yes	1L Amber - Unpres	NP
03	420049	Yes	NA	Yes	1L Amber - Unpres	NP
03	420050	Yes	NA	Yes	1L Amber - Unpres	NP
04	419963	Yes	No	Yes	VOA Vial - HCl	HCl
04	419964	Yes	No	Yes	VOA Vial - HCl	HCl
04	419965	Yes	No	Yes	VOA Vial - HCl	HCl
04	419989	Yes	NA	Yes	VOA Vial - HCl	HCl
04	419990	Yes	NA	Yes	VOA Vial - HCl	HCl
04	420039	Yes	NA	Yes	1L Amber - Unpres	NP
04	420040	Yes	NA	Yes	1L Amber - Unpres	NP
04	420041	Yes	NA	Yes	1L Amber - Unpres	NP
04	420042	Yes	NA	Yes	1L Amber - Unpres	NP
04	420043	Yes	NA	Yes	1L Amber - Unpres	NP
04	420044	Yes	NA	Yes	1L Amber - Unpres	NP
04	420070	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
05	419960	Yes	No	Yes	VOA Vial - HCl	HCl
05	419961	Yes	No	Yes	VOA Vial - HCl	HCl
05	419962	Yes	No	Yes	VOA Vial - HCl	HCl
05	419987	Yes	NA	Yes	VOA Vial - HCl	HCl
05	419988	Yes	NA	Yes	VOA Vial - HCl	HCl
05	420033	Yes	NA	Yes	1L Amber - Unpres	NP
05	420034	Yes	NA	Yes	1L Amber - Unpres	NP
05	420035	Yes	NA	Yes	1L Amber - Unpres	NP
05	420036	Yes	NA	Yes	1L Amber - Unpres	NP
05	420037	Yes	NA	Yes	1L Amber - Unpres	NP
05	420038	Yes	NA	Yes	1L Amber - Unpres	NP
05	420069	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
06	419957	Yes	No	Yes	VOA Vial - HCl	HCl
06	419958	Yes	No	Yes	VOA Vial - HCl	HCl
06	419959	Yes	No	Yes	VOA Vial - HCl	HCl
06	419985	Yes	NA	Yes	VOA Vial - HCl	HCl
06	419986	Yes	NA	Yes	VOA Vial - HCl	HCl
06	420027	Yes	NA	Yes	1L Amber - Unpres	NP
06	420028	Yes	NA	Yes	1L Amber - Unpres	NP
06	420029	Yes	NA	Yes	1L Amber - Unpres	NP
06	420030	Yes	NA	Yes	1L Amber - Unpres	NP
06	420031	Yes	NA	Yes	1L Amber - Unpres	NP
06	420032	Yes	NA	Yes	1L Amber - Unpres	NP
06	420068	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
07	419954	Yes	No	Yes	VOA Vial - HCl	HCl
07	419955	Yes	No	Yes	VOA Vial - HCl	HCl
07	419956	Yes	No	Yes	VOA Vial - HCl	HCl
07	419983	Yes	NA	Yes	VOA Vial - HCl	HCl
07	419984	Yes	NA	Yes	VOA Vial - HCl	HCl
07	420021	Yes	NA	Yes	1L Amber - Unpres	NP
07	420022	Yes	NA	Yes	1L Amber - Unpres	NP
07	420023	Yes	NA	Yes	1L Amber - Unpres	NP
07	420024	Yes	NA	Yes	1L Amber - Unpres	NP
07	420025	Yes	NA	Yes	1L Amber - Unpres	NP
07	420026	Yes	NA	Yes	1L Amber - Unpres	NP
07	420067	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
08	419951	Yes	No	Yes	VOA Vial - HCl	HCl
08	419952	Yes	No	Yes	VOA Vial - HCl	HCl
08	419953	Yes	No	Yes	VOA Vial - HCl	HCl
08	419981	Yes	NA	Yes	VOA Vial - HCl	HCl
08	419982	Yes	NA	Yes	VOA Vial - HCl	HCl
08	420015	Yes	NA	Yes	1L Amber - Unpres	NP
08	420016	Yes	NA	Yes	1L Amber - Unpres	NP
08	420017	Yes	NA	Yes	1L Amber - Unpres	NP
08	420018	Yes	NA	Yes	1L Amber - Unpres	NP
08	420019	Yes	NA	Yes	1L Amber - Unpres	NP
08	420020	Yes	NA	Yes	1L Amber - Unpres	NP

