SOIL SAMPLING AND ANALYSIS REPORT

CALTECH SUBMILLIMETER OBSERVATORY
DECOMMISSIONING PROJECT
MAUNA KEA SUMMIT
MAUNA KEA, BIG ISLAND, HAWAII

Prepared for:
CALIFORNIA INSTITUTE OF TECHNOLOGY
1200 E. California Boulevard
Pasadena, California 91125

Prepared by:

LEHUA ENVIRONMENTAL INC.
P.O. Box 1018
Kamuela, Hawaii 96743

Date: June 28, 2024

TABLE OF CONTENTS

LIST OF ACRONYMS

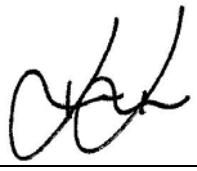
<	less than
%	percent
%R	percent recovery
bgs	below ground surface
BTEX	Benzene, toluene, ethylbenzene, xylenes
Caltech	California Institute of Technology
COPC	chemicals of potential concern
CSO	Caltech Submillimeter Observatory
HDOH	State of Hawai‘i Department of Health
DU	decision unit
DQO	data quality objective
EAL	Environmental Action Level
EPA	Environmental Protection Agency
ft	feet
g	gram
in	inch
ISM	incremental sampling method
LEI	Lehua Environmental Inc.
mg/kg	milligrams per kilogram
NA	not applicable
ND	not detected
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated biphenyls
RCRA	Resource Conservation Recovery Act
SAP	Sampling and Analysis Plan
TGM	Technical Guidance Manual
TCLP	Toxicity Characteristic Leaching Procedure
TPH-GRO	Total petroleum hydrocarbons-gasoline range organics
TPH-DRO	Total petroleum hydrocarbons-diesel range organics
TPH-RRO	Total petroleum hydrocarbons-residual range organics
VOCs	Volatile Organic Compounds

1.0 CERTIFICATIONS AND LIMITATIONS

Lehua Environmental Inc. (LEI) has completed this Soil Sampling and Analysis Report for the California Institute of Technology (Caltech) Submillimeter Observatory Decommissioning project located on the Mauna Kea Summit of Mauna Kea, Big Island, Hawaii (Subject Site). LEI's findings and recommendations contained herein are based on research, site observations, government regulations and laboratory data, which were gathered at the time and location of the study. Opinions stated in this report do not apply to changes that may have occurred after the services were performed.

LEI has performed specified services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No other warranty, guarantee, or representation, expressed or implied, is included or intended; unless otherwise specifically agreed to in writing by both LEI and LEI's Client.

This report is intended for the sole use of LEI's client exclusively for the Subject Site. LEI's client may use and release this report, including making and retaining copies, provided such use is limited to the particular site and project for which this report is provided. However, the services performed may not be appropriate for satisfying the needs of other users. Release of this report to third-parties will be at the sole risk of LEI's Client and/or said user, and LEI shall not be liable for any claims or damages resulting from or connected with such release or any third party's use or reuse of this report.

Prepared By: 

Kamalana Kobayashi
Project Principle
Lehua Environmental Inc.

Date: June 28, 2024

2.0 INTRODUCTION

The Caltech retained Lehua Environmental Inc. (LEI) to conduct soil sampling per the September 25, 2020, Soil Sampling and Analysis Plan (SAP) Draft completed by Enpro Environmental for the Caltech Submillimeter Observatory (CSO) Decommissioning Project at the Mauna Kea Summit, Mauna Kea, Hawaii. The decommissioning of facilities within the CSO sublease include the observatory, pump house, single-story outbuilding and cesspool. The decommissioning project included the removal of asphalt paving, slab-on-grade and below-grade foundations of the observatory building.

Specifically, LEI completed the following tasks:

- Performed site reconnaissance at the Subject Site;
- Reviewed the Enpro Environmental September 25, 2020, *Sampling and Analysis Plan Draft for the Caltech Submillimeter Observatory Decommissioning Project* (Enpro, 2020) located at the Mauna Kea Summit, Mauna Kea, Hawaii
- Identified a total of five (5) decision units within the Subject Site and collected a total of seven (7) incremental sampling method (ISM) soil samples from the 5 decision units of the Subject Site which included triplicate samples per SAP and Hawaii Department of Health (HDOH) Hazard Evaluation and Emergency Response (HEER) Technical Guidance Manual (TGM) recommendations.
- Submitted the seven (7) ISM soil samples to OnSite Environmental Inc. located in Redmond, Washington for the SAP required laboratory analysis.
- Prepared this report documenting the field activities and the results of the investigation including analytical results, photographs and recommendations.

3.0 SITE DESCRIPTION

The Subject Site is located near the summit of Mauna Kea in the north central portion of the Island of Hawaii. The site is a 0.75-acre portion of Tax Map Key (TMK) (3)4-4-015:009 and is zoned as Conservation Land.

The SAP defines below decision units at the Subject Site for soil sample collection (Figure 1, Appendix II):

- CSO Footprint, approximately 6,000 square feet (sf)
- An 850-gallon cesspool, approximately 60 sf
- Additionally, an area of concern included the asphalt paved driveway/parking lot which had a hydraulic fluid leak during decommissioning activities, approximately 300 sf

4.0 PURPOSE AND CHEMICALS OF POTENTIAL CONCERN (COPCs)

The purpose of the SAP was to assess whether the following chemicals of potential concern (COPCs) exceed the HDOH HEER office's most restrictive action levels: Tier I Environmental Action Levels (EALs) for unrestricted land use at the observatory building footprint, cesspool, additional areas of concern and/or have migrated beyond the building footprint and cesspool. All laboratory analysis was conducted per the SAP requirements.

Soils present beneath CSO Slab

- Total Petroleum Hydrocarbons (TPH) as diesel range organics (DRO) and residual range organics (RRO)
- Polychlorinated Biphenyls (PCBs)
- Lead

Cesspool walls and base

- Toxicity Characteristic Leaching Procedure (TCLP) cadmium, chromium and lead
- Total cadmium, chromium, silver and lead
- TPH as gasoline range organics (GRO), DRO and RRO
- Benzene, toluene, ethylbenzene, xylenes (BTEX)
- Polynuclear Aromatic Hydrocarbons (PAHs)
- PCBs
- Cyanide
- Volatile Organic Compounds (VOCs)

Additional Area of Concern due to Hydraulic Fluid Leak (below reportable quantity) – Soils present beneath the Asphalt Pavement Driveway/Parking Lot in the Area of the Hydraulic Fluid Leak that occurred during CSO Decommissioning Activities

- TPH as GRO, DRO and RRO
- VOCs
- PAHs
- PCBs
- Resource Conservation Recovery Act (RCRA) 8 Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Silver, Selenium, Mercury)

5.0 DECISION UNITS

Soil sampling was conducted per the SAP requirements of the following decision units (DUs). A description of each DU and sampling locations are presented in the table below:

Table A. Summary of Decision Units

SAMPLE ID/ DU	Location/Est. Size	Rational	Depth (in. bgs)
CSO DU-1A-1, 2, 3/ Layer A	Beneath CSO below-grade slab, approx. 110 cubic yards (cy)	Suspect COPC leached through concrete slab	0-6
CSO DU-1B/ Layer B	Beneath CSO below-grade slab, approx. 110 cubic yards (cy)	Suspect COPC leached through concrete slab	6-12
DU2	Soils removed from the walls of the cesspool, approx. 40 cy	Suspect COPC disposed of in cesspool	Stockpiled soils
DU3	Soils removed from the base of the cesspool, approx. 20 cy	Suspect COPC disposed of in cesspool, **no staining observed**	Stockpiled soils
DU4	Soils beneath the asphalt pavement, approx. 5 cy	Suspect COPC due to hydraulic fluid leak during CSO decommissioning activities (Leak was below the reportable quantity)	0-6

6.0 SOIL SAMPLING ACTIVITIES

LEI collected the surface, shallow subsurface and stockpile Incremental Sampling Method (ISM) soil samples for all soil sampling at the Subject Site per the SAP requirements (Enpro, 2020) and in accordance with the DOH HEER office TGM. A triplicate sample was collected from surface soils beneath the CSO below-grade concrete slab to test field precision in accordance with DOH HEER office TGM, Section 4.2.8.2. Additionally, a photoionization detector (PID) was utilized during all sampling activities to monitor total volatile organic compound (VOC) concentrations in the workspace atmosphere. PID measurements were conducted according to the SAP requirements.

Below are details of the ISM sampling at the Subject Site:

- After removal of the CSO below-grade concrete slab, ISM surface (0”-6” below ground surface [bgs]) and subsurface (6”-12” bgs) soils were collected. The decision unit (DU) sample identification numbers for the surface soils are: CSO DU-1A-1 (primary), CSO DU-1A-2 (duplicate) and CSO DU-1A-3 (Triplicate) and for subsurface soils: CSO DU-1B.

  One-hundred (100) increments were collected from each of these decision units by utilizing a stainless-steel sampling spoon per the SAP requirements.

  COPCs for the soils collected beneath the CSO concrete below-grade slab included:

  - Total Petroleum Hydrocarbons (TPH) as diesel range organics (DRO) and residual range organics (RRO)
  - Polychlorinated biphenyls (PCBs)
  - Lead

- Cesspool soil samples were collected from stockpiled soils excavated from the walls and base of the cesspool. The decision unit sample identification number for the stockpiles originating from the cesspool walls is: CSO DU2 and for the cesspool base: CSO DU3.

  Seventy-five (75) increments were collected from each of these decision units by utilizing a stainless-steel sampling spoon and Terra-core samplers.

  COPCs for the soils collected beneath the CSO concrete below-grade slab included:

  - Toxicity Characteristic Leaching Procedure (TCLP) cadmium, chromium, and lead
  - Total cadmium, chromium, silver and lead
  - TPH as gasoline range organics (GRO), DRO, RRO
  - Benzene, toluene, ethylbenzene, xylenes (BTEX)
  - Polynuclear aromatic hydrocarbons (PAHs)
  - PCBs
  - Cyanide
  - Halogenated volatile organic compounds (HVOCs)

- After removal of the asphalt paved driveway/parking lot, ISM surface (0”-6” bgs) soil samples were collected from the area of the hydraulic fluid leak which occurred during decommissioning activities. The hydraulic fluid leak occurred due to a broken hydraulic line on the excavator used during the decommissioning activities. The hydraulic fluid leak was promptly cleaned and containing by the contractor.

  The decision unit sample identification number for the surface soils is: CSO DU-4. One-hundred (100) increments were collected from the decision unit by utilizing a stainless-steel sampling spoon and Terra-core samplers.

  COPCs for the soils collected beneath the asphalt paved driveway/parking lot in the area of the hydraulic leak during decommissioning activities included:

  - Total Resource and Conservation Recovery Act (RCRA) 8 metals
  - TPH as GRO, DRO, RRO
  - BTEX
  - PAHs
  - PCBs
  - HVOCs

ISM soil sampling was chosen for the Subject Site so that reproducible data, representative of average background concentrations, can be obtained for use as reference control data. A total of five (5) DUs were identified at the Subject Site. DU boundaries were based on the SAP (Enpro, 2020) developed for the CSO decommissioning project.

The location of each increment was based on a systematic random grid that was developed during the site visit. The grid was drawn with a random starting point for even distribution across the sampling area. The systematic random sampling design provided coverage of the DU along a horizontal plane, without the gaps associated with purely random designs.

For non-volatile soil sample analysis, each increment was taken and then placed into a double-bagged Ziploc® bag. This process was repeated until all SAP required increments were collected for each decision unit.

For volatile soil sample analysis, each increment was collected with a disposable Terra-core sampler and placed into an amber glass jar containing 30 mL of a methanol preservative, for a 1:1 ratio.

Soil samples were placed in a field cooler with ice packs and sent to the analytical laboratory in Redmond, Washington.

Personnel PPE and Equipment Decontamination

All field personnel wore clean disposal nitril gloves during sample collection to avoid cross-contamination between DUs. Gloves were changed between DUs.

All sampling equipment used to collect ISM soil samples were decontaminated prior to use between DUs. The decontamination procedure for sampling equipment is as follows:

1. Clean with distilled water and brush, if necessary, to remove particulate matter and surface films.
2. Rinse thoroughly with distilled water.
3. Rinse thoroughly with Liquinox™.
4. Rinse with distilled water.

Data Quality Control and Review

In accordance with the SAP requirements and DOH policy, LEI implemented a 10% QC program, meaning that a duplicate and triplicate sample were taken for a minimum of 10% of primary samples, and submitted for chemical analysis. The duplicate and triplicate samples were taken from locations directly adjacent to and at approximately the same depth of the primary sample. The duplicate and triplicate samples were collected, handled, and analyzed using the same methods as the primary samples.

QA of samples collected in the field was ensured through the use of trained sampling personnel, documented and standardized procedures, and collection of field QC samples.

Field QC samples were analyzed for the same parameters as the primary samples. Laboratory QC samples and surrogates were analyzed according to the laboratory's SOPs.

Precision is defined as the agreement between a set of replicate measurements without assumption and knowledge of the true value. Precision was evaluated using a sample group consisting of primary, duplicate, and triplicate samples for ISM soil samples. QC samples were collected at a rate of 10% of project samples.

The mean and relative standard deviations were used to evaluate the precision of the QC sample groups. If the relative standard deviation of the sample group is less than 35%, then the reported concentrations are considered precise. For the field QC samples collected from the ISM sampling all analytes had a standard deviation less than 35% for every analyte (Table 1 and 2, Appendix I). Additionally, laboratory QC tests were all within their acceptable ranges which points to the accuracy of the reported concentrations. Therefore, the results of all analytes are considered precise.

7.0 RESULTS

Soils present beneath CSO Slab

COPCs for the surface and subsurface soils beneath the CSO concrete slab included TPH-DRO, -RRO, PCBs and lead. All COPCs for the surface and subsurface soils beneath the CSO concrete slab were not detected above the HDOH Tier 1 EALs for unrestricted land use.

Cesspool walls and base

COPCs for the stockpiled soils originated from the cesspool walls and base included TCLP-cadmium, -chromium, -lead, total-cadmium, -chromium, -silver, -lead, TPH-GRO, -DRO, -RRO, BTEX, PAHs, PCBs, Cyanide and VOCs. All COPCs for the stockpiled soils of the cesspool walls and base were not detected above the HDOH Tier 1 EALs for unrestricted land use.

Additional Area of Concern due to Hydraulic Fluid Leak (below reportable quantity) – Soils present beneath the Asphalt Pavement Driveway/Parking Lot in the Area of the Hydraulic Fluid Leak that occurred during CSO Decommissioning Activities

COPCs for the surface soils beneath the asphalt pavement driveway/parking lot in the area of the hydraulic fluid leak that occurred during CSO decommissioning activities included TPH-GRO, -DRO, -RRO, VOCs, PAHs, PCBs and RCRA 8 metals. Except as listed below in bold text, all COPCs were not detected above the HDOH Tier 1 EALs for unrestricted land use.

TPH-RRO in the sampled soils beneath the asphalt pavement driveway/parking lot in the area of the hydraulic leak that occurred during CSO decommissioning activities exceeded the HDOH Tier 1 EAL for unrestricted land use.

Tables 1 and 2 located in Appendix I summarizes the soil sampling results for the Subject Site. Figure 1 located in Appendix II identifies the decision unit locations at the Subject Site. Laboratory results are included in Appendix III.

8.0 CONCLUSIONS AND RECOMMENDATIONS

LEI recommends the following for the identified TPH-RRO-impacted soils at the Subject Site:

- The owner or operator of the facility must immediately notify the Hawai‘i State Emergency Response Commission (HSERC) (through the HEER Office) and the appropriate Local Emergency Planning Committee (LEPC) if there is a release into the environment of a hazardous substance that is equal to or exceeds the minimum reportable quantity in any 24-hour period as set forth in the regulation. Call (808) 586-4249 and following up with a written Release Notification. Additional details regarding requirements for notification can be found at: https://health.hawaii.gov/heer/reporting/how-to-report-a-release-spill/. Notification to the HEER Office should be made immediately upon confirmation of contaminated soil at concentrations that exceed Tier 1 and/or Tier 2 Environmental Action Levels and therefore pose a potential hazard to human health and/or the environment.
- Use of good general hygiene practices for tenants, public, employees and workers to avoid soil exposure.
- Limit exposure to the contaminated soils to properly trained personnel by fencing or blocking off all bare soil or patchy grass areas so that children, site workers and the general public will not be able to access bare soil or patchy grass areas.
- Prior to construction activities that disturb the TPH-RRO-impacted soils, prepare and submit for approval to the Hawaii DOH Hazard Evaluation and Emergency Response (HEER) office a Construction-Environmental Hazard Management Plan (C-EHMP) which outlines the proper handling and management of soil and/or groundwater, sampling and analysis protocol for soil, the planned re-use/disposal locations for excavated soil, health and safety measures to be taken to protect workers, environment and the general public. The C-EHMP should be approved by the Hawaii DOH HEER office prior to the start of TPH-RRO-impacted soils disturbance at the Subject Site.

  If applicable, develop a Removal Action Report (RAR) presenting the results of the removal action, based on the Removal Action Work Plan (RAWP). The RAWP is usually completed prior to initiating a removal action; however, this may not be possible in the case of emergency response. The RAR should include background information, remedial action details and description of confirmation testing to demonstrate effectiveness of the remedial action in reducing contamination levels below Tier 1 environmental action levels.
- Assume all untested soils at the Subject Site are TPH-RRO-contaminated until further testing determines otherwise.

9.0 REFERENCES

- Enpro Environmental, Sampling and Analysis Plan Draft, Caltech Submillimeter Observatory Decommissioning Project, Mauna Kea Summit, Mauna Kea, Hawaii. September 25, 2020.
- Pitard, Francis F., 1993. Pierre Gy's Sampling Theory and Sampling Practice: Heterogeneity, Sampling Correctness, and Statistical Process Control. 2nd Ed. Boca Raton, FL: CRC Press.
- Department of Health, Hazard Evaluation and Emergency Response (HEER) website, http://www.hawaiidoh.org/tgm.aspx.
- State of Hawaii, Department of Health. Update to Soil Action Levels for Inorganic Arsenic and Recommended Soil Management Practices (updates default, background arsenic soil action level presented in 2010 guidance to 24 mg/kg; arsenic exposure units in Section 3.0 table corrected to µg/day September 2012), November 2011 (updated September 2012).
- State of Hawaii, Department of Health, 2009a. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Office of Hazard Evaluation and Emergency Response. March.
- State of Hawaii, Department of Health, 2009b. Technical Guidance Manual for the Implementation of the Hawai‘i State Contingency Plan. June.
- State of Hawaii, Department of Health, 2011. Evaluation of Environmental Hazards at Sites with Contaminated Soil and Groundwater Honolulu. August.
- State of Hawaii, Department of Health, 2019. Historic Sugarcane Lands Map Viewer. Retrieved from http://www.health.hawaii.gov/epa/egis/sugarcane/.

Appendix I

TABLES OF RESULTS

Table 1. Soil Sampling Summary for May 31, 2024 Sampling
CSO Decommissioning - Cesspool

			Descriptive Sample ID	CSO DU2			CSO DU3		
			Sample Description	Cesspool Walls			Cesspool Base		
Analyte	**Laboratory Analytical Method**	**DOH EAL Unrestricted Land Use (mg/kg)**	**DOH EAL Commercial/ Industrial Land Use (mg/kg)**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**
RCRA 8 Metals - Total									
Cadmium (Cd)	EPA 6010D	14	72	ND	0.54	Pass	ND	0.56	Pass
Chromium (Cr)	EPA 6010D	1100	1100	5.8	0.54	Pass	5.2	0.56	Pass
Lead (Pb)	EPA 6010D	200	800	ND	5.4	Pass	ND	5.6	Pass
Silver (Ag)	EPA 6010D	78	1000	ND	1.1	Pass	ND	1.1	Pass
RCRA 8 Metals - TCLP									
Cadmium (Cd)	EPA 1311/6010D	EPA Limit - 1.0 mg/L		ND	0.02	Pass	ND	0.02	Pass
Chromium (Cr)	EPA 1311/6010D	EPA Limit - 5.0 mg/L		ND	0.02	Pass	ND	0.02	Pass
Lead (Pb)	EPA 1311/6010D	EPA Limit - 5.0 mg/L		ND	0.2	Pass	ND	0.2	Pass
Silver (Ag)	EPA 1311/6010D	EPA Limit - 5.0 mg/L		ND	0.04	Pass	ND	0.04	Pass
Volatile Organic Compounds (VOCs)									
VOCs (See laboratory results for details)	EPA 8260D/SIM	Various	Various	ND	Various	Pass	ND	Various	Pass
Polychlorinated Biphenyls (PCBs)									
A1016	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
A1221	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
A1232	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
A1242	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
A1248	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
A1254	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
A1260	EPA 8082A	1.2	8.6	ND	0.054	Pass	ND	0.056	Pass
Total Petroleum Hydrocarbons (TPHs)									
TPH-Diesel	EPA 8015M	220	680	ND	27	Pass	ND	28	Pass
TPH-Oil	EPA 8015M	500	1000	ND	43	Pass	150	45	Pass
TPH-Gas	EPA 8015M	100	500	ND	9	Pass	ND	14	Pass
Polycyclic Aromatic Hydrocarbons (PAHs)									
Naphthalene	EPA 8270E/3550C	4.4	4.4	ND	0.0072	Pass	ND	0.0075	Pass
2-Methylnaphthalene	EPA 8270E/3550C	4.1	4.1	ND	0.0072	Pass	ND	0.0075	Pass
1-Methylnaphthalene	EPA 8270E/3550C	4.2	4.2	ND	0.0072	Pass	ND	0.0075	Pass
Acenaphthylene	EPA 8270E/3550C	100	100	ND	0.0072	Pass	ND	0.0075	Pass
Acenaphthene	EPA 8270E/3550C	120	120	ND	0.0072	Pass	ND	0.0075	Pass
Fluorene	EPA 8270E/3550C	93	93	ND	0.0072	Pass	ND	0.0075	Pass
Phenanthrene	EPA 8270E/3550C	460	500	ND	0.0072	Pass	ND	0.0075	Pass
Anthracene	EPA 8270E/3550C	4.2	4.2	ND	0.0072	Pass	ND	0.0075	Pass
Fluoranthene	EPA 8270E/3550C	120	120	ND	0.0072	Pass	ND	0.0075	Pass
Pyrene	EPA 8270E/3550C	44	44	ND	0.0072	Pass	ND	0.0075	Pass
Benzo(a)anthracene	EPA 8270E/3550C	10	10	ND	0.0072	Pass	ND	0.0075	Pass
Chrysene	EPA 8270E/3550C	30	30	ND	0.0072	Pass	ND	0.0075	Pass
Benzo(b)fluoranthene	EPA 8270E/3550C	11	21	ND	0.0072	Pass	ND	0.0075	Pass
Benzo(k)fluoranthene	EPA 8270E/3550C	39	39	ND	0.0072	Pass	ND	0.0075	Pass
Benzo(a)pyrene	EPA 8270E/3550C	3.6	1.5	ND	0.0072	Pass	ND	0.0075	Pass
Indeno(1,2,3-cd)pyrene	EPA 8270E/3550C	11	31	ND	0.0072	Pass	ND	0.0075	Pass
Dibenzo(a,h)anthracene	EPA 8270E/3550C	1.1	18	ND	0.0072	Pass	ND	0.0075	Pass
Benzo(ghi)perylene	EPA 8270E/3550C	35	35	ND	0.0072	Pass	ND	0.0075	Pass
Other									
Cyanide	SM4500-CN-E2011	4.8	30	ND	0.037	Pass	0.235	0.029	Pass

Notes:
ND = Not detected above the laboratory detection limit
DOH = State of Hawai'i Department of Health
EPA = Environmental Protection Agency
EAL = Environmental Action Level
mg/kg = Milligrams per kilogram
NA = Not available

Table 2. Soil Sampling Summary for June 11, 2024 Sampling
CSO Decommissioning - CSO Slab and Asphalt Driveway/Parking Area

			Descriptive Sample ID	CSO DU-1A-1			CSO DU-1A-2		
			Sample Description	Under CSO Slab (0"-6" bss)			Under CSO Slab (0"-6" bss)		
Analyte	**Laboratory Analytical Method**	**DOH EAL Unrestricted Land Use (mg/kg)**	**DOH EAL Commercial/ Industrial Land Use (mg/kg)**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**
RCRA 8 Metals - Total									
Arsenic	EPA 6010D/7471B	24	95	NA	NA	NA	NA	NA	NA
Barium	EPA 6010D/7471B	1000	2500	NA	NA	NA	NA	NA	NA
Cadmium	EPA 6010D/7471B	14	72	NA	NA	NA	NA	NA	NA
Chromium	EPA 6010D/7471B	1100	1100	NA	NA	NA	NA	NA	NA
Lead	EPA 6010D/7471B	200	800	ND	5.2	Pass	ND	5.2	Pass
Silver	EPA 6010D/7471B	78	1000	NA	NA	NA	NA	NA	NA
Selenium	EPA 6010D/7471B	78	1000	NA	NA	NA	NA	NA	NA
Mercury	EPA 6010D/7471B	4.7	61	NA	NA	NA	NA	NA	NA
RCRA Metals - TCLP									
Lead (Pb)	EPA 1311/6010D	EPA Limit - 5.0 mg/L		ND	0.2	Pass	ND	0.2	Pass
Volatile Organic Compounds (VOCs)									
VOCs (See laboratory results for details)	EPA 8260D/SIM	Various	Various	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (PCBs)									
A1016	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1221	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1232	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1242	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1248	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1254	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1260	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
Total Petroleum Hydrocarbons (TPHs)									
TPH-Diesel	EPA 8015M	220	680	ND	26	Pass	ND	26	Pass
TPH-Oil	EPA 8015M	500	1000	ND	52	Pass	ND	52	Pass
TPH-Gas	EPA 8015M	100	500	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons (PAHs)									
Naphthalene	EPA 8270E/3550C	4.4	4.4	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	EPA 8270E/3550C	4.1	4.1	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	EPA 8270E/3550C	4.2	4.2	NA	NA	NA	NA	NA	NA
Acenaphthylene	EPA 8270E/3550C	100	100	NA	NA	NA	NA	NA	NA
Acenaphthene	EPA 8270E/3550C	120	120	NA	NA	NA	NA	NA	NA
Fluorene	EPA 8270E/3550C	93	93	NA	NA	NA	NA	NA	NA
Phenanthrene	EPA 8270E/3550C	460	500	NA	NA	NA	NA	NA	NA
Anthracene	EPA 8270E/3550C	4.2	4.2	NA	NA	NA	NA	NA	NA
Fluoranthene	EPA 8270E/3550C	120	120	NA	NA	NA	NA	NA	NA
Pyrene	EPA 8270E/3550C	44	44	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	EPA 8270E/3550C	10	10	NA	NA	NA	NA	NA	NA
Chrysene	EPA 8270E/3550C	30	30	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	EPA 8270E/3550C	11	21	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	EPA 8270E/3550C	39	39	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	EPA 8270E/3550C	3.6	1.5	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	EPA 8270E/3550C	11	31	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	EPA 8270E/3550C	1.1	18	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	EPA 8270E/3550C	35	35	NA	NA	NA	NA	NA	NA
Other									
Cyanide	SM4500-CN	4.8	30	NA	NA	NA	NA	NA	NA

Notes:
ND = Not detected above the laboratory detection limit
DOH = State of Hawai'i Department of Health
EPA = Environmental Protection Agency
bss = below soil surface
EAL = Environmental Action Level
mg/kg = Milligrams per kilogram
NA = Not available

Table 2. Soil Sampling Summary for June 11, 2024 Sampling
CSO Decommissioning - CSO Slab and Asphalt Driveway/Parking Area

			Descriptive Sample ID	CSO DU-1A-3			CSO DU-1B		
			Sample Description	Under CSO Slab (0"-6" bss)			Under CSO Slab (6"-12" bss)		
Analyte	**Laboratory Analytical Method**	**DOH EAL Unrestricted Land Use (mg/kg)**	**DOH EAL Commercial/ Industrial Land Use (mg/kg)**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**
RCRA 8 Metals - Total									
Arsenic	EPA 6010D/7471B	24	95	NA	NA	NA	NA	NA	NA
Barium	EPA 6010D/7471B	1000	2500	NA	NA	NA	NA	NA	NA
Cadmium	EPA 6010D/7471B	14	72	NA	NA	NA	NA	NA	NA
Chromium	EPA 6010D/7471B	1100	1100	NA	NA	NA	NA	NA	NA
Lead	EPA 6010D/7471B	200	800	ND	5.2	Pass	ND	5.2	Pass
Silver	EPA 6010D/7471B	78	1000	NA	NA	NA	NA	NA	NA
Selenium	EPA 6010D/7471B	78	1000	NA	NA	NA	NA	NA	NA
Mercury	EPA 6010D/7471B	4.7	61	NA	NA	NA	NA	NA	NA
RCRA Metals - TCLP									
Lead (Pb)	EPA 1311/6010D	EPA Limit - 5.0 mg/L		ND	0.2	Pass	ND	0.2	Pass
Volatile Organic Compounds (VOCs)									
VOCs (See laboratory results for details)	EPA 8260D/SIM	Various	Various	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (PCBs)									
A1016	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1221	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1232	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1242	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1248	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1254	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
A1260	EPA 8082A	1.2	8.6	ND	0.052	Pass	ND	0.052	Pass
Total Petroleum Hydrocarbons (TPHs)									
TPH-Diesel	EPA 8015M	220	680	ND	26	Pass	ND	26	Pass
TPH-Oil	EPA 8015M	500	1000	ND	52	Pass	ND	53	Pass
TPH-Gas	EPA 8015M	100	500	NA	NA	NA	NA	NA	NA
Polycyclic Aromatic Hydrocarbons (PAHs)									
Naphthalene	EPA 8270E/3550C	4.4	4.4	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	EPA 8270E/3550C	4.1	4.1	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	EPA 8270E/3550C	4.2	4.2	NA	NA	NA	NA	NA	NA
Acenaphthylene	EPA 8270E/3550C	100	100	NA	NA	NA	NA	NA	NA
Acenaphthene	EPA 8270E/3550C	120	120	NA	NA	NA	NA	NA	NA
Fluorene	EPA 8270E/3550C	93	93	NA	NA	NA	NA	NA	NA
Phenanthrene	EPA 8270E/3550C	460	500	NA	NA	NA	NA	NA	NA
Anthracene	EPA 8270E/3550C	4.2	4.2	NA	NA	NA	NA	NA	NA
Fluoranthene	EPA 8270E/3550C	120	120	NA	NA	NA	NA	NA	NA
Pyrene	EPA 8270E/3550C	44	44	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	EPA 8270E/3550C	10	10	NA	NA	NA	NA	NA	NA
Chrysene	EPA 8270E/3550C	30	30	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	EPA 8270E/3550C	11	21	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	EPA 8270E/3550C	39	39	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	EPA 8270E/3550C	3.6	1.5	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	EPA 8270E/3550C	11	31	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	EPA 8270E/3550C	1.1	18	NA	NA	NA	NA	NA	NA
Benzo(ghi)perylene	EPA 8270E/3550C	35	35	NA	NA	NA	NA	NA	NA
Other									
Cyanide	SM4500-CN	4.8	30	NA	NA	NA	NA	NA	NA

Notes:
ND = Not detected above the laboratory detection limit
DOH = State of Hawai'i Department of Health
EPA = Environmental Protection Agency
bss = below soil surface
EAL = Environmental Action Level
mg/kg = Milligrams per kilogram
NA = Not available

Table 2. Soil Sampling Summary for June 11, 2024 Sampling
CSO Decommissioning - CSO Slab and Asphalt Driveway/Parking Area

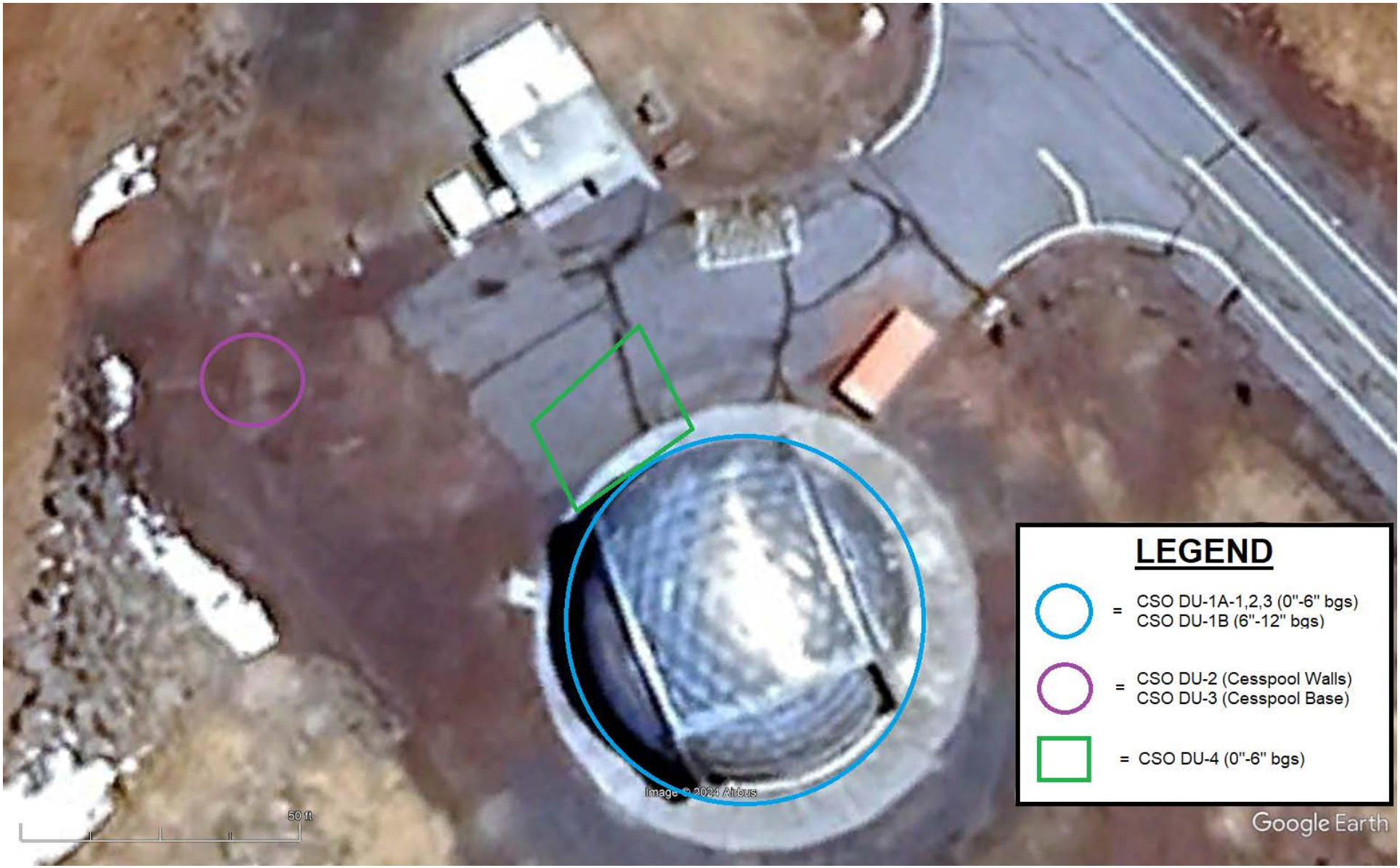
			Descriptive Sample ID	CSO DU-4		
			Sample Description	Under Asphalt Driveway/ Parking Area (0"-6" bss)		
Analyte	**Laboratory Analytical Method**	**DOH EAL Unrestricted Land Use (mg/kg)**	**DOH EAL Commercial/ Industrial Land Use (mg/kg)**	**Result (mg/kg)**	**Practical Quantitation Limit (PQL) (mg/kg)**	**Pass/Fail**
RCRA 8 Metals - Total						
Arsenic	EPA 6010D/7471B	24	95	ND	10	Pass
Barium	EPA 6010D/7471B	1000	2500	120	2.6	Pass
Cadmium	EPA 6010D/7471B	14	72	ND	0.52	Pass
Chromium	EPA 6010D/7471B	1100	1100	6.6	0.52	Pass
Lead	EPA 6010D/7471B	200	800	ND	5.2	Pass
Silver	EPA 6010D/7471B	78	1000	ND	0.26	Pass
Selenium	EPA 6010D/7471B	78	1000	ND	10	Pass
Mercury	EPA 6010D/7471B	4.7	61	ND	1	Pass
RCRA Metals - TCLP						
Lead (Pb)	EPA 1311/6010D	EPA Limit - 5.0 mg/L		ND	0.2	Pass
Volatile Organic Compounds (VOCs)						
VOCs (See laboratory results for details)	EPA 8260D/SIM	Various	Various	ND	Various	Pass
Polychlorinated Biphenyls (PCBs)						
A1016	EPA 8082A	1.2	8.6	ND	0.052	Pass
A1221	EPA 8082A	1.2	8.6	ND	0.052	Pass
A1232	EPA 8082A	1.2	8.6	ND	0.052	Pass
A1242	EPA 8082A	1.2	8.6	ND	0.052	Pass
A1248	EPA 8082A	1.2	8.6	ND	0.052	Pass
A1254	EPA 8082A	1.2	8.6	ND	0.052	Pass
A1260	EPA 8082A	1.2	8.6	ND	0.052	Pass
Total Petroleum Hydrocarbons (TPHs)						
TPH-Diesel	EPA 8015M	220	680	ND	83	Pass
TPH-Oil	EPA 8015M	500	1000	**540**	**53**	**Fail**
TPH-Gas	EPA 8015M	100	500	ND	9.5	Pass
Polycyclic Aromatic Hydrocarbons (PAHs)						
Naphthalene	EPA 8270E/3550C	4.4	4.4	ND	0.007	Pass
2-Methylnaphthalene	EPA 8270E/3550C	4.1	4.1	ND	0.007	Pass
1-Methylnaphthalene	EPA 8270E/3550C	4.2	4.2	ND	0.007	Pass
Acenaphthylene	EPA 8270E/3550C	100	100	ND	0.007	Pass
Acenaphthene	EPA 8270E/3550C	120	120	ND	0.007	Pass
Fluorene	EPA 8270E/3550C	93	93	ND	0.007	Pass
Phenanthrene	EPA 8270E/3550C	460	500	0.0085	0.007	Pass
Anthracene	EPA 8270E/3550C	4.2	4.2	ND	0.007	Pass
Fluoranthene	EPA 8270E/3550C	120	120	ND	0.007	Pass
Pyrene	EPA 8270E/3550C	44	44	0.0076	0.007	Pass
Benzo(a)anthracene	EPA 8270E/3550C	10	10	ND	0.007	Pass
Chrysene	EPA 8270E/3550C	30	30	0.0073	0.007	Pass
Benzo(b)fluoranthene	EPA 8270E/3550C	11	21	ND	0.007	Pass
Benzo(k)fluoranthene	EPA 8270E/3550C	39	39	ND	0.007	Pass
Benzo(a)pyrene	EPA 8270E/3550C	3.6	1.5	ND	0.007	Pass
Indeno(1,2,3-cd)pyrene	EPA 8270E/3550C	11	31	ND	0.007	Pass
Dibenzo(a,h)anthracene	EPA 8270E/3550C	1.1	18	ND	0.007	Pass
Benzo(ghi)perylene	EPA 8270E/3550C	35	35	ND	0.007	Pass
Other						
Cyanide	SM4500-CN	4.8	30	NA	NA	NA

Notes:
ND = Not detected above the laboratory detection limit
DOH = State of Hawai'i Department of Health
EPA = Environmental Protection Agency
bss = below soil surface
EAL = Environmental Action Level
mg/kg = Milligrams per kilogram
NA = Not available

Appendix II

FIGURE 1: DECISION UNIT (DU) BOUNDARIES MAP

Figure 1. Decision Unit (DU) Boundaries
CSO Decommissioning Project
Mauna Kea, Big Island, Hawaii



Appendix III

SOIL LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 18, 2024

Kama Kobayashi
Lehua Environmental Inc.
P.O. Box 1018
Kamuela, HI 96743

Re: Analytical Data for Project 2024-243-2
Laboratory Reference No. 2406-162

Dear Kama:

Enclosed are the analytical results and associated quality control data for samples submitted on June 13, 2024.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

Case Narrative

Samples were collected on June 11, 2024 and received by the laboratory on June 13, 2024. Samples were shipped in a cooler packed with blue ice and arrived at a temperature of <6°C. They were maintained at the laboratory at a temperature of 2°C to 6°C. A copy of the cooler receipt form has been included with this report.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below. However the soil results for the QA/QC samples are reported on a wet-weight basis.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

All samples were processed in the laboratory following the multi-increment sampling procedures as outlined in the HEER-TGM. Additional notes will be addressed in appropriate sections as warranted.

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

DIESEL AND HEAVY OIL RANGE ORGANICS
EPA 8015M

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-1A-1**					
Laboratory ID:	06-162-01					
Diesel Range Organics	**ND**	26	EPA 8015M	6-17-24	6-17-24	
Residual Range Organics	**ND**	52	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				
Client ID:	**CSO DU-1A-2**					
Laboratory ID:	06-162-02					
Diesel Range Organics	**ND**	26	EPA 8015M	6-17-24	6-17-24	
Residual Range Organics	**ND**	52	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**CSO DU-1A-3**					
Laboratory ID:	06-162-03					
Diesel Range Organics	**ND**	26	EPA 8015M	6-17-24	6-17-24	
Residual Range Organics	**ND**	52	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**CSO DU-1B**					
Laboratory ID:	06-162-04					
Diesel Range Organics	**ND**	26	EPA 8015M	6-17-24	6-18-24	
Residual Range Organics	**ND**	53	EPA 8015M	6-17-24	6-18-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*55*	*50-150*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

DIESEL AND HEAVY OIL RANGE ORGANICS
EPA 8015M
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S1					
Diesel Range Organics	**ND**	25	EPA 8015M	6-17-24	6-17-24	
Residual Range Organics	**ND**	50	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-183-02										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	40	
Residual Range	**ND**	**ND**	NA	NA		NA		NA	NA	40	
Surrogate:											
o-Terphenyl						*75*	*75*	*50-150*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-1A-1**					
Laboratory ID:	06-162-01					
Aroclor 1016	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1221	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1232	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1242	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1248	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1254	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1260	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1262	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1268	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*91*	*40-134*				
Client ID:	**CSO DU-1A-2**					
Laboratory ID:	06-162-02					
Aroclor 1016	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1221	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1232	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1242	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1248	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1254	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1260	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1262	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1268	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*101*	*40-134*				
Client ID:	**CSO DU-1A-3**					
Laboratory ID:	06-162-03					
Aroclor 1016	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1221	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1232	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1242	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1248	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1254	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1260	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1262	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Aroclor 1268	**ND**	0.052	EPA 8082A	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*104*	*40-134*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-1B**					
Laboratory ID:	06-162-04					
Aroclor 1016	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1221	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1232	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1242	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1248	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1254	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1260	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1262	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1268	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*83*	*40-134*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1221	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1232	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1242	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1248	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1254	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1260	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1262	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1268	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*102*	*40-134*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0617S1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.394**	**0.452**	0.500	0.500	N/A	**79**	**90**	60-115	14	23	
Surrogate:											
DCB						*102*	*107*	*40-134*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

TOTAL LEAD
EPA 6010D

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-1A-1**					
Laboratory ID:	06-162-01					
Lead	**ND**	5.2	EPA 6010D	6-17-24	6-17-24	
Client ID:	**CSO DU-1A-2**					
Laboratory ID:	06-162-02					
Lead	**ND**	5.2	EPA 6010D	6-17-24	6-17-24	
Client ID:	**CSO DU-1A-3**					
Laboratory ID:	06-162-03					
Lead	**ND**	5.2	EPA 6010D	6-17-24	6-17-24	
Client ID:	**CSO DU-1B**					
Laboratory ID:	06-162-04					
Lead	**ND**	5.2	EPA 6010D	6-17-24	6-17-24	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

TOTAL LEAD
EPA 6010D
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617SM1					
Lead	**ND**	5.0	EPA 6010D	6-17-24	6-17-24	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-169-13										
	ORIG	DUP									
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	06-169-13										
	MS	MSD	MS	MSD		MS	MSD				
Lead	**240**	**237**	250	250	ND	**96**	**95**	75-125	1	20	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

TCLP LEAD
EPA 1311/6010D

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-1A-1**					
Laboratory ID:	06-162-01					
Lead	**ND**	0.20	EPA 6010D	6-18-24	6-18-24	
Client ID:	**CSO DU-1A-2**					
Laboratory ID:	06-162-02					
Lead	**ND**	0.20	EPA 6010D	6-18-24	6-18-24	
Client ID:	**CSO DU-1A-3**					
Laboratory ID:	06-162-03					
Lead	**ND**	0.20	EPA 6010D	6-18-24	6-18-24	
Client ID:	**CSO DU-1B**					
Laboratory ID:	06-162-04					
Lead	**ND**	0.20	EPA 6010D	6-18-24	6-18-24	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

TCLP LEAD
EPA 1311/6010D
QUALITY CONTROL

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0618TM1					
Lead	**ND**	0.20	EPA 6010D	6-18-24	6-18-24	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-162-01										
	ORIG	DUP									
Lead	**ND**	**ND**	NA	NA		NA		NA	NA	20	
MATRIX SPIKES											
Laboratory ID:	06-162-01										
	MS	MSD	MS	MSD		MS	MSD				
Lead	**10.7**	**10.7**	10.0	10.0	ND	**107**	**107**	75-125	0	20	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-162
Project: 2024-243-2

% MOISTURE
MULTI-INCREMENT SAMPLING

Client ID	Lab ID	% Moisture	Date Analyzed
CSO DU-1A-1	06-162-01	**4**	6-17-24
CSO DU-1A-2	06-162-02	**4**	6-17-24
CSO DU-1A-3	06-162-03	**4**	6-17-24
CSO DU-1B	06-162-04	**5**	6-17-24

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: LEHUA ENVIRONMENTAL INC.
Project Number: 2024-243-2
Project Name: CSO DECOMMISSIONING - CSO Slab
Project Manager: KAMA KOBAYASHI
Sampled by: CALVIN ARCA

Turnaround Request (in working days)
(Check One)
☐ Same Day ☒ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days)
☐ _____ (other)

Laboratory Number: 06-162

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up) EPA 8015	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals Lead	Total MTCA Metals	TCLP Metals Lead	HEM (oil and grease) 1664A	Multi-incremental sample preparation Non-Volatile				% Moisture
1	CSO DU-1A-1	6-11-24		S	1				X						X				X		X		X				10
2	CSO DU-1A-2	6-11-24		↓	1				X						X				X		X		X				↓
3	CSO DU-1A-3	6-11-24			1				X						X				X		X		X				
4	CSO DU-1B	6-11-24			1				X						X				X		X		X				

	Signature	Company	Date	Time
Relinquished		LEHUA ENVIRONMENTAL INC.	6-12-24	12:00pm
Received		ONE	6/13/24	1000
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Sample/Cooler Receipt and Acceptance Checklist

Client: UEI

Client Project Name/Number: 2024-243-2

OnSite Project Number: 06-162

Initiated by: JMV

Date Initiated: 6/13/24

1.0 Cooler Verification

1.1 Were there custody seals on the outside of the cooler?	Yes	(No)	N/A	1 2 3 4	
1.2 Were the custody seals intact?	Yes	No	(N/A)	1 2 3 4	
1.3 Were the custody seals signed and dated by last custodian?	Yes	No	(N/A)	1 2 3 4	
1.4 Were the samples delivered on ice or blue ice?	(Yes)	No	N/A	1 2 3 4	
1.5 Were samples received between 0-6 degrees Celsius?	(Yes)	No	N/A	Temperature:	6
1.6 Have shipping bills (if any) been attached to the back of this form?	(Yes)	N/A			
1.7 How were the samples delivered?	Client	Courier	(UPS/FedEx)	OSE Pickup	Other

2.0 Chain of Custody Verification

2.1 Was a Chain of Custody submitted with the samples?	(Yes)	No		1 2 3 4
2.2 Was the COC legible and written in permanent ink?	(Yes)	No		1 2 3 4
2.3 Have samples been relinquished and accepted by each custodian?	(Yes)	No		1 2 3 4
2.4 Did the sample labels (ID, date, time, preservative) agree with COC?	(Yes)	No		1 2 3 4
2.5 Were all of the samples listed on the COC submitted?	(Yes)	No		1 2 3 4
2.6 Were any of the samples submitted omitted from the COC?	Yes	(No)		1 2 3 4

3.0 Sample Verification

3.1 Were any sample containers broken or compromised?	Yes	(No)		1 2 3 4
3.2 Were any sample labels missing or illegible?	Yes	(No)		1 2 3 4
3.3 Have the correct containers been used for each analysis requested?	(Yes)	No		1 2 3 4
3.4 Have the samples been correctly preserved?	Yes	No	(N/A)	1 2 3 4
3.5 Are volatiles samples free from headspace and bubbles greater than 6mm?	Yes	No	(N/A)	1 2 3 4
3.6 Is there sufficient sample submitted to perform requested analyses?	(Yes)	No		1 2 3 4
3.7 Have any holding times already expired or will expire in 24 hours?	Yes	(No)		1 2 3 4
3.8 Was method 5035A used?	Yes	No	(N/A)	1 2 3 4
3.9 If 5035A was used, which sampling option was used (#1, 2, or 3).	#		(N/A)	1 2 3 4

Explain any discrepancies:

1 - Discuss issue in Case Narrative

2 - Process Sample As-is

3 - Client contacted to discuss problem

4 - Sample cannot be analyzed or client does not wish to proceed

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 1, 2024

Kama Kobayashi
Lehua Environmental Inc.
P.O. Box 1018
Kamuela, HI 96743

Re: Analytical Data for Project 2024-243
Laboratory Reference No. 2406-039

Dear Kama:

Enclosed are the analytical results and associated quality control data for samples submitted on June 5, 2024.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

Case Narrative

Samples were collected on May 31 and June 3, 2024 and received by the laboratory on June 5, 2024. Samples were shipped in a cooler packed with blue ice and arrived at a temperature of <6°C. They were maintained at the laboratory at a temperature of 2°C to 6°C. A copy of the cooler receipt form has been included with this report.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below. However the soil results for the QA/QC samples are reported on a wet-weight basis.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

All samples were processed in the laboratory following the multi-increment sampling procedures as outlined in the HEER-TGM. Additional notes will be addressed in appropriate sections as warranted.

Volatiles EPA 8260D Analysis

The percent recovery for Bromomethane is outside the control limits in the Spike Blank and Spike Blank Duplicate. The method allows for a percentage of the compounds to fall outside of the control limits due to the large number of analytes being spiked.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

GASOLINE RANGE ORGANICS
EPA 8015M

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Gasoline	**ND**	9.0	EPA 8015M	6-6-24	6-6-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*111*	*62-134*				
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Gasoline	**ND**	14	EPA 8015M	6-6-24	6-6-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*62-134*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

GASOLINE RANGE ORGANICS
EPA 8015M
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606S1					
Gasoline	**ND**	5.0	EPA 8015M	6-6-24	6-6-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*62-134*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-039-01										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*111*	*117*	*62-134*			

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

DIESEL AND HEAVY OIL RANGE ORGANICS
EPA 8015M

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Diesel Range Organics	**ND**	27	EPA 8015M	6-11-24	6-11-24	
Residual Range Organics	**ND**	43	EPA 8015M	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*75*	*50-150*				
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Diesel Range Organics	**ND**	28	EPA 8015M	6-11-24	6-11-24	
Residual Range Organics	**150**	45	EPA 8015M	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

DIESEL AND HEAVY OIL RANGE ORGANICS
EPA 8015M
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0611S1					
Diesel Range Organics	**ND**	25	EPA 8015M	6-11-24	6-11-24	
Residual Range Organics	**ND**	40	EPA 8015M	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-090-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	40	
Residual Range Organics	**65.8**	**49.8**	NA	NA		NA		NA	28	40	
Surrogate:											
o-Terphenyl						*76*	*77*	*50-150*			

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Dichlorodifluoromethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Chloromethane	ND	0.45	EPA 8260D	6-6-24	6-6-24	
Vinyl Chloride (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
Bromomethane	ND	0.45	EPA 8260D	6-6-24	6-6-24	
Chloroethane	ND	0.45	EPA 8260D	6-6-24	6-6-24	
Trichlorofluoromethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloroethene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Iodomethane	ND	0.91	EPA 8260D	6-6-24	6-6-24	
Methylene Chloride	ND	0.45	EPA 8260D	6-6-24	6-6-24	
(trans) 1,2-Dichloroethene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloroethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
2,2-Dichloropropane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
(cis) 1,2-Dichloroethene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Bromochloromethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Chloroform (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
1,1,1-Trichloroethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Carbon Tetrachloride	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloropropene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Benzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,2-Dichloroethane (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
Trichloroethene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,2-Dichloropropane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Dibromomethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Bromodichloromethane (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
2-Chloroethyl Vinyl Ether	ND	0.64	EPA 8260D	6-6-24	6-6-24	
(cis) 1,3-Dichloropropene (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
Toluene	ND	0.45	EPA 8260D	6-6-24	6-6-24	
(trans) 1,3-Dichloropropene (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
1,1,2-Trichloroethane (SIM)	ND	0.0091	EPA 8260D/SIM	6-6-24	6-6-24	
Tetrachloroethene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,3-Dichloropropane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Dibromochloromethane (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
1,2-Dibromoethane (SIM)	ND	0.0045	EPA 8260D/SIM	6-6-24	6-6-24	
Chlorobenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,1,1,2-Tetrachloroethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Ethylbenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
m,p-Xylene	ND	0.18	EPA 8260D	6-6-24	6-6-24	
o-Xylene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Bromoform	ND	0.45	EPA 8260D	6-6-24	6-6-24	
Bromobenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,1,2,2-Tetrachloroethane	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,2,3-Trichloropropane (SIM)	ND	0.0091	EPA 8260D/SIM	6-6-24	6-6-24	
2-Chlorotoluene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
4-Chlorotoluene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,3-Dichlorobenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,4-Dichlorobenzene (SIM)	ND	0.0091	EPA 8260D/SIM	6-6-24	6-6-24	
1,2-Dichlorobenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
1,2-Dibromo-3-chloropropane (SIM)	ND	0.013	EPA 8260D/SIM	6-6-24	6-6-24	
1,2,4-Trichlorobenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Hexachlorobutadiene (SIM)	ND	0.0091	EPA 8260D/SIM	6-6-24	6-6-24	
1,2,3-Trichlorobenzene	ND	0.091	EPA 8260D	6-6-24	6-6-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*91*	*69-124*				
Toluene-d8	*108*	*80-118*				
4-Bromofluorobenzene	*92*	*75-123*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Dichlorodifluoromethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Chloromethane	ND	0.72	EPA 8260D	6-6-24	6-6-24	
Vinyl Chloride (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
Bromomethane	ND	0.72	EPA 8260D	6-6-24	6-6-24	
Chloroethane	ND	0.72	EPA 8260D	6-6-24	6-6-24	
Trichlorofluoromethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloroethene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Iodomethane	ND	1.4	EPA 8260D	6-6-24	6-6-24	
Methylene Chloride	ND	0.72	EPA 8260D	6-6-24	6-6-24	
(trans) 1,2-Dichloroethene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloroethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
2,2-Dichloropropane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
(cis) 1,2-Dichloroethene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Bromochloromethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Chloroform (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
1,1,1-Trichloroethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Carbon Tetrachloride	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloropropene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Benzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,2-Dichloroethane (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
Trichloroethene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,2-Dichloropropane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Dibromomethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Bromodichloromethane (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
2-Chloroethyl Vinyl Ether	ND	1.0	EPA 8260D	6-6-24	6-6-24	
(cis) 1,3-Dichloropropene (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
Toluene	ND	0.72	EPA 8260D	6-6-24	6-6-24	
(trans) 1,3-Dichloropropene (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
1,1,2-Trichloroethane (SIM)	ND	0.014	EPA 8260D/SIM	6-6-24	6-6-24	
Tetrachloroethene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,3-Dichloropropane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Dibromochloromethane (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
1,2-Dibromoethane (SIM)	ND	0.0072	EPA 8260D/SIM	6-6-24	6-6-24	
Chlorobenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,1,1,2-Tetrachloroethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Ethylbenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
m,p-Xylene	ND	0.29	EPA 8260D	6-6-24	6-6-24	
o-Xylene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Bromoform	ND	0.72	EPA 8260D	6-6-24	6-6-24	
Bromobenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,1,2,2-Tetrachloroethane	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,2,3-Trichloropropane (SIM)	ND	0.014	EPA 8260D/SIM	6-6-24	6-6-24	
2-Chlorotoluene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
4-Chlorotoluene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,3-Dichlorobenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,4-Dichlorobenzene (SIM)	ND	0.014	EPA 8260D/SIM	6-6-24	6-6-24	
1,2-Dichlorobenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
1,2-Dibromo-3-chloropropane (SIM)	ND	0.020	EPA 8260D/SIM	6-6-24	6-6-24	
1,2,4-Trichlorobenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Hexachlorobutadiene (SIM)	ND	0.014	EPA 8260D/SIM	6-6-24	6-6-24	
1,2,3-Trichlorobenzene	ND	0.14	EPA 8260D	6-6-24	6-6-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*88*	*69-124*				
Toluene-d8	*108*	*80-118*				
4-Bromofluorobenzene	*75*	*75-123*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606S2					
Dichlorodifluoromethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Chloromethane	ND	0.25	EPA 8260D	6-6-24	6-6-24	
Vinyl Chloride (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
Bromomethane	ND	0.25	EPA 8260D	6-6-24	6-6-24	
Chloroethane	ND	0.25	EPA 8260D	6-6-24	6-6-24	
Trichlorofluoromethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloroethene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Iodomethane	ND	0.50	EPA 8260D	6-6-24	6-6-24	
Methylene Chloride	ND	0.25	EPA 8260D	6-6-24	6-6-24	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloroethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
2,2-Dichloropropane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Bromochloromethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Chloroform (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
1,1,1-Trichloroethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Carbon Tetrachloride	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,1-Dichloropropene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Benzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,2-Dichloroethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
Trichloroethene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,2-Dichloropropane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Dibromomethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Bromodichloromethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0606S2					
2-Chloroethyl Vinyl Ether	ND	0.35	EPA 8260D	6-6-24	6-6-24	
(cis) 1,3-Dichloropropene (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
Toluene	ND	0.25	EPA 8260D	6-6-24	6-6-24	
(trans) 1,3-Dichloropropene (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
1,1,2-Trichloroethane (SIM)	ND	0.0050	EPA 8260D/SIM	6-6-24	6-6-24	
Tetrachloroethene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,3-Dichloropropane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Dibromochloromethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
1,2-Dibromoethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-6-24	6-6-24	
Chlorobenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Ethylbenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
m,p-Xylene	ND	0.10	EPA 8260D	6-6-24	6-6-24	
o-Xylene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Bromoform	ND	0.25	EPA 8260D	6-6-24	6-6-24	
Bromobenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,2,3-Trichloropropane (SIM)	ND	0.0050	EPA 8260D/SIM	6-6-24	6-6-24	
2-Chlorotoluene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
4-Chlorotoluene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,3-Dichlorobenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,4-Dichlorobenzene (SIM)	ND	0.0050	EPA 8260D/SIM	6-6-24	6-6-24	
1,2-Dichlorobenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
1,2-Dibromo-3-chloropropane (SIM)	ND	0.0070	EPA 8260D/SIM	6-6-24	6-6-24	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Hexachlorobutadiene (SIM)	ND	0.0050	EPA 8260D/SIM	6-6-24	6-6-24	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260D	6-6-24	6-6-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*92*	*69-124*				
Toluene-d8	*109*	*80-118*				
4-Bromofluorobenzene	*107*	*75-123*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0606S1									
	SB	SBD	SB	SBD	SB	SBD				
Dichlorodifluoromethane	**0.0487**	**0.0479**	0.0500	0.0500	97	96	24-162	2	24	
Chloromethane	**0.0508**	**0.0527**	0.0500	0.0500	102	105	41-143	4	22	
Vinyl Chloride	**0.0540**	**0.0551**	0.0500	0.0500	108	110	52-141	2	20	
Bromomethane	**0.0924**	**0.0888**	0.0500	0.0500	185	178	37-145	4	23	I,I
Chloroethane	**0.0619**	**0.0635**	0.0500	0.0500	124	127	54-148	3	19	
Trichlorofluoromethane	**0.0574**	**0.0588**	0.0500	0.0500	115	118	65-142	2	18	
1,1-Dichloroethene	**0.0588**	**0.0615**	0.0500	0.0500	118	123	74-133	4	16	
Iodomethane	**0.0487**	**0.0467**	0.0500	0.0500	97	93	36-133	4	31	
Methylene Chloride	**0.0471**	**0.0521**	0.0500	0.0500	94	104	60-135	10	23	
(trans) 1,2-Dichloroethene	**0.0581**	**0.0604**	0.0500	0.0500	116	121	74-131	4	15	
1,1-Dichloroethane	**0.0586**	**0.0597**	0.0500	0.0500	117	119	74-130	2	15	
2,2-Dichloropropane	**0.0589**	**0.0685**	0.0500	0.0500	118	137	74-137	15	16	
(cis) 1,2-Dichloroethene	**0.0571**	**0.0635**	0.0500	0.0500	114	127	71-136	11	15	
Bromochloromethane	**0.0436**	**0.0469**	0.0500	0.0500	87	94	78-128	7	15	
Chloroform	**0.0557**	**0.0578**	0.0500	0.0500	111	116	75-128	4	15	
1,1,1-Trichloroethane	**0.0574**	**0.0589**	0.0500	0.0500	115	118	73-129	3	15	
Carbon Tetrachloride	**0.0499**	**0.0547**	0.0500	0.0500	100	109	69-134	9	15	
1,1-Dichloropropene	**0.0554**	**0.0619**	0.0500	0.0500	111	124	73-127	11	15	
Benzene	**0.0577**	**0.0606**	0.0500	0.0500	115	121	75-126	5	15	
1,2-Dichloroethane	**0.0481**	**0.0519**	0.0500	0.0500	96	104	70-133	8	15	
Trichloroethene	**0.0545**	**0.0529**	0.0500	0.0500	109	106	80-130	3	15	
1,2-Dichloropropane	**0.0588**	**0.0610**	0.0500	0.0500	118	122	78-131	4	16	
Dibromomethane	**0.0456**	**0.0491**	0.0500	0.0500	91	98	72-136	7	28	
Bromodichloromethane	**0.0577**	**0.0583**	0.0500	0.0500	115	117	80-129	1	15	
(cis) 1,3-Dichloropropene	**0.0572**	**0.0621**	0.0500	0.0500	114	124	80-132	8	17	
Toluene	**0.0581**	**0.0590**	0.0500	0.0500	116	118	78-124	2	17	
(trans) 1,3-Dichloropropene	**0.0584**	**0.0600**	0.0500	0.0500	117	120	80-130	3	15	

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 2 of 2

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0606S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1,2-Trichloroethane	**0.0465**	**0.0510**	0.0500	0.0500	93	102	80-123	9	15	
Tetrachloroethene	**0.0621**	**0.0612**	0.0500	0.0500	124	122	80-130	1	15	
1,3-Dichloropropane	**0.0522**	**0.0566**	0.0500	0.0500	104	113	80-122	8	15	
Dibromochloromethane	**0.0476**	**0.0486**	0.0500	0.0500	95	97	80-129	2	15	
1,2-Dibromoethane	**0.0443**	**0.0478**	0.0500	0.0500	89	96	80-125	8	15	
Chlorobenzene	**0.0496**	**0.0500**	0.0500	0.0500	99	100	80-119	1	15	
1,1,1,2-Tetrachloroethane	**0.0505**	**0.0533**	0.0500	0.0500	101	107	80-124	5	15	
Ethylbenzene	**0.0581**	**0.0593**	0.0500	0.0500	116	119	80-120	2	15	
m,p-Xylene	**0.117**	**0.117**	0.100	0.100	117	117	80-121	0	15	
o-Xylene	**0.0584**	**0.0591**	0.0500	0.0500	117	118	80-120	1	15	
Bromoform	**0.0477**	**0.0490**	0.0500	0.0500	95	98	79-132	3	15	
Bromobenzene	**0.0505**	**0.0504**	0.0500	0.0500	101	101	80-124	0	15	
1,1,2,2-Tetrachloroethane	**0.0446**	**0.0492**	0.0500	0.0500	89	98	75-128	10	19	
1,2,3-Trichloropropane	**0.0462**	**0.0511**	0.0500	0.0500	92	102	74-128	10	19	
2-Chlorotoluene	**0.0518**	**0.0519**	0.0500	0.0500	104	104	80-126	0	15	
4-Chlorotoluene	**0.0530**	**0.0508**	0.0500	0.0500	106	102	80-129	4	15	
1,3-Dichlorobenzene	**0.0541**	**0.0530**	0.0500	0.0500	108	106	80-125	2	15	
1,4-Dichlorobenzene	**0.0527**	**0.0521**	0.0500	0.0500	105	104	78-127	1	15	
1,2-Dichlorobenzene	**0.0510**	**0.0521**	0.0500	0.0500	102	104	79-127	2	15	
1,2-Dibromo-3-chloropropane	**0.0393**	**0.0426**	0.0500	0.0500	79	85	68-143	8	26	
1,2,4-Trichlorobenzene	**0.0557**	**0.0516**	0.0500	0.0500	111	103	77-142	8	19	
Hexachlorobutadiene	**0.0632**	**0.0614**	0.0500	0.0500	126	123	73-135	3	19	
1,2,3-Trichlorobenzene	**0.0497**	**0.0495**	0.0500	0.0500	99	99	77-139	0	19	
Surrogate:										
Dibromofluoromethane					*97*	*92*	*69-124*			
Toluene-d8					*110*	*107*	*80-118*			
4-Bromofluorobenzene					*96*	*109*	*75-123*			

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Naphthalene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
2-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
1-Methylnaphthalene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Acenaphthylene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Acenaphthene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Fluorene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Phenanthrene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Anthracene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Fluoranthene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Pyrene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[a]anthracene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Chrysene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[b]fluoranthene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo(j,k)fluoranthene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[a]pyrene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Dibenz[a,h]anthracene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[g,h,i]perylene	**ND**	0.0072	EPA 8270E/SIM	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*47-112*				
Pyrene-d10	*92*	*48-129*				
Terphenyl-d14	*88*	*51-114*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Naphthalene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
2-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
1-Methylnaphthalene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Acenaphthylene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Acenaphthene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Fluorene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Phenanthrene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Anthracene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Fluoranthene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Pyrene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[a]anthracene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Chrysene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[b]fluoranthene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo(j,k)fluoranthene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[a]pyrene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Dibenz[a,h]anthracene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[g,h,i]perylene	**ND**	0.0075	EPA 8270E/SIM	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*47-112*				
Pyrene-d10	*96*	*48-129*				
Terphenyl-d14	*93*	*51-114*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0611S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*47-112*				
Pyrene-d10	*101*	*48-129*				
Terphenyl-d14	*93*	*51-114*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0611S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0727**	**0.0729**	0.0833	0.0833	87	88	64-115	0	15	
Acenaphthylene	**0.0720**	**0.0746**	0.0833	0.0833	86	90	68-118	4	15	
Acenaphthene	**0.0718**	**0.0750**	0.0833	0.0833	86	90	67-116	4	15	
Fluorene	**0.0724**	**0.0757**	0.0833	0.0833	87	91	69-120	4	15	
Phenanthrene	**0.0745**	**0.0772**	0.0833	0.0833	89	93	67-120	4	15	
Anthracene	**0.0918**	**0.0943**	0.0833	0.0833	110	113	71-118	3	15	
Fluoranthene	**0.0812**	**0.0828**	0.0833	0.0833	97	99	73-118	2	15	
Pyrene	**0.0814**	**0.0828**	0.0833	0.0833	98	99	71-118	2	15	
Benzo[a]anthracene	**0.0874**	**0.0914**	0.0833	0.0833	105	110	60-128	4	15	
Chrysene	**0.0773**	**0.0791**	0.0833	0.0833	93	95	70-121	2	15	
Benzo[b]fluoranthene	**0.0747**	**0.0836**	0.0833	0.0833	90	100	68-123	11	15	
Benzo(j,k)fluoranthene	**0.0804**	**0.0777**	0.0833	0.0833	97	93	73-123	3	17	
Benzo[a]pyrene	**0.0821**	**0.0860**	0.0833	0.0833	99	103	72-120	5	15	
Indeno(1,2,3-c,d)pyrene	**0.0838**	**0.0888**	0.0833	0.0833	101	107	64-122	6	15	
Dibenz[a,h]anthracene	**0.0824**	**0.0861**	0.0833	0.0833	99	103	72-120	4	15	
Benzo[g,h,i]perylene	**0.0794**	**0.0833**	0.0833	0.0833	95	100	71-117	5	15	
Surrogate:										
2-Fluorobiphenyl					*81*	*83*	*47-112*			
Pyrene-d10					*95*	*96*	*48-129*			
Terphenyl-d14					*94*	*93*	*51-114*			

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Aroclor 1016	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1221	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1232	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1242	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1248	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1254	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1260	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1262	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Aroclor 1268	**ND**	0.054	EPA 8082A	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*104*	*40-151*				
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Aroclor 1016	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1221	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1232	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1242	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1248	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1254	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1260	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1262	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Aroclor 1268	**ND**	0.056	EPA 8082A	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*101*	*40-151*				

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0611S1					
Aroclor 1016	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1221	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1232	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1242	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1248	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1254	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1260	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1262	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Aroclor 1268	**ND**	0.025	EPA 8082A	6-11-24	6-11-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*122*	*40-151*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0611S1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.456**	**0.437**	0.500	0.500	N/A	**91**	**87**	60-115	4	23	
Surrogate:											
DCB						*120*	*110*	*40-151*			

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

TOTAL METALS
EPA 6010D

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Cadmium	**ND**	0.54	EPA 6010D	6-7-24	6-7-24	
Chromium	**5.8**	0.54	EPA 6010D	6-7-24	6-7-24	
Lead	**ND**	5.4	EPA 6010D	6-7-24	6-7-24	
Silver	**ND**	1.1	EPA 6010D	6-7-24	6-7-24	
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Cadmium	**ND**	0.56	EPA 6010D	6-7-24	6-7-24	
Chromium	**5.2**	0.56	EPA 6010D	6-7-24	6-7-24	
Lead	**ND**	5.6	EPA 6010D	6-7-24	6-7-24	
Silver	**ND**	1.1	EPA 6010D	6-7-24	6-7-24	

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

TOTAL METALS
EPA 6010D
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0607SM2					
Cadmium	**ND**	0.50	EPA 6010D	6-7-24	6-7-24	
Chromium	**ND**	0.50	EPA 6010D	6-7-24	6-7-24	
Lead	**ND**	5.0	EPA 6010D	6-7-24	6-7-24	
Silver	**ND**	1.0	EPA 6010D	6-7-24	6-7-24	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-061-01									
	ORIG	DUP								
Cadmium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Chromium	**19.6**	**17.8**	NA	NA		NA	NA	10	20	
Lead	**6.58**	**7.36**	NA	NA		NA	NA	11	20	
Silver	**ND**	**ND**	NA	NA		NA	NA	NA	20	
MATRIX SPIKES										
Laboratory ID:	06-061-01									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	**44.6**	**44.4**	50.0	50.0	ND	**89**	**89**	75-125	0	20
Chromium	**110**	**108**	100	100	19.6	**90**	**88**	75-125	2	20
Lead	**236**	**235**	250	250	6.58	**92**	**91**	75-125	0	20
Silver	**19.2**	**19.3**	25.0	25.0	ND	**77**	**77**	75-125	0	20

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

TCLP METALS
EPA 1311/6010D

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU2**					
Laboratory ID:	06-039-01					
Cadmium	**ND**	0.020	EPA 6010D	6-11-24	6-11-24	
Chromium	**ND**	0.020	EPA 6010D	6-11-24	6-11-24	
Lead	**ND**	0.20	EPA 6010D	6-11-24	6-11-24	
Silver	**ND**	0.040	EPA 6010D	6-11-24	6-11-24	
Client ID:	**CSO DU3**					
Laboratory ID:	06-039-02					
Cadmium	**ND**	0.020	EPA 6010D	6-11-24	6-11-24	
Chromium	**ND**	0.020	EPA 6010D	6-11-24	6-11-24	
Lead	**ND**	0.20	EPA 6010D	6-11-24	6-11-24	
Silver	**ND**	0.040	EPA 6010D	6-11-24	6-11-24	

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

TCLP METALS
EPA 1311/6010D
QUALITY CONTROL

Matrix: TCLP Extract
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0611TM1					
Cadmium	**ND**	0.020	EPA 6010D	6-11-24	6-11-24	
Chromium	**ND**	0.020	EPA 6010D	6-11-24	6-11-24	
Lead	**ND**	0.20	EPA 6010D	6-11-24	6-11-24	
Silver	**ND**	0.040	EPA 6010D	6-11-24	6-11-24	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-096-03									
	ORIG	DUP								
Cadmium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Chromium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Lead	**0.204**	**ND**	NA	NA		NA	NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA	NA	NA	20	
MATRIX SPIKES										
Laboratory ID:	06-096-03									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	**2.07**	**2.08**	2.00	2.00	ND	**103**	**104**	75-125	1	20
Chromium	**3.70**	**3.73**	4.00	4.00	ND	**93**	**93**	75-125	1	20
Lead	**9.54**	**9.63**	10.0	10.0	0.204	**93**	**94**	75-125	1	20
Silver	**0.893**	**0.900**	1.00	1.00	ND	**89**	**90**	75-125	1	20

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
CSO DU2	06-039-01	**10**	6-5-24
CSO DU3	06-039-02	**14**	6-5-24

Date of Report: July 1, 2024
Samples Submitted: June 5, 2024
Laboratory Reference: 2406-039
Project: 2024-243

% MOISTURE
MULTI-INCREMENT SAMPLING

Client ID	Lab ID	% Moisture	Date Analyzed
CSO DU2	06-039-01	**7**	6-7-24
CSO DU3	06-039-02	**11**	6-7-24

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Am Test Inc.
13600 NE 126th Place Suite C
Kirkland, WA
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

June 28, 2024

David Baumeister
14648 NE 95th ST
Redmond, WA 98052

Project: Onsite (Chem)
Project Number: 2024-243
Project Manager: David Baumeister
RE: Onsite (Chem)

Enclosed are the results of analyses for samples received by our laboratory on 6/10/2024.
Please feel free to contact me with any questions or considerations regarding this report.

Sincerely,

Aaron Young
President

Am Test Inc.
13600 NE 126th Place Suite C
Kirkland, WA
(425) 885-1664
www.amtestlab.com

ANALYSIS REPORT

Professional Analytical Services

Date Received: 06/10/24
Date Reported: 06/28/24

OnSite Environmental Inc.
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: Onsite (Chem)
Project #: 2024-243

All results reported on an as received basis.

Reported Samples

Lab ID	Sample	Matrix	Qualifiers	Date Sampled	Date Received
A24F0163-01	CSO DU2	Solid		05/31/2024	06/10/2024
A24F0163-02	CSO DU3	Solid		06/03/2024	06/10/2024

Am Test Inc.
13600 NE 126th Place Suite C
Kirkland, WA
(425) 885-1664
www.amtestlab.com

ANALYSIS REPORT

Professional Analytical Services

Date Received: 06/10/24
Date Reported: 06/28/24

OnSite Environmental Inc.
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: Onsite (Chem)
Project #: 2024-243

All results reported on an as received basis.

AMTEST Identification Number: A24F0163-01
Client Identification: CSO DU2
Sampling Date: 05/31/24 07:00

Conventional Chemistry Parameters by APHA/EPA Methods

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cyanide	ND	mg/kg wet		0.037	SM 4500CN-E_2011	EZ	06/17/2024

AMTEST Identification Number: A24F0163-02
Client Identification: CSO DU3
Sampling Date: 06/03/24 07:00

Conventional Chemistry Parameters by APHA/EPA Methods

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cyanide	**0.235**	mg/kg wet		0.029	SM 4500CN-E_2011	EZ	06/17/2024

Am Test Inc.
13600 NE 126th Place Suite C
Kirkland, WA
(425) 885-1664
www.amtestlab.com

AMTEST LABORATORIES

Professional Analytical Services

ANALYSIS REPORT

Date Received: 06/10/24
Date Reported: 06/28/24

OnSite Environmental Inc.
14648 NE 95th ST
Redmond, WA 98052
Attention: David Baumeister
Project Name: Onsite (Chem)
Project #: 2024-243

All results reported on an as received basis.

Quality Control

Conventional Chemistry Parameters by APHA/EPA Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBF0094 - No Prep - WC Soil										
Blank (BBF0094-BLK1)				Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	ND		0.005	mg/kg wet						
LCS (BBF0094-BS1)				Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	0.054			mg/kg	0.05000		107	80-120		
Calibration Blank (BBF0094-CCB1)				Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	0.0002			mg/kg wet						
Calibration Blank (BBF0094-CCB2)				Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	-0.0009			mg/kg wet						
Calibration Check (BBF0094-CCV1)				Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	0.104			mg/kg	0.1000		104	85-115		
Calibration Check (BBF0094-CCV2)				Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	0.096			mg/kg	0.1000		96	85-115		
Duplicate (BBF0094-DUP1)		**Source: A24F0072-02**		Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	0.239		0.070	mg/kg dry		0.226			6	34
Matrix Spike (BBF0094-MS1)		**Source: A24F0072-02**		Prepared: 06/07/24 Analyzed: 06/17/24						
Cyanide	0.913		0.100	mg/kg dry	1.246	0.226	55	45-155		

Notes and Definitions

Item	Definition
Dry	Sample results reported on a dry weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.

A24F0163

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 - (425) 883-3881

Laboratory Reference #: 06-039

Laboratory: AmTest Laboratories

Attention: Aaron Young

13600 NE 126th Pl Kirkland, WA 98034

Phone Number: (425) 885-1664

Turnaround Request

1 Day 2 Day 3 Day

Standard

Other: 1 Week

Or Sooner if at all Possible Please - David

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 2024-243

Project Name:

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analyses
01	CSO DU2	5/31/24		S	1	Cyanide SM4500-CN
02	CSO DU3	6/3/24		S	1	Cyanide SM4500-CN

HAWAII SAMPLES REGULATED DISPOSAL PROCEDURE

	Company	Date	Time	Comments/Special Instructions
Relinquished by:	OSE	6/10/24	1:10 PM	
Received by: SF	AmTest	6/10/24	1310	7.3°C
Relinquished by:				
Received by:				
Relinquished by:				
Received by:				

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: LEHUA ENVIRONMENTAL INC.
Project Number: 2024-243
Project Name: CSO DECOMMISSIONING - CESSPOOL
Project Manager: KAMA KOBAYASHI
Sampled by: CALVIN ARCA/NICOLE GARAGANZA-TENGAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
~~☒~~ 2 Days ~~☑ 3 Days~~ DB.
~~☐ Standard (7 Days)~~
☐ _____ (other)

Laboratory Number: 06-039

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx EPA 8015	NWTPH-Dx EPA 8015	Volatiles 8260C HVOCS + BTEX	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals Cadmium, Chromium, Silver, Lead	Total MTCA Metals	TCLP Metals Cadmium, Chromium, Silver, Lead	HEM (oil and grease) 1664A	Multi-incremental sample preparation Volatile and Non-Volatile	Cyanide SM4500-CN *			% Moisture
1	CSO DU2	5/31/24		S	14			X	X	X				X	X				X		X		X	X			X
2	CSO DU3	6/3/24		↓	14			X	X	X				X	X				X		X		X	X			X

	Signature	Company	Date	Time
Relinquished		LEHUA ENVIRONMENTAL INC.	6/4/24	10:00AM
Received		OSE	6/5/24	1100
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
* 1 week TAT for Cyanide.

Data Package: Standard ☐ Level III ☐ Level IV ☐
Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Sample/Cooler Receipt and Acceptance Checklist

Client: _____

Client Project Name/Number: 2024-243

OnSite Project Number: 06-039

Initiated by: MV

Date Initiated: 6/5/24

1.0 Cooler Verification

1.1 Were there custody seals on the outside of the cooler?	Yes	(No)	N/A	1 2 3 4	
1.2 Were the custody seals intact?	Yes	No	(N/A)	1 2 3 4	
1.3 Were the custody seals signed and dated by last custodian?	Yes	No	(N/A)	1 2 3 4	
1.4 Were the samples delivered on ice or blue ice?	(Yes)	No	N/A	1 2 3 4	
1.5 Were samples received between 0-6 degrees Celsius?	(Yes)	No	N/A	Temperature:	4
1.6 Have shipping bills (if any) been attached to the back of this form?	(Yes)	N/A			
1.7 How were the samples delivered?	Client	Courier	(UPS/FedEx)	OSE Pickup	Other

2.0 Chain of Custody Verification

2.1 Was a Chain of Custody submitted with the samples?	(Yes)	No		1 2 3 4
2.2 Was the COC legible and written in permanent ink?	(Yes)	No		1 2 3 4
2.3 Have samples been relinquished and accepted by each custodian?	(Yes)	No		1 2 3 4
2.4 Did the sample labels (ID, date, time, preservative) agree with COC?	(Yes)	No		1 2 3 4
2.5 Were all of the samples listed on the COC submitted?	(Yes)	No		1 2 3 4
2.6 Were any of the samples submitted omitted from the COC?	Yes	(No)		1 2 3 4

3.0 Sample Verification

3.1 Were any sample containers broken or compromised?	Yes	(No)		1 2 3 4
3.2 Were any sample labels missing or illegible?	Yes	(No)		1 2 3 4
3.3 Have the correct containers been used for each analysis requested?	(Yes)	No		1 2 3 4
3.4 Have the samples been correctly preserved?	(Yes)	No	(N/A)	1 2 3 4
3.5 Are volatiles samples free from headspace and bubbles greater than 6mm?	Yes	No	(N/A)	1 2 3 4
3.6 Is there sufficient sample submitted to perform requested analyses?	(Yes)	No		1 2 3 4
3.7 Have any holding times already expired or will expire in 24 hours?	Yes	(No)		1 2 3 4
3.8 Was method 5035A used?	(Yes)	No	N/A	1 2 3 4
3.9 If 5035A was used, which sampling option was used (#1, 2, or 3).	#	2	N/A	1 2 3 4

Explain any discrepancies:

1 - Discuss issue in Case Narrative

2 - Process Sample As-is

3 - Client contacted to discuss problem

4 - Sample cannot be analyzed or client does not wish to proceed

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 18, 2024

Kama Kobayashi
Lehua Environmental Inc.
P.O. Box 1018
Kamuela, HI 96743

Re: Analytical Data for Project 2024-243-3
Laboratory Reference No. 2406-163

Dear Kama:

Enclosed are the analytical results and associated quality control data for samples submitted on June 13, 2024.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

Case Narrative

Samples were collected on June 11, 2024 and received by the laboratory on June 13, 2024. Samples were shipped in a cooler packed with blue ice and arrived at a temperature of <6°C. They were maintained at the laboratory at a temperature of 2°C to 6°C. A copy of the cooler receipt form has been included with this report.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below. However the soil results for the QA/QC samples are reported on a wet-weight basis.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

All samples were processed in the laboratory following the multi-increment sampling procedures as outlined in the HEER-TGM. Additional notes will be addressed in appropriate sections as warranted.

Volatiles EPA 8260D Analysis

The percent recovery for Bromomethane and 1,1,2-Trichloroethane is outside the control limits in the Spike Blank. The method allows for a percentage of the compounds to fall outside of the control limits due to the large number of analytes being spiked.

The RPD for Chloroethane, 1,1,2-Trichloroethane, 1,4-Dichlorobenzene and 1,2-Dichlorobenzene is outside the control limits for the Spike Blank/Spike Blank Duplicate. The method allows for a percentage of the compounds to fall outside of the control limits due to the large number of analytes being spiked.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

GASOLINE RANGE ORGANICS
EPA 8015M

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
Gasoline	**ND**	9.5	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*62-134*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

GASOLINE RANGE ORGANICS
EPA 8015M
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S2					
Gasoline	**ND**	5.0	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*109*	*62-134*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-163-01										
	ORIG	DUP									
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*87*	*92*	*62-134*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

DIESEL AND HEAVY OIL RANGE ORGANICS
EPA 8015M

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
Diesel Range Organics	**ND**	83	EPA 8015M	6-17-24	6-18-24	U1
Residual Range Organics	**540**	53	EPA 8015M	6-17-24	6-18-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

DIESEL AND HEAVY OIL RANGE ORGANICS
EPA 8015M
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S1					
Diesel Range Organics	**ND**	25	EPA 8015M	6-17-24	6-17-24	
Residual Range Organics	**ND**	50	EPA 8015M	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-183-02										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	40	
Residual Range	**ND**	**ND**	NA	NA		NA		NA	NA	40	
Surrogate:											
o-Terphenyl						*75*	*75*	*50-150*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

VOLATILE ORGANICS EPA 8260D/SIM
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
Dichlorodifluoromethane	ND	0.13	EPA 8260D	6-17-24	6-17-24	
Chloromethane	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Vinyl Chloride (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
Bromomethane	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Chloroethane	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Trichlorofluoromethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,1-Dichloroethene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Acetone	ND	0.95	EPA 8260D	6-17-24	6-17-24	
Iodomethane	ND	0.95	EPA 8260D	6-17-24	6-17-24	
Carbon Disulfide	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Methylene Chloride	ND	0.48	EPA 8260D	6-17-24	6-17-24	
(trans) 1,2-Dichloroethene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Methyl t-Butyl Ether	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,1-Dichloroethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Vinyl Acetate	ND	0.48	EPA 8260D	6-17-24	6-17-24	
2,2-Dichloropropane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
(cis) 1,2-Dichloroethene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
2-Butanone	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Bromochloromethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Chloroform (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
1,1,1-Trichloroethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Carbon Tetrachloride	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,1-Dichloropropene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Benzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,2-Dichloroethane (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
Trichloroethene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,2-Dichloropropane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Dibromomethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Bromodichloromethane (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

VOLATILE ORGANICS EPA 8260D/SIM
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
2-Chloroethyl Vinyl Ether	ND	0.48	EPA 8260D	6-17-24	6-17-24	
(cis) 1,3-Dichloropropene (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
Methyl Isobutyl Ketone	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Toluene	ND	0.48	EPA 8260D	6-17-24	6-17-24	
(trans) 1,3-Dichloropropene (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
1,1,2-Trichloroethane (SIM)	ND	0.0095	EPA 8260D/SIM	6-17-24	6-17-24	
Tetrachloroethene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,3-Dichloropropane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
2-Hexanone	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Dibromochloromethane (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
1,2-Dibromoethane (SIM)	ND	0.0048	EPA 8260D/SIM	6-17-24	6-17-24	
Chlorobenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,1,1,2-Tetrachloroethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Ethylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
m,p-Xylene	ND	0.19	EPA 8260D	6-17-24	6-17-24	
o-Xylene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Styrene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Bromoform	ND	0.48	EPA 8260D	6-17-24	6-17-24	
Isopropylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Bromobenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,1,2,2-Tetrachloroethane	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,2,3-Trichloropropane (SIM)	ND	0.0095	EPA 8260D/SIM	6-17-24	6-17-24	
n-Propylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
2-Chlorotoluene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
4-Chlorotoluene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,3,5-Trimethylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
tert-Butylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,2,4-Trimethylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
sec-Butylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,3-Dichlorobenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
p-Isopropyltoluene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,4-Dichlorobenzene (SIM)	ND	0.0095	EPA 8260D/SIM	6-17-24	6-17-24	
1,2-Dichlorobenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
n-Butylbenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
1,2-Dibromo-3-chloropropane (SIM)	ND	0.0095	EPA 8260D/SIM	6-17-24	6-17-24	
1,2,4-Trichlorobenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Hexachlorobutadiene (SIM)	ND	0.0095	EPA 8260D/SIM	6-17-24	6-17-24	
Naphthalene	ND	0.48	EPA 8260D	6-17-24	6-17-24	
1,2,3-Trichlorobenzene	ND	0.095	EPA 8260D	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*91*	*69-124*				
Toluene-d8	*109*	*80-118*				
4-Bromofluorobenzene	*95*	*75-123*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S2					
Dichlorodifluoromethane	ND	0.070	EPA 8260D	6-17-24	6-17-24	
Chloromethane	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Vinyl Chloride (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
Bromomethane	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Chloroethane	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Trichlorofluoromethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,1-Dichloroethene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Acetone	ND	0.50	EPA 8260D	6-17-24	6-17-24	
Iodomethane	ND	0.50	EPA 8260D	6-17-24	6-17-24	
Carbon Disulfide	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Methylene Chloride	ND	0.25	EPA 8260D	6-17-24	6-17-24	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Methyl t-Butyl Ether	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,1-Dichloroethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Vinyl Acetate	ND	0.25	EPA 8260D	6-17-24	6-17-24	
2,2-Dichloropropane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
2-Butanone	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Bromochloromethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Chloroform (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
1,1,1-Trichloroethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Carbon Tetrachloride	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,1-Dichloropropene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Benzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,2-Dichloroethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
Trichloroethene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,2-Dichloropropane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Dibromomethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Bromodichloromethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S2					
2-Chloroethyl Vinyl Ether	ND	0.25	EPA 8260D	6-17-24	6-17-24	
(cis) 1,3-Dichloropropene (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Toluene	ND	0.25	EPA 8260D	6-17-24	6-17-24	
(trans) 1,3-Dichloropropene (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
1,1,2-Trichloroethane (SIM)	ND	0.0050	EPA 8260D/SIM	6-17-24	6-17-24	
Tetrachloroethene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,3-Dichloropropane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
2-Hexanone	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Dibromochloromethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
1,2-Dibromoethane (SIM)	ND	0.0025	EPA 8260D/SIM	6-17-24	6-17-24	
Chlorobenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Ethylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
m,p-Xylene	ND	0.10	EPA 8260D	6-17-24	6-17-24	
o-Xylene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Styrene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Bromoform	ND	0.25	EPA 8260D	6-17-24	6-17-24	
Isopropylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Bromobenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,2,3-Trichloropropane (SIM)	ND	0.0050	EPA 8260D/SIM	6-17-24	6-17-24	
n-Propylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
2-Chlorotoluene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
4-Chlorotoluene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,3,5-Trimethylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
tert-Butylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,2,4-Trimethylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
sec-Butylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,3-Dichlorobenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
p-Isopropyltoluene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,4-Dichlorobenzene (SIM)	ND	0.0050	EPA 8260D/SIM	6-17-24	6-17-24	
1,2-Dichlorobenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
n-Butylbenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
1,2-Dibromo-3-chloropropane (SIM)	ND	0.0050	EPA 8260D/SIM	6-17-24	6-17-24	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Hexachlorobutadiene (SIM)	ND	0.0050	EPA 8260D/SIM	6-17-24	6-17-24	
Naphthalene	ND	0.25	EPA 8260D	6-17-24	6-17-24	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260D	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*96*	*69-124*				
Toluene-d8	*110*	*80-118*				
4-Bromofluorobenzene	*115*	*75-123*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0617S1									
	SB	SBD	SB	SBD	SB	SBD				
Dichlorodifluoromethane	**0.0385**	**0.0329**	0.0500	0.0500	77	66	24-162	16	24	
Chloromethane	**0.0465**	**0.0441**	0.0500	0.0500	93	88	41-143	5	22	
Vinyl Chloride	**0.0499**	**0.0453**	0.0500	0.0500	100	91	52-141	10	20	
Bromomethane	**0.0808**	**0.0720**	0.0500	0.0500	162	144	37-145	12	23	I
Chloroethane	**0.0617**	**0.0492**	0.0500	0.0500	123	98	54-148	23	19	L
Trichlorofluoromethane	**0.0578**	**0.0518**	0.0500	0.0500	116	104	65-142	11	18	
1,1-Dichloroethene	**0.0604**	**0.0592**	0.0500	0.0500	121	118	74-133	2	16	
Acetone	**0.0413**	**0.0313**	0.0500	0.0500	83	63	50-159	28	38	
Iodomethane	**0.0491**	**0.0461**	0.0500	0.0500	98	92	36-133	6	31	
Carbon Disulfide	**0.0625**	**0.0568**	0.0500	0.0500	125	114	37-138	10	27	
Methylene Chloride	**0.0484**	**0.0492**	0.0500	0.0500	97	98	60-135	2	23	
(trans) 1,2-Dichloroethene	**0.0595**	**0.0591**	0.0500	0.0500	119	118	74-131	1	15	
Methyl t-Butyl Ether	**0.0504**	**0.0489**	0.0500	0.0500	101	98	76-129	3	15	
1,1-Dichloroethane	**0.0592**	**0.0602**	0.0500	0.0500	118	120	74-130	2	15	
Vinyl Acetate	**0.0510**	**0.0445**	0.0500	0.0500	102	89	58-146	14	21	
2,2-Dichloropropane	**0.0626**	**0.0675**	0.0500	0.0500	125	135	74-137	8	16	
(cis) 1,2-Dichloroethene	**0.0631**	**0.0626**	0.0500	0.0500	126	125	71-136	1	15	
2-Butanone	**0.0401**	**0.0374**	0.0500	0.0500	80	75	58-144	7	32	
Bromochloromethane	**0.0453**	**0.0445**	0.0500	0.0500	91	89	78-128	2	15	
Chloroform	**0.0575**	**0.0575**	0.0500	0.0500	115	115	75-128	0	15	
1,1,1-Trichloroethane	**0.0584**	**0.0587**	0.0500	0.0500	117	117	73-129	1	15	
Carbon Tetrachloride	**0.0511**	**0.0519**	0.0500	0.0500	102	104	69-134	2	15	
1,1-Dichloropropene	**0.0580**	**0.0577**	0.0500	0.0500	116	115	73-127	1	15	
Benzene	**0.0599**	**0.0598**	0.0500	0.0500	120	120	75-126	0	15	
1,2-Dichloroethane	**0.0499**	**0.0491**	0.0500	0.0500	100	98	70-133	2	15	
Trichloroethene	**0.0554**	**0.0539**	0.0500	0.0500	111	108	80-130	3	15	
1,2-Dichloropropane	**0.0600**	**0.0616**	0.0500	0.0500	120	123	78-131	3	16	
Dibromomethane	**0.0459**	**0.0443**	0.0500	0.0500	92	89	72-136	4	28	
Bromodichloromethane	**0.0583**	**0.0568**	0.0500	0.0500	117	114	80-129	3	15	
(cis) 1,3-Dichloropropene	**0.0628**	**0.0604**	0.0500	0.0500	126	121	80-132	4	17	
Methyl Isobutyl Ketone	**0.0417**	**0.0400**	0.0500	0.0500	83	80	62-146	4	22	
Toluene	**0.0580**	**0.0600**	0.0500	0.0500	116	120	78-124	3	17	
(trans) 1,3-Dichloropropene	**0.0526**	**0.0542**	0.0500	0.0500	105	108	80-130	3	15	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

VOLATILE ORGANICS EPA 8260D/SIM
QUALITY CONTROL
page 2 of 2

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0617S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1,2-Trichloroethane	**0.0387**	**0.0451**	0.0500	0.0500	77	90	80-123	15	15	I,L
Tetrachloroethene	**0.0529**	**0.0590**	0.0500	0.0500	106	118	80-130	11	15	
1,3-Dichloropropane	**0.0453**	**0.0501**	0.0500	0.0500	91	100	80-122	10	15	
2-Hexanone	**0.0385**	**0.0414**	0.0500	0.0500	77	83	61-143	7	30	
Dibromochloromethane	**0.0413**	**0.0433**	0.0500	0.0500	83	87	80-129	5	15	
1,2-Dibromoethane	**0.0398**	**0.0429**	0.0500	0.0500	80	86	80-125	7	15	
Chlorobenzene	**0.0484**	**0.0483**	0.0500	0.0500	97	97	80-119	0	15	
1,1,1,2-Tetrachloroethane	**0.0496**	**0.0497**	0.0500	0.0500	99	99	80-124	0	15	
Ethylbenzene	**0.0574**	**0.0581**	0.0500	0.0500	115	116	80-120	1	15	
m,p-Xylene	**0.112**	**0.116**	0.100	0.100	112	116	80-121	4	15	
o-Xylene	**0.0563**	**0.0569**	0.0500	0.0500	113	114	80-120	1	15	
Styrene	**0.0528**	**0.0531**	0.0500	0.0500	106	106	80-130	1	15	
Bromoform	**0.0467**	**0.0419**	0.0500	0.0500	93	84	79-132	11	15	
Isopropylbenzene	**0.0556**	**0.0558**	0.0500	0.0500	111	112	80-126	0	15	
Bromobenzene	**0.0486**	**0.0507**	0.0500	0.0500	97	101	80-124	4	15	
1,1,2,2-Tetrachloroethane	**0.0440**	**0.0444**	0.0500	0.0500	88	89	75-128	1	19	
1,2,3-Trichloropropane	**0.0463**	**0.0462**	0.0500	0.0500	93	92	74-128	0	19	
n-Propylbenzene	**0.0584**	**0.0617**	0.0500	0.0500	117	123	80-128	5	16	
2-Chlorotoluene	**0.0510**	**0.0530**	0.0500	0.0500	102	106	80-126	4	15	
4-Chlorotoluene	**0.0502**	**0.0523**	0.0500	0.0500	100	105	80-129	4	15	
1,3,5-Trimethylbenzene	**0.0557**	**0.0590**	0.0500	0.0500	111	118	80-129	6	15	
tert-Butylbenzene	**0.0527**	**0.0543**	0.0500	0.0500	105	109	80-129	3	15	
1,2,4-Trimethylbenzene	**0.0570**	**0.0549**	0.0500	0.0500	114	110	80-127	4	15	
sec-Butylbenzene	**0.0582**	**0.0535**	0.0500	0.0500	116	107	77-134	8	16	
1,3-Dichlorobenzene	**0.0524**	**0.0474**	0.0500	0.0500	105	95	80-125	10	15	
p-Isopropyltoluene	**0.0558**	**0.0521**	0.0500	0.0500	112	104	80-133	7	15	
1,4-Dichlorobenzene	**0.0518**	**0.0492**	0.0500	0.0500	104	98	78-127	5	15	
1,2-Dichlorobenzene	**0.0505**	**0.0429**	0.0500	0.0500	101	86	79-127	16	15	L
n-Butylbenzene	**0.0629**	**0.0526**	0.0500	0.0500	126	105	80-136	18	17	L
1,2-Dibromo-3-chloropropane	**0.0396**	**0.0339**	0.0500	0.0500	79	68	68-143	16	26	
1,2,4-Trichlorobenzene	**0.0542**	**0.0524**	0.0500	0.0500	108	105	77-142	3	19	
Hexachlorobutadiene	**0.0604**	**0.0620**	0.0500	0.0500	121	124	73-135	3	19	
Naphthalene	**0.0398**	**0.0373**	0.0500	0.0500	80	75	72-142	6	21	
1,2,3-Trichlorobenzene	**0.0496**	**0.0481**	0.0500	0.0500	99	96	77-139	3	19	
Surrogate:										
Dibromofluoromethane					*99*	*95*	*69-124*			
Toluene-d8					*103*	*108*	*80-118*			
4-Bromofluorobenzene					*97*	*115*	*75-123*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

PAHs EPA 8270E/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
Naphthalene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
2-Methylnaphthalene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
1-Methylnaphthalene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Acenaphthylene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Acenaphthene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Fluorene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Phenanthrene	**0.0085**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Anthracene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Fluoranthene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Pyrene	**0.0076**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Benzo[a]anthracene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Chrysene	**0.0073**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Benzo[b]fluoranthene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Benzo(j,k)fluoranthene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Benzo[a]pyrene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Dibenz[a,h]anthracene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Benzo[g,h,i]perylene	**ND**	0.0070	EPA 8270E/SIM	6-17-24	6-18-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*47-112*				
Pyrene-d10	*91*	*48-129*				
Terphenyl-d14	*104*	*51-114*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S1					
Naphthalene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Acenaphthylene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Acenaphthene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Fluorene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Phenanthrene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Anthracene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Fluoranthene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Pyrene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Chrysene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270E/SIM	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*47-112*				
Pyrene-d10	*94*	*48-129*				
Terphenyl-d14	*95*	*51-114*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

PAHs EPA 8270E/SIM
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0617S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0731**	**0.0746**	0.0833	0.0833	88	90	64-115	2	15	
Acenaphthylene	**0.0794**	**0.0807**	0.0833	0.0833	95	97	68-118	2	15	
Acenaphthene	**0.0758**	**0.0778**	0.0833	0.0833	91	93	67-116	3	15	
Fluorene	**0.0776**	**0.0793**	0.0833	0.0833	93	95	69-120	2	15	
Phenanthrene	**0.0778**	**0.0811**	0.0833	0.0833	93	97	67-120	4	15	
Anthracene	**0.0786**	**0.0823**	0.0833	0.0833	94	99	71-118	5	15	
Fluoranthene	**0.0816**	**0.0857**	0.0833	0.0833	98	103	73-118	5	15	
Pyrene	**0.0790**	**0.0820**	0.0833	0.0833	95	98	71-118	4	15	
Benzo[a]anthracene	**0.0825**	**0.0870**	0.0833	0.0833	99	104	60-128	5	15	
Chrysene	**0.0780**	**0.0828**	0.0833	0.0833	94	99	70-121	6	15	
Benzo[b]fluoranthene	**0.0758**	**0.0791**	0.0833	0.0833	91	95	68-123	4	15	
Benzo(j,k)fluoranthene	**0.0830**	**0.0877**	0.0833	0.0833	100	105	73-123	6	17	
Benzo[a]pyrene	**0.0790**	**0.0826**	0.0833	0.0833	95	99	72-120	4	15	
Indeno(1,2,3-c,d)pyrene	**0.0764**	**0.0798**	0.0833	0.0833	92	96	64-122	4	15	
Dibenz[a,h]anthracene	**0.0783**	**0.0821**	0.0833	0.0833	94	99	72-120	5	15	
Benzo[g,h,i]perylene	**0.0777**	**0.0812**	0.0833	0.0833	93	97	71-117	4	15	
Surrogate:										
2-Fluorobiphenyl					*85*	*86*	*47-112*			
Pyrene-d10					*92*	*97*	*48-129*			
Terphenyl-d14					*92*	*97*	*51-114*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

PCBs EPA 8082A

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
Aroclor 1016	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1221	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1232	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1242	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1248	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1254	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1260	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1262	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Aroclor 1268	**ND**	0.052	EPA 8082A	6-17-24	6-18-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*89*	*40-134*				

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

PCBs EPA 8082A
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0617S1					
Aroclor 1016	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1221	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1232	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1242	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1248	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1254	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1260	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1262	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Aroclor 1268	**ND**	0.050	EPA 8082A	6-17-24	6-17-24	
Surrogate:	*Percent Recovery*	*Control Limits*				
DCB	*102*	*40-134*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0617S1										
	SB	SBD	SB	SBD		SB	SBD				
Aroclor 1260	**0.394**	**0.452**	0.500	0.500	N/A	**79**	**90**	60-115	14	23	
Surrogate:											
DCB						*102*	*107*	*40-134*			

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

TOTAL METALS
EPA 6010D/7471B

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**CSO DU-4**					
Laboratory ID:	06-163-01					
Arsenic	**ND**	10	EPA 6010D	6-18-24	6-18-24	
Barium	**120**	2.6	EPA 6010D	6-18-24	6-18-24	
Cadmium	**ND**	0.52	EPA 6010D	6-18-24	6-18-24	
Chromium	**6.6**	0.52	EPA 6010D	6-18-24	6-18-24	
Lead	**ND**	5.2	EPA 6010D	6-18-24	6-18-24	
Mercury	**ND**	0.26	EPA 7471B	6-17-24	6-17-24	
Selenium	**ND**	10	EPA 6010D	6-18-24	6-18-24	
Silver	**ND**	1.0	EPA 6010D	6-18-24	6-18-24	

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

TOTAL METALS
EPA 6010D/7471B
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0618SM2					
Arsenic	**ND**	10	EPA 6010D	6-17-24	6-18-24	
Barium	**ND**	2.5	EPA 6010D	6-17-24	6-17-24	
Cadmium	**ND**	0.50	EPA 6010D	6-17-24	6-18-24	
Chromium	**ND**	0.50	EPA 6010D	6-17-24	6-18-24	
Lead	**ND**	5.0	EPA 6010D	6-17-24	6-18-24	
Selenium	**ND**	10	EPA 6010D	6-17-24	6-18-24	
Silver	**ND**	1.0	EPA 6010D	6-17-24	6-18-24	
Laboratory ID:	MB0617S1					
Mercury	**ND**	0.25	EPA 7471B	6-17-24	6-17-24	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-213-01									
	ORIG	DUP								
Arsenic	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Barium	**87.6**	**87.9**	NA	NA		NA	NA	0	20	
Cadmium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Chromium	**19.1**	**19.2**	NA	NA		NA	NA	1	20	
Lead	**8.40**	**7.96**	NA	NA		NA	NA	5	20	
Selenium	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Silver	**ND**	**ND**	NA	NA		NA	NA	NA	20	
Laboratory ID:	06-183-02									
Mercury	**ND**	**ND**	NA	NA		NA	NA	NA	20	
MATRIX SPIKES										
Laboratory ID:	06-213-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	**113**	**113**	100	100	ND	**113**	**113**	75-125	0	20
Barium	**189**	**183**	100	100	87.6	**101**	**96**	75-125	3	20
Cadmium	**51.8**	**49.9**	50.0	50.0	ND	**104**	**100**	75-125	4	20
Chromium	**126**	**123**	100	100	19.1	**106**	**104**	75-125	2	20
Lead	**273**	**261**	250	250	8.40	**106**	**101**	75-125	5	20
Selenium	**103**	**97.7**	100	100	ND	**103**	**98**	75-125	5	20
Silver	**24.0**	**22.9**	25.0	25.0	ND	**96**	**92**	75-125	5	20
Laboratory ID:	06-183-02									
Mercury	**0.508**	**0.511**	0.500	0.500	0.00660	**100**	**101**	80-120	1	20

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

% MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
CSO DU-4	06-163-01	**7**	6-14-24

Date of Report: June 18, 2024
Samples Submitted: June 13, 2024
Laboratory Reference: 2406-163
Project: 2024-243-3

% MOISTURE
MULTI-INCREMENT SAMPLING

Client ID	Lab ID	% Moisture	Date Analyzed
CSO DU-4	06-163-01	**5**	6-17-24

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.

X2 - Sample extract treated with a silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in methods 8260 & 8270, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: LEHUA ENVIRONMENTAL INC.

Project Number: 2024-243-3

Project Name: CSO DECOMMISSIONING - PARKING LOT/ DRIVEWAY ASPHALT PAVED AREA

Project Manager: KAMA KOBAYASHI

Sampled by: CALVIN ARCA

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☒ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☐ Standard (7 Days)
- ☐ _____ (other)

Laboratory Number: 06-163

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx EPA 8015	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Multi-incremental sample preparation Volatile and Non-Volatile				% Moisture
1	CSO DU-4	6-11-24		S	14			X	X	X				X	X				X				X				16

	Signature	Company	Date	Time
Relinquished		LEHUA ENVIRONMENTAL INC.	6-12-24	12:00 pm
Received		ONE	6/13/24	1000
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

13 in methanol vials
1 ziploc bag

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Sample/Cooler Receipt and Acceptance Checklist

Client: UET

Client Project Name/Number: 2024-243-3

OnSite Project Number: 06-163

Initiated by: MV

Date Initiated: 6/13/24

1.0 Cooler Verification

1.1 Were there custody seals on the outside of the cooler?	Yes	(No)	N/A	1 2 3 4
1.2 Were the custody seals intact?	Yes	No	(N/A)	1 2 3 4
1.3 Were the custody seals signed and dated by last custodian?	Yes	No	(N/A)	1 2 3 4
1.4 Were the samples delivered on ice or blue ice?	(Yes)	No	N/A	1 2 3 4
1.5 Were samples received between 0-6 degrees Celsius?	(Yes)	No	N/A	Temperature: 6
1.6 Have shipping bills (if any) been attached to the back of this form?	(Yes)	N/A		
1.7 How were the samples delivered?	Client	Courier	(UPS/FedEx)	OSE Pickup Other

2.0 Chain of Custody Verification

2.1 Was a Chain of Custody submitted with the samples?	(Yes)	No		1 2 3 4
2.2 Was the COC legible and written in permanent ink?	(Yes)	No		1 2 3 4
2.3 Have samples been relinquished and accepted by each custodian?	(Yes)	No		1 2 3 4
2.4 Did the sample labels (ID, date, time, preservative) agree with COC?	(Yes)	No		1 2 3 4
2.5 Were all of the samples listed on the COC submitted?	(Yes)	No		1 2 3 4
2.6 Were any of the samples submitted omitted from the COC?	Yes	(No)		1 2 3 4

3.0 Sample Verification

3.1 Were any sample containers broken or compromised?	Yes	(No)		1 2 3 4
3.2 Were any sample labels missing or illegible?	Yes	(No)		1 2 3 4
3.3 Have the correct containers been used for each analysis requested?	(Yes)	No		1 2 3 4
3.4 Have the samples been correctly preserved?	(Yes)	No	N/A	1 2 3 4
3.5 Are volatiles samples free from headspace and bubbles greater than 6mm?	Yes	No	(N/A)	1 2 3 4
3.6 Is there sufficient sample submitted to perform requested analyses?	(Yes)	No		1 2 3 4
3.7 Have any holding times already expired or will expire in 24 hours?	Yes	(No)		1 2 3 4
3.8 Was method 5035A used?	(Yes)	No	N/A	1 2 3 4
3.9 If 5035A was used, which sampling option was used (#1, 2, or 3).	#	2	N/A	1 2 3 4

Explain any discrepancies:

1 - Discuss issue in Case Narrative

2 - Process Sample As-is

3 - Client contacted to discuss problem

4 - Sample cannot be analyzed or client does not wish to proceed