

Brownfields Corrective Action Investigation Report
Long Falls Paperboard
161 Wellington Road
Brattleboro, Vermont 05301



EPA RFA 19093
Vermont DEC Site #2018-4828

August 14, 2020

Prepared For:
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1.0 EXECUTIVE SUMMARY

LE Environmental LLC (LEE) completed a Brownfields Corrective Action Investigation at Long Falls Paperboard, 161 Wellington Road, Brattleboro, Vermont (Site). The ESA was conducted pursuant to LEE's approved Site-Specific Quality Assurance Project Plan Addendum (SSQAPP Addendum) dated March 18, 2020.

The property is owned by the Brattleboro Development Credit Corporation (BDCC) and is operated by Long Falls Paperboard LLC. This project has been funded by the United States Environmental Protection Agency under assistance agreement 00A00502 to the Brattleboro Development Credit Corporation (BDCC). The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

This Corrective Action Investigation included holding basin sludge and soil sampling and testing, and groundwater sampling and testing. A review of relevant background information on vanadium in soil concentrations was conducted.

The following conclusions were made.

1. Soil testing indicates no contamination above non-residential screening levels in the sandy soils surrounding the holding basin lagoon. This suggests that overtopping in the past was not a frequent or significant occurrence.
2. Holding basin sludge testing indicates the presence of dioxin and poly and perfluoroalkyl substances (PFAs), which will influence disposal options.
3. Groundwater PFAs concentrations are uniformly below state standards.
4. Results of the background vanadium soil review indicate that vanadium is not abnormally elevated in soils at the Site.

LEE makes the following recommendations in connection with the Site:

1. An Evaluation of Corrective Action Alternatives (ECAA) and a Corrective Action Plan (CAP) should be developed to address decommissioning the holding basin.
2. No further action is warranted with respect to on-Site soils or groundwater PFA concentrations. The groundwater monitoring wells installed during the Phase II ESA should be properly abandoned.
3. No further action is warranted with respect to vanadium concentrations in soil.
4. Active remedial measures do not appear to be warranted for other Recognized Environmental Conditions presented in Section 8.0 of this report (historic #6 fuel oil release, historic gasoline/diesel USTs, sumps, floor drains, equipment yard, drums, filled areas, adjacent Sites, septic systems or the rail line).



2.0 SITE INFORMATION

LE Environmental LLC (LEE) completed a Brownfields Corrective Action Investigation at Long Falls Paperboard, 161 Wellington Road, Brattleboro, Vermont (Site). The ESA was conducted pursuant to LEE’s approved Site-Specific Quality Assurance Project Plan Addendum (SSQAPP Addendum) dated March 18, 2020.

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Stakeholder	Mailing Address	Name and Email Address	Phone Number
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Long Falls Paperboard	161 Wellington Road Brattleboro, Vermont 05301	Gabriela Constantin gabriela.constantin@longfallspaperboard.com	(802) 257-0365
Town of Brattleboro	230 Main Street, Suite 202 Brattleboro, VT 05301	Sue Fillion sfillion@brattleboro.org	(802) 251-8112

3.0 CURRENT USE OF THE SITE

The property consists of a 39.52-acre parcel with an active paperboard manufacturing facility at the north end of Wellington Road in Brattleboro, Vermont (see Appendix A). The Vermont Department of Environmental Conservation (DEC) indicates that the Site is in a designated “urban background” zone for soil contamination. Therefore, soil data collected during this investigation has been evaluated in the context of a non-residential property in a designated urban background zone.

4.0 CURRENT ADJOINING PROPERTY USES

Current uses of the adjoining properties are as follows:

- North: undeveloped woodland.
- East: Connecticut River.
- South: Green Mountain Power substation, Wellington Road.



- West: (south to north): Suburban Propane; BDCC Business Park (multi-tenant, former Book Press), C&S Wholesale Grocers, Closed Windham Solid Waste Management District (WSWMD) Landfill.

5.0 SITE DESCRIPTION

The property is at the eastern edge of the Brattleboro Industrial Zone, which encompasses most of the area east of Putney Road and north of I-91 Exit 3 (Appendix A). Development in this zone includes industrial manufacturing, warehouses, retail, and wholesale distribution.

6.0 LATITUDE/LONGITUDE

The center of property coordinates are 42° 53' 22.34" north latitude and 72° 32' 34.28" west longitude.¹

7.0 SITE HISTORY

A Phase I ESA² and a Phase II ESA³ were recently performed. Twelve Recognized Environmental Conditions (RECs) were identified during the Phase I ESA. These were evaluated during the Phase II ESA. The outcome of the Phase II ESA was that most of the RECs identified in the Phase I ESA did not have significant subsurface contamination associated with them (Table in Section 8). The following excerpt is from the Phase I ESA Report:

The property was undeveloped and in agricultural use until 1960. The first building (main plant) was constructed in 1960-61. Additions to the building were made in 1967, 1973, 1974, 1978, 1982, 1988, and 1996. The 1893, 1935 and 1954 USGS maps show no development on the property. The only adjoining development was the railway line. A 1951 air photo shows the property was cleared and undeveloped at that time, except for indications of excavation activity along the north end of the property. Adjoining properties appear to be in agricultural use. Excavation appears at the WSWMD landfill site. The 1958 property survey shows the property undeveloped except for an overhead electric line. Historically, the town land records indicate that the property was owned by a succession of individuals through 1958, and then BDCC acquired the property for development as a paper mill. The property was sold by BDCC in 1960, and was owned by a number of corporate entities until late 2018 when BDCC re-acquired the property.

¹ EDR, Page 3.

² LEE, 2018.

³ Stone Environmental, 2019.



8.0 SITE CONTAMINANT BACKGROUND

A. Release Date and Description

The sources of the releases at the Site and their current status are summarized in the following table that summarizes the RECs identified in the Phase I ESA, the results of the Phase II ESA and Corrective Action Investigation, and recommended next steps.

REC identified in Phase I	Phase II / CA Investigation Results	Recommendation
1. Historic #6 Fuel Oil Release	#6 fuel oil remains, but no impact to sensitive receptors	No further action. Address residual contamination via institutional control.
2. Potential contamination from historic gas and diesel USTs	No evidence of a gasoline release except possibly naphthalene and MTBE in production wells, and no evidence of a diesel fuel release that impacts groundwater.	No further action. Production wells are not used for potable water.
3. On-Site Paper Manufacturing	Historically detected chlorinated solvents in groundwater have dissipated. Per- and polyfluoroalkyl substances (PFAs) are present in some soil and groundwater samples at levels below standards. Vanadium present in soil above standards. Dioxins were present but below standards except in the wastewater holding basin. PCBs were present in the holding basin.	<ul style="list-style-type: none"> a) Contents of wastewater holding basin are waste and the presence of a silt clay liner was confirmed. Evaluate cleanup options via ECAA/CAP process. b) Vanadium appears to be naturally occurring based on an evaluation of available vanadium data. No further action. c) PFA concentrations in groundwater confirmed to be below current groundwater standards. No further action, abandon monitoring wells.
4. Sumps and Floor Drains	Historically detected solvents have dissipated. No evidence of other releases.	No further action.
5. Equipment yard	Evaluated, no releases noted.	No further action.
6. Abandoned drum	Evaluated, no releases noted.	No further action.
7. Filled area north end of property	Evaluated, no releases noted.	No further action.
8. WSWMD Landfill impact to groundwater	Not investigated due to groundwater reclassification to non-potable.	No further action.
9. Active septic system north of plant	Evaluated, no releases noted.	No further action.
10. Abandoned septic system east of plant	Evaluated, no releases noted.	No further action.
11. Adjoining active railway line	Railway related contamination was below standards.	No further action.
12. Adjoining historic printing press	Evaluated, no releases noted.	No further action.



B. Release Report Date

Documentation of the reported contamination was made via submittal of the 2019 Phase II ESA report. Information in this Corrective Action Investigation report does not mandate additional statutory reporting obligations (no new releases to report).

C. Release Response Actions

No release response actions have been completed or are recommended.

D. Previous Environmental Documents

The following recent environmental documents exist for this Site and are on-file with the DEC:

1. Phase I Environmental Site Assessment Report, December 2018, LEE.
2. Phase II Environmental Site Assessment Report, October 2019, Stone Environmental.
3. SSQAPP Addendum for Brownfields Corrective Action Investigation, March 18, 2020, LEE.

E. List of Governmental Records Reviewed

In addition to the documents listed in “D”, other governmental records were reviewed in the Phase I ESA:

1. Brattleboro Land Records
2. State of Vermont Department of Environmental Conservation Hazardous Sites List, Solid Waste Facilities list, Leaking UST and Above-ground Storage Tank database, Brownfields List
3. EPA National Priorities List (NPL), Proposed NPL, Delisted NPL, CERCLIS, RCRA CORRACTS, RCRA TSDF, RCRA Generators database, Institutional Controls inventory, Emergency Response Notification System

9.0 CONCEPTUAL SITE MODEL

The following conceptual model has been updated with the data generated during the Phase II ESA.

Site Users

Site users primarily include paper company workers, who are indoors for most of the time. Outdoor activities include parking, grounds maintenance, and operation of the water and wastewater plants. Most of the Site used by employees is paved or



covered by the building. Results of soil testing do not suggest that contact risk is present.

Potential Contaminant Sources

The following discussion of contaminant fate and transport was summarized from the 2019 Phase II ESA report and updated to incorporate data from this investigation.⁴

No. 6 Fuel Oil Release and Former Diesel & Gasoline USTs

Petroleum was detected in the soil samples at low levels near the former USTs locations. Free product detected in one well may be unchanged since 1994. No petroleum volatile organic compounds (VOCs) or semi-volatile VOCs (SVOCs) were found in groundwater beneath the former underground storage tanks (USTs). Naphthalene was detected in samples collected from both the 'Deep' and 'Shallow' production wells above the Vermont Groundwater Enforcement Standard (VGES) of 0.5 µg/L. Additional SVOCs were detected in each of these samples but well below the respective VGES. MTBE was also detected in each of these samples below the VGES of 11 µg/L. These data indicate that petroleum products may have migrated and/or were hydraulically influenced due to pumping to the production well area and in the absence of a continuing source, are and/or would be expected to decline over time.

General Use of the Property for Paperboard Manufacturing and Potential Releases from Basement Sumps and/or Underground Piping

Poly and perfluoroalkyl substances (PFAs) were detected in soil and groundwater at concentrations below current standards. PFAs have been used historically in paper coatings, among other uses, and have been detected in the facility wastewater treatment liquid effluent in December 2018 as well as the sludge samples. Some PFAs can adsorb to material with high organic content, but in general, they tend to move with groundwater.

Vanadium is a naturally occurring mineral and background concentrations due to bedrock chemistry may be elevated. Vanadium was detected in all soil samples at concentrations above the Vermont Soil Standard (VSS) resident standard, but, except for sample collected from the wastewater treatment plant holding basin, were below the VSS non-resident standard. Vanadium was also detected in five of the eleven groundwater samples, up to 11 µg/L; there is no VGES for vanadium in groundwater. There is no known use for vanadium at the Site.

⁴ Stone Environmental, 2019.



Total lead, manganese, and arsenic were each detected in more than one groundwater sample at concentrations above the VGES. The most likely source of these metals is turbidity in the groundwater samples.

Dioxins were detected in subsurface soils at concentrations well below 2,3,7,8-TCDD TEQ VSS standard. Dioxin was present in holding basin sludge but not in groundwater.

Impacts from the Adjacent Railway Line

Polycyclic aromatic hydrocarbons (PAHs) were detected in shallow soil along the railway line at concentrations below the DEC non-residential shallow soil standard. No herbicides were detected in soils along the railway line. PAHs have a high affinity for soils and are not expected to migrate beyond shallow soils in this area.

Wastewater Holding Basin

The wastewater holding basin is a lined containment vessel that was formerly used to store overflow process water until treatment could take place. A shallow sample and its duplicate were collected from the center of the holding basin during the Phase II ESA (IP-06-0.5 and IP-06-0.5-FD). The Phase II ESA report characterized these samples as soil; with the subsequent finding that the holding basin is a lined treatment structure, these samples are more accurately characterized as sludge to be compared to hazardous waste criteria instead of soil standards. Four additional sludge samples were collected for disposal characterization testing during this Corrective Action Investigation. A summary of updated sampling findings is included in Section 12.

Structural Information

The property hosts an approximately 200,000 square foot paperboard manufacturing plant. The plant obtains pulp and recycled paper from outside sources and produces 7-ply hard stock finished product. The property also includes the following other structures:

- A wastewater treatment plant for process water: The wastewater treatment plant includes four aerated treatment lagoons and a clarifier. The lagoons are approximately 160 feet wide each and are oriented parallel to the Connecticut River.
- A water filtration plant for process water: The sand filter house is a single-story cement block building approximately 20 feet wide and 40 feet long. It was built in 1996 to treat process water from the river. It houses a disinfection unit (sodium hypochlorite) stored in a vertical aboveground storage tank, and six large steel tanks containing sand for filtration.



- An agricultural field that has been leased to area farmers in the past.
- The property is on the DEC's Underground Storage Tank (UST) registry and has two active 25,000-gallon #6 fuel oil USTs. The plant's primary heating source is compressed natural gas and fuel oil is a backup source of heat for the plant. Five USTs were also documented as being removed in 1988 and 1990.

Wetlands and Surface Water Bodies

No surface water bodies or wetlands are present on Site. The 2019 Phase II ESA report indicates that impact to the Connecticut River from identified contaminant sources is not taking place.

Public and Private Water Supplies

The Site and surrounding area are served by a municipal water supply system. There are two on-Site water wells for paper production that have low levels of MTBE and naphthalene in them. The water is not for potable purposes and does not impact Site users.

Utilities

Public utility corridors in the vicinity of the Site include buried water, sewer, and storm drain lines. The 2019 Phase II ESA report findings do not suggest that public utility corridors are at risk from the contamination.

Exposure Pathways

Based on the findings of this corrective action investigation, it does not appear that there are complete exposure pathways that would result in significant human exposure to petroleum or non-petroleum contamination, except within the holding basin where sludge is exposed at the ground surface. Site users or others do not normally access the holding basin.

10.0 WORK PLAN PROTOCOL DEVIATIONS

The work described in LEE's approved SSQAPP Addendum was performed without significant deviation. It was not possible to collect water level measurement or groundwater sample from monitoring well IP-5 because it was covered with a pile of paper sludge. The location of soil boring LF-6 was moved east approximately 100 feet to avoid a paper sludge pile in its intended location. These deviations do not affect the outcome of the investigation.



11.0 SAMPLE COLLECTION DOCUMENTATION

The following tables outline the location of samples, the method of collection, and the well or soil boring identification number.

Sludge Assessment

Sample ID	Depth (ft bg)	Analytical Methods	Collection Method
LF-1, LF-2, LF-3 LF-4	0-1 0-2	VOCs via 8260C SVOCs via 8270D RCRA 8 Metals and vanadium via 6020 PCBs via EPA 8082 with Soxhlet extraction Ignitibility (solids) via Method 1010A pH via EPA Method 9045D Dioxin/Furan Congeners via Method 8290 TPH via Method 8100 Reactivity (Cn/S) via SW-846 9014 and 9030A PFAs via Method 537 Modified	Grab from Hand Auger Bucket

Soils Assessment

Sample ID	Depth (ft bg)	Analytical Methods	Collection Method
LF-5, LF-6, LF-7	0-1.5	VOCs via 8260C PAHs via 8270D RCRA 8 Metals via 6020 PCBs via Method 8082 Dioxin/Furan Congeners via Method 8290	Grab from Sample Sleeve

Groundwater Sampling

Sample ID	Analytical Methods	Collection Method
IP-1, IP-2, IP-3, IP-4 IP-6, IP-7, IP-8	PFAs via Method 537 Modified	Grab via Low Flow Sampling

12.0 CONTAMINATED MEDIA CHARACTERIZATION

Pre-Excavation Utility Locating

LEE premarked the proposed soil boring locations on April 23, 2020, and obtained Dig-Safe number 20201810839. LEE retained Vermont Underground Locators of Williston, VT to locate private utilities on Site using ground penetrating radar, electronic pipe tracing, and magnetic locating. Vermont Underground Locators identified water lines, and electrical lines. Proposed drilling locations were cleared with respect to potential utility conflicts. Vermont Underground Locators' report is included in Appendix D. Photos of the Corrective Action Investigation fieldwork are in Appendix C.



A. Holding Basin Sludge Sample Results

On May 8, 2020, LEE oversaw advancement of four shallow soil borings (LF-1 through LF-4) at the locations shown on the attached Holding Basin Sampling Map. T&K Drilling of Troy, NH advanced borings LF-1 through LF-4 using a hand auger. Sludge samples were screened for VOCs using a calibrated photoionization detector (PID) and bag headspace screening protocol.

Sludge samples were submitted to Con-Test Analytical Laboratory of East Longmeadow, Massachusetts for analysis. Samples for analysis of dioxin/furan congeners were submitted to ALS Laboratory of Houston, Texas. Results of sludge sampling were tabulated in comparison to the current Vermont Hazardous Waste Management Regulations (December 2016, VHWMR). The following observations were made:

- The wastewater sludge is loose dark grey granular material with no odor and low density relative to soil.
- A silty clay liner was encountered at 1-2' depth at each of the wastewater sludge locations. The liner appeared to be 4-6" thick.
- No elevated PID field screening readings were obtained. The PID readings ranged from 0.0-0.1 ppm.
- None of the potentially hazardous constituents included in the VHWMR with numerical thresholds were reported at concentrations exceeding those thresholds. This included VOCs, SVOCs, PCBs and metals. Results of TCLP metals testing were non-detectable and below all thresholds.
- Reported elevated total chromium and total lead concentrations from the 2019 Phase II ESA were not replicated in this testing.
- Laboratory-measured pH was acidic and ranged from 4.3-5.1 standard units.
- The sum of five Vermont-regulated PFAs concentration was present in the sludge at concentrations ranging from 0.096-0.152 milligrams per kilogram (mg/kg). This is comparable to the results of the 2019 Phase II ESA testing.
- Reactivity via cyanide and sulfide was non-detectable and the sludge was not ignitable.
- Dioxin/furan congeners were present at detectable concentrations. Reported toxicity equivalency as 2,3,7,8-TCDD ranged from $1.15-2.38 \times 10^{-5}$ mg/kg. These results were roughly an order of magnitude higher than those from the 2019 Phase II ESA.

The tabulated sludge testing results and laboratory report are in Appendix E.

LEE tabulated the sludge testing results versus current criteria for hazardous waste in the State of Vermont.⁵ A spreadsheet summary of the results

⁵ Vermont Hazardous Waste Management Regulations, December 2016.



compared to current hazardous waste criteria is included in Appendix E. These results suggest the following regarding the holding basin sludge

- Chromium and lead concentrations generated during the 2019 Phase II ESA exceeded the “Rule of 20” for the toxicity characteristic leaching procedure; however, total metals and TCLP metals data generated during the Corrective Action Investigation showed lower total metals concentrations not in excess of the “Rule of 20” concentrations, and non-detectable TCLP metals concentrations. The elevated total chromium and total lead concentrations could not be replicated during this Corrective Action Investigation.
- PCBs were present at concentrations well below 50 parts per million, which is EPA’s threshold for “Bulk Product Waste” and Vermont’s Hazardous Waste listing threshold. PCB concentrations below 1 ppm were generated during the Corrective Action Investigation and PCB concentrations greater than 1 ppm generated during the Phase II ESA were not replicated. These data indicate that the sludge is not hazardous or Bulk Product Waste due to PCB concentrations.
- The Corrective Action Investigation confirmed the 2019 Phase II finding that PFAs are present in the sludge at measurable concentrations. At present, there is no Vermont threshold for designation of solid matrices containing PFAs as hazardous waste. PFAs are not listed as hazardous waste under RCRA at the present time. Legislation in the US Congress in January 2020 proposes to regulate PFOA and PFOS in waste at the national level, but it has not passed and become law as of March 2020. This uncertain regulatory status has led to the disposal contractors handling PFA containing waste as hazardous and recommending incineration in most instances.
- The Corrective Action Investigation confirmed the 2019 Phase II finding that Dioxin Toxicity Equivalency (TEQ) as 2,3,7,8-TCDD was present in the lagoon sludge samples.

B. Soil Sample Results

On May 8, 2020, LEE oversaw advancement of three soil borings (LF-5 through LF-7) at the locations shown on the attached Holding Basin Sampling Map. T&K Drilling advanced three soil borings using a Geoprobe with a 2.25” x 3-foot stainless steel sampler. Continuous soil sampling was conducted to the terminal depth of each boring (15’). Soil samples were screened for VOCs using a calibrated PID and bag headspace screening protocol. Samples for laboratory analysis were collected from 0-18” as specified in the SSQAPP due to no obvious contamination at lower depths, and were submitted to Con-Test and ALS for analysis. Soil boring logs are in Appendix B.



Results of soil sampling were tabulated in comparison to the current I-Rule non-residential soil standards. The following observations were made:

- No VOCs were detected during field screening. All PID readings were 0.0-0.1 ppm.
- No VOCs were reported in soil samples during laboratory testing, except for a trace of toluene in LF-6 five orders of magnitude below the non-residential VSS.
- PAHs were not reported in the three soil samples. Non-detect PAH concentrations were converted to TEQ relative to benzo[a]pyrene using methodology specified in the I-Rule. None of the soil samples had calculated PAH TEQ in excess of the DEC's Statewide Urban Background concentration.
- Four of the eight RCRA metals were reported in each of the soil samples, including arsenic, barium, lead and chromium. Mercury was reported in LF-5 at a low concentration. None of the metals concentrations exceeded current non-residential soil standards.
- All three shallow soil samples were subject to a "Method 2 Cumulative Risk Assessment" (CRA) using a calculation template provided by DEC and per Appendix E of the I-Rule. The results of the Method 2 CRA indicated no exceedences of the risk thresholds at any of the three sampling locations.

The tabulated soil testing results, Method 2 CRA worksheets, and laboratory report are in Appendix E.

C. Groundwater

On June 9-10, 2020, LEE collected groundwater samples for PFAs analysis using low-flow sampling techniques at pre-existing wells IP-1, -2, -3, -4, -6, -7 and -8. IP-5 was beneath a large pile of paper sludge on those dates and was not accessed for sampling. Prior to groundwater sample collection, depth to water was measured in from the top of casing reference points. These data were used to calculate the water level elevations. Tabulated water level elevation data are included in Appendix E. The water level elevations were within 0.1' of those collected in August 2019.

Groundwater samples were collected using a Geotech stainless steel bladder pump with polyethylene bladders and tubing. Purging took place at approximately 200 milliliters per minute until stabilization of indicator parameters took place, except at IP-6, which was purged dry. Groundwater samples were collected directly from the pump discharge tubing into laboratory-supplied containers. The groundwater samples were submitted to Con-Test for analysis.

The groundwater testing results were tabulated in comparison to the current VGES and indicate that PFAs were present in the samples at concentrations below the VGES. Reported PFAs concentrations were comparable to and somewhat less than



those generated during the 2019 Phase II ESA. A tabular summary of the groundwater monitoring data and the laboratory report are included in Appendix E.

13.0 SITE-SPECIFIC RISK ASSESSMENT

The 2019 Phase II ESA flagged vanadium concentrations in soil as elevated over the residential VSS (2.8 mg/kg) and below the non-residential VSS (27 mg/kg). The reported vanadium concentrations in soil at the Site ranged from 6.6-17.9 mg/kg. Although the non-residential use of the Site results in no observed exceedences of the VSS for vanadium, a survey of accessible geochemical data was performed in response to vanadium soils data generated during the Phase II ESA.

Vanadium is not a common soil analyte in contaminated Site investigations in Vermont, and the data presented are derived from a few listed Sites that tested soils for vanadium, and from more aerially extensive research. LEE researched the ten closest hazardous Sites via the ANR Atlas and found that none of them had vanadium soils data available for review.

The conclusion of this survey is that the range of vanadium concentrations in Site soils are not abnormally elevated with respect to other locations, and are toward the low end of reported concentration ranges at other Vermont locations. LEE’s research found no evidence to suggest that paper manufacturing is a specific anthropogenic contributor of environmental vanadium, and the vanadium concentrations reported during the Phase II ESA are likely to be naturally occurring.

The following table summarizes the background vanadium soils data compiled during this survey (range of reported vanadium concentrations in mg/kg, ppm).

LFP Brattleboro	Richmond Creamery	St. Albans AFB	USGS 2013 Vermont	Vermont Yankee Vernon	ASTDR Global	USGS 2017 USA	NJDEP 1993 Statewide
6.6-17.9	7.7-30	8-60	14-137	5.6-21.8	100	10-500	<2-96 (rural) 40-800 (urban)

The following specific Sites and studies specific to Vermont were found.

- A Phase II ESA conducted at the former Richmond Creamery (SMS Site #2008-3835) in 2010 indicated vanadium levels in soils ranging from 7.7-30 mg/kg.⁶
- A Phase II ESA conducted at the St. Albans Air Force Base (SMS Site 91-1109) in 2007 indicated vanadium concentrations ranging from 8-60 ppm.⁷
- A 2013 USGS geochemical survey report of soils in the continental US indicated that vanadium concentrations at 15 sampled locations in Vermont

⁶ Johnson Co., 2010 on file at DEC.

⁷ ECS, 2007 on file at DEC.



ranged from 14-137 mg/kg and the average concentration was 70 mg/kg. The samples were collected from agricultural sites and forested upland soils.⁸

- Soils data collected from the Vermont Yankee Nuclear Power Plant Site in Vernon (SMS Site 2020-4930) indicates that the Site background level of vanadium is 29 mg/kg, which was approved by the DEC in October 2019. The range of vanadium concentrations on the property during Corrective Action investigations was 5.6-21.8 mg/kg.⁹ In a published newspaper article, DEC Commissioner Emily Boedecker said the Site investigation revealed that vanadium is "uniformly distributed in all soil samples above the Vermont soil standards, but there is no evidence that those concentrations are the result of Vermont Yankee plant operations."¹⁰

The following more aerially diverse studies were found:

- The Agency for Toxic Substances and Disease Registry (ASTDR)¹¹ indicates, "Vanadium is widely distributed in the earth's crust at an average concentration of 100 ppm (approximately 100 mg/kg)... Natural releases of vanadium to soil result from weathering of rock-bearing vanadium minerals, precipitation of vanadium particulate from the atmosphere, deposition of suspended particulate from water, and plant and animal wastes. The largest amount of vanadium released to soil occurs through the natural weathering of geological formations.... Anthropogenic releases of vanadium to soil are less widespread than natural releases and occur on a smaller scale. These include the use of certain fertilizers containing materials with a high vanadium content such as rock phosphate (10-1,000 mg/kg vanadium), superphosphate (50-2,000 mg/kg vanadium), and basic slag (1,000-5,000 mg/kg vanadium) as well as disposal of industrial wastes such as slag heaps and mine tailings.
- A 2017 USGS Professional Paper indicated that the average content of vanadium in US soils ranges from 10-500 ppm, and that anthropogenic sources of vanadium include steel alloy production, chemical catalyst, ceramic, glass and pigment manufacturing, and in battery production.¹²
- A 1993 summary of soil constituents in New Jersey prepared by the NJ DEP indicated that vanadium in rural environments ranged from <2 -96 ppm, with slightly higher levels in suburban environments. Urban environments had significantly higher vanadium concentrations, ranging from 40-800 mg/kg.

⁸ <https://catalog.data.gov/dataset?tags=vanadium>

⁹ Haley Aldrich Memorandum April 13, 2020, on file at DEC.

¹⁰ Brattleboro Reformer, October 17, 2019.

¹¹ <https://www.atsdr.cdc.gov/toxprofiles/tp58-c6.pdf>

¹² <https://pubs.er.usgs.gov/publication/pp1802U>



14.0 MAPS

A Site location map, updated ANR Atlas Map with Waste Management Data, and a map showing the Holding Basin Sampling Locations are attached.

15.0 DISCUSSION

Sludge

Holding basin sludge testing performed during this Corrective Action investigation and the earlier Phase II ESA indicates that the sludge contains dioxin and PFAs that will need to be taken into account when disposal options are evaluated. The sludge does not appear to be hazardous due to PCBs, VOCs or SVOCs concentrations, or reactivity, ignitibility or corrosivity. A silt clay liner was found 1-2' below the sludge surface, approximately 4-6" thick. Based on the geometry of the holding basin and the sludge depth, approximately 500 cubic yards of sludge is estimated to be present.

Soils

Soil testing performed during this Corrective Action investigation at LF-5, -6 and -7 indicates these soils are unaffected by contamination. No VOCs, PAHs, PCBs, or abnormal levels of metals were encountered. PAH TEQ is below the statewide urban background concentration. Dioxin TEQ is below the non-residential VSS. Results of Level 2 CRA show no elevated risk to human health.

Groundwater

Results of well gauging indicate the groundwater was virtually the same elevation and configuration as that presented during the Phase II ESA, and similar conclusions can be drawn regarding flow direction and gradient.

Results of groundwater testing indicate that PFAs are present. The sum of concentrations of five Vermont-regulated PFAs did not exceed the VGES. PFA concentrations generated during the Corrective Action Investigation were slightly less than those generated during the Phase II ESA. This appears to be due to not including laboratory estimated values in the current data. Con-Test did not report PFA concentrations below the reporting limit, while the Phase II ESA included estimated values.

16.0 DATA PRESENTATION

LEE compiled current and previous analytical data for the Site in tabular format with comparisons to the current state and federal thresholds presented in the I-



Rule, Groundwater Protection Rule, and the VHWMR. These tables and the supporting laboratory data are in Appendix E. Observations regarding the data and comparison to current screening values are presented in Section 12.

17.0 QA/QC SAMPLE RESULTS

LEE's quality assurance officer performed data validation on all field and laboratory data generated during the Phase II ESA, according to LEE's current generic QAPP (RFA 19093) and the approved SSQAPP Addendum dated March 18, 2020. The results are included in Appendix F. The recommendation is that all data are usable for their intended purpose, without qualification.

18.0 INVESTIGATION DERIVED WASTE

Investigation derived waste were generated during the Phase II ESA including soil and groundwater. Soils were used to backfill the soil borings. Purge water from the groundwater wells was drummed pending receipt of the analytical results.

19.0 CONCLUSIONS AND RECOMMENDATIONS

LEE completed a Corrective Action Investigation at Long Falls Paperboard pursuant to the approved SSQAPP Addendum dated March 18, 2020 and has developed the following conclusions.

1. Soil testing indicates no contamination of concern in the sandy soils surrounding the holding basin lagoon. This suggests that overtopping in the past was not a frequent or significant occurrence.
2. Holding basin sludge testing indicates the presence of dioxin and PFAs, which will influence disposal options.
3. Groundwater PFA concentrations are uniformly below the VGES. Drummed purge water can be disposed of on Site.
4. Results of the background vanadium soil review suggest that vanadium is not abnormally elevated in soils at the Site, and are lower concentrations than other Vermont Sites.

LEE makes the following recommendations in connection with the Site:

1. An Evaluation of Corrective Action Alternatives (ECAA) and a Corrective Action Plan (CAP) should be developed to address decommissioning of the holding basin.
2. No further action appears warranted with respect to on-Site soils or groundwater PFA concentrations. The groundwater monitoring wells installed during the Phase II ESA should be properly abandoned. Drummed purge water should be disposed of on-Site.



3. No further action is warranted with respect to vanadium concentrations in soil.
4. Active remedial measures do not appear to be warranted for other investigated RECs as presented in Section 8.0 of this report (historic #6 fuel oil release, historic gasoline/diesel USTs, sumps, floor drains, equipment yard, drums, filled areas, adjacent Sites, septic systems or the rail line).

20.0 SIGNATURE AND CERTIFICATION

“I certify under penalty of perjury that I am an environmental professional and that all content contained within this deliverable is to the best of my knowledge true and correct.”

A handwritten signature in black ink, appearing to read 'ALAN LIPTAK'.

Alan Liptak, Environmental Professional

21.0 MAPS AND APPENDICIES

Maps

- Site Location Map
- ANR Atlas Map
- Holding Basin Sampling Map

- A. Standard Operating Procedures
- B. Soil Boring Logs and Liquid Level Measurement Data
- C. Photographic Documentation
- D. Field Notes and Underground Utility Report
- E. Laboratory Results
- F. Data Validation Report



Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

MAPS

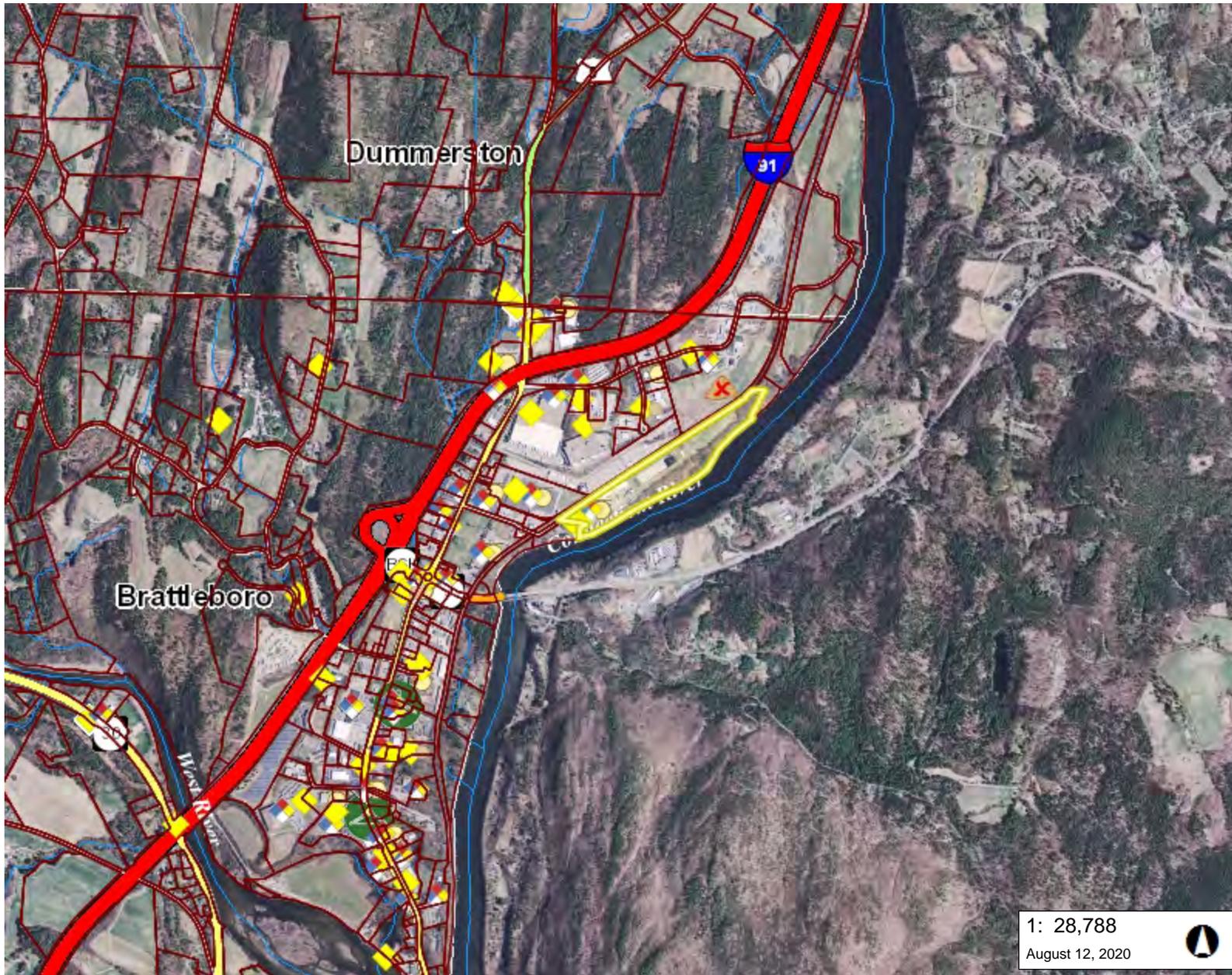


Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont



2018 USGS Map

LE #: 18-122
Date: March 16, 2020
Source: USGS Store



LEGEND

- Landfills**
 - OPERATING
 - CLOSED
- Land Use Restrictions**
 - Class IV GW Reclass
 - Class VI GW Reclass
 - Deed Restriction
 - Easement
 - Land Record Notice
 - Other
- Hazardous Site
- Hazardous Waste Generators
- Brownfields
- Salvage Yard
- Aboveground Storage Tank
- Underground Storage Tank (w/)
- Dry Cleaner
- Parcels (standardized)
- Parcels (non-standardized)
- Roads**
 - Interstate
 - Principal Arterial
 - Minor Arterial
 - Major Collector
 - Minor Collector
 - Local
 - Not part of function Classification S

1: 28,788
August 12, 2020

NOTES

Map created using ANR's Natural Resources Atlas

1,462.0 0 731.00 1,462.0 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere 1" = 2399 Ft. 1cm = 288 Meters

© Vermont Agency of Natural Resources THIS MAP IS NOT TO BE USED FOR NAVIGATION

DISCLAIMER: This map is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. ANR and the State of Vermont make no representations of any kind, including but not limited to, the warranties of merchantability, or fitness for a particular use, nor are any such warranties to be implied with respect to the data on this map.



21 North Main Street Unit #1
 Waterbury, Vermont
 Phone: 802-917-2001
 www.leenv.net

Holding Basin Sampling Map Long Falls Paperboard 161 Wellington Road Brattleboro, Vermont

Legend

- Soil Boring/Soil Sample
- Sludge Sample
- Paper Sludge Piles

Drawing Date: 8/13/20
 LEE Project #: 18-122



Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

APPENDIX A

Standard Operating Procedures



Field Standard Operating Procedures used during this work:

- LEE SOP A: Soil Sampling
- LEE SOP B: Soil Borings, Groundwater Monitoring Well Installation and Low flow groundwater sampling
- LEE SOP E: Sample Handling
- LEE SOP F: PID Operation
- LEE SOP G: pH Conductivity and Temperature Meter Operation
- LEE SOP H: Turbidity Meter Operation
- LEE SOP I: Electronic Water Level Measurement Operation



Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

APPENDIX B

Soil Boring Logs
Liquid Level Measurement Data



SOIL BORING LOG

SHEET 1 OF 1

Long Falls Paperboard, 161 Wellington Road, Brattleboro, VT

May 8, 2020

DRILLER

T&K Drilling

LEE PROJECT #: 18-122

ON-SITE REP.

Alan Liptak

BORING NUMBER: LF-5

GROUND SURFACE: NOT MEASURED

REFUSAL: DEPTH Not encountered

TOP OF ROCK: DEPTH Not encountered

BOTTOM OF HOLE DEPTH: DEPTH 15.0 FT.

BORING ADVANCED BY: Geoprobe w/ 2.25" x 3' S

STRATUM DEPTH (FT)	SAMPLE TYPE	FIELD RESULTS		PENETRATION/ RECOVERY (INCHES)	MOISTURE	FIELD SOIL IDENTIFICATION
		Blow Counts	PID (ppm)			
0.0	Soil	N/A	0.1	36"/36"	Moist	Poorly-Sorted Sand (SP)-tan to medium brown fine and medium sand, homogeneous, rounded, no odor. Collected soil sample LF-5 from 0-18" for laboratory analysis.
3.0	Soil	N/A	0.0	36"/36"	Moist	
6.0	Soil	N/A	0.0	36"/36"	Moist-wet	Poorly-Sorted Sand with Silt (SP-SM)- tan fine and medium sand with silt, stratified, no odor.
9.0	Soil	N/A	0.0	36"/36"	Moist-wet	
12.0	Soil	N/A	0.0	36"/36"	Moist-wet	Poorly-sorted sand with Silt (SP SM)-tan fine and medium sand with silt, homogenous, no odor.
15.0				Bottom of boring		



SOIL BORING LOG

SHEET 1 OF 1

Long Falls Paperboard, 161 Wellington Road, Brattleboro, VT

May 8, 2020

DRILLER

T&K Drilling

LEE PROJECT #: 18-122

ON-SITE REP.

Alan Liptak

BORING NUMBER: LF-6

GROUND SURFACE: NOT MEASURED

REFUSAL: DEPTH Not encountered

TOP OF ROCK: DEPTH Not encountered

BOTTOM OF HOLE DEPTH: DEPTH 15.0 FT.

BORING ADVANCED BY: Geoprobe w/ 2.25" x 3' S

STRATUM DEPTH (FT)	SAMPLE TYPE	FIELD RESULTS		PENETRATION/ RECOVERY (INCHES)	MOISTURE	FIELD SOIL IDENTIFICATION
		Blow Counts	PID (ppm)			
0.0	Soil	N/A	0.0	36"/36"	Moist	Poorly-Sorted Sand with Silt (SP-SM)-tan to medium brown fine and medium sand, homogeneous, rounded, no odor. Collected soil sample LF-6 from 0-18" for laboratory analysis.
3.0	Soil	N/A	0.0	36"/36"	Moist	
6.0	Soil	N/A	0.0	36"/36"	Moist	
9.0	Soil	N/A	0.0	36"/36"	Moist	
12.0	Soil	N/A	0.0	36"/36"	Moist	Poorly-sorted sand with Silt (SP SM)-tan fine and medium sand with silt, stratified, dense, no odor.
15.0				Bottom of boring		



SOIL BORING LOG

SHEET 1 OF 1

Long Falls Paperboard, 161 Wellington Road, Brattleboro, VT

May 8, 2020

DRILLER

T&K Drilling

LEE PROJECT #: 18-122

ON-SITE REP.

Alan Liptak

BORING NUMBER: LF-7

GROUND SURFACE: NOT MEASURED

REFUSAL: DEPTH Not encountered

TOP OF ROCK: DEPTH Not encountered

BOTTOM OF HOLE DEPTH: DEPTH 15.0 FT.

BORING ADVANCED BY: Geoprobe w/ 2.25" x 3' S

STRATUM DEPTH (FT)	SAMPLE TYPE	FIELD RESULTS		PENETRATION/ RECOVERY (INCHES)	MOISTURE	FIELD SOIL IDENTIFICATION
		Blow Counts	PID (ppm)			
0.0	Soil	N/A	0.0	36"/36"	Moist	Poorly-Sorted Sand (SP)-tan fine and medium sand, rounded homogeneous, no odor. Collected LF-7 from 0-18" for laboratory analysis.
3.0	Soil	N/A	0.0	36"/36"	Moist	
6.0	Soil	N/A	0.0	36"/36"	Moist