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Providence, RI - GZA/HDM

ESS Project ID: 19L0295

Date Received: 12/10/2019

08	420066	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
09	419948	Yes	No	Yes	VOA Vial - HCl	HCl
09	419949	Yes	No	Yes	VOA Vial - HCl	HCl
09	419950	Yes	No	Yes	VOA Vial - HCl	HCl
09	419979	Yes	NA	Yes	VOA Vial - HCl	HCl
09	419980	Yes	NA	Yes	VOA Vial - HCl	HCl
09	420009	Yes	NA	Yes	1L Amber - Unpres	NP
09	420010	Yes	NA	Yes	1L Amber - Unpres	NP
09	420011	Yes	NA	Yes	1L Amber - Unpres	NP
09	420012	Yes	NA	Yes	1L Amber - Unpres	NP
09	420013	Yes	NA	Yes	1L Amber - Unpres	NP
09	420014	Yes	NA	Yes	1L Amber - Unpres	NP
09	420065	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
10	419945	Yes	No	Yes	VOA Vial - HCl	HCl
10	419946	Yes	No	Yes	VOA Vial - HCl	HCl
10	419947	Yes	No	Yes	VOA Vial - HCl	HCl
10	419977	Yes	NA	Yes	VOA Vial - HCl	HCl
10	419978	Yes	NA	Yes	VOA Vial - HCl	HCl
10	420003	Yes	NA	Yes	1L Amber - Unpres	NP
10	420004	Yes	NA	Yes	1L Amber - Unpres	NP
10	420005	Yes	NA	Yes	1L Amber - Unpres	NP
10	420006	Yes	NA	Yes	1L Amber - Unpres	NP
10	420007	Yes	NA	Yes	1L Amber - Unpres	NP
10	420008	Yes	NA	Yes	1L Amber - Unpres	NP
10	420064	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
11	419942	Yes	No	Yes	VOA Vial - HCl	HCl
11	419943	Yes	No	Yes	VOA Vial - HCl	HCl
11	419944	Yes	No	Yes	VOA Vial - HCl	HCl
11	419975	Yes	NA	Yes	VOA Vial - HCl	HCl
11	419976	Yes	NA	Yes	VOA Vial - HCl	HCl
11	419997	Yes	NA	Yes	1L Amber - Unpres	NP
11	419998	Yes	NA	Yes	1L Amber - Unpres	NP
11	419999	Yes	NA	Yes	1L Amber - Unpres	NP
11	420000	Yes	NA	Yes	1L Amber - Unpres	NP
11	420001	Yes	NA	Yes	1L Amber - Unpres	NP
11	420002	Yes	NA	Yes	1L Amber - Unpres	NP
11	420063	Yes	NA	Yes	250 mL Poly - HNO3	HNO3
12	419941	Yes	No	Yes	VOA Vial - HCl	HCl

2nd Review

Were all containers scanned into storage/lab? Initials

Are barcode labels on correct containers? Yes / No

Are all Flashpoint stickers attached/container ID # circled? Yes / No / NA

Are all Hex Chrome stickers attached? Yes / No / NA

Are all QC stickers attached? Yes / No / NA

Are VOA stickers attached if bubbles noted? Yes / No / NA

Completed By: Date & Time: 12/10/19 2004

Reviewed By: Date & Time: 12/10/19 2040

Delivered By: 12/10/19 2040

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

CHAIN OF CUSTODY

ESS Lab # 19L0295

Turn Time: 5 Days

Regulatory State: RI

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits: Mercury, Iron

Electonic Deliverables: ☒ Data Checker ☒ Excel ☐ Other (Please Specify) .pdf

Company Name	Project #	Project Name
GZA	34640	Dark Away Landfill
Contact Person	**Address**	
Richard Carione	100 Valley St, Suite 300	
City	**State**	**Zip Code** / **PO #**
Providence	RI	02904
Telephone Number	**FAX Number**	**Email Address**
		richard.carione@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: VOCs	SVOCs	TPH	Pesticides	PCBs	IS Solid Waste Metals	TOC
1	12/10/19	0800	G	SW	SSW-1	X	X	X	X	X		X
2	12/10/19	0900	G	SW	SSW-11	X	X	X	X	X		X
3	12/10/19	0940	G	SW	SSW-10	X	X	X	X	X		X
4	12/10/19	1000	G	SW	SSW-9	X	X	X	X	X	X	X
5	12/10/19	1030	G	SW	SSW-8	X	X	X	X	X	X	X
6	12/10/19	1045	G	SW	SSW-7	X	X	X	X	X	X	X
7	12/10/19	1230	G	SW	SSW-2	X	X	X	X	X	X	X
8	12/10/19	1315	G	SW	SSW-3	X	X	X	X	X	X	X
9	12/10/19	1345	G	SW	SSW-4	X	X	X	X	X	X	X
10	12/10/19	1430	G	SW	SSW-12	X	X	X	X	X	X	X
						V	AG	AG	AG	AG	P	V
						7	6	6	6	6	3	7
						2	1	1	1	1	4	2
					Number of Containers per Sample:	3	2	1	1	2	1	2

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

Laboratory Use Only

Cooler Present: X ○ Drop Off

Seals Intact: N/A ○ Pickup

Cooler Temperature: °C 4.1 + 3.4 + 2.2 + 3.6 2.9 + 3.1

Sampled by: Rowan Hawes / Ben Ramos

Comments: Please specify "Other" preservative and containers types in this space

Metals analysis: IS solid waste, mercury, iron

* All metals samples were field filtered

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
12-10-19 1625	12/10/19 1625		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

ESS Laboratory

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

CHAIN OF CUSTODY

ESS Lab # 19L0295

Turn Time: 5 Days
Regulatory State: RI
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Reporting Limits:
Electonic Deliverables: ☒ Data Checker ☒ Other (Please Specify →) PDF ☒ Excel

Company Name: GZA
Contact Person: Richard Carlone
City: Providence
State: RI
Telephone Number:
FAX Number:
Project #: 34649
Project Name: TMK-Away Landfill
Address: 188 Valley St Suite 300
Zip Code: 02909
PO #:
Email Address: richard.carlone@gza.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	VOCs	SVOC	TPH	Pesticides	PCBs	15 solid waste metals, mercury, iron	TOC
11	12/10/19	1450	G	SW	SSW-5	X	X	X	X	X	X	X
12	12/10/19	0900			Trip Blank	X						

	VOCs	SVOC	TPH	Pesticides	PCBs	Metals	TOC
Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer J-Jar O-Other P-Poly S-Sterile V-Vial	V	AG	AG	AG	AG	P	V
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	7	6	6	6	6	3	7
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*	2	1	1	1	1	4	2
Number of Containers per Sample:	3	2	1	1	2	1	2

Laboratory Use Only

Cooler Present: Y
Seals Intact: NA
Cooler Temperature: 2.9+3.1 4.4+3.4+2.2 °C
○ Drop Off ○ Pickup

Sampled by: Robyn Hawley / Ben Ramos

Comments: Please specify "Other" preservative and containers types in this space
Metals analysis: 15 solid waste metals mercury, iron
* All metals samples were field filtered
page 2 of 2

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 12-10-19 1625	[signature] 12/10/19 1625		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

GZA GeoEnvironmental, Inc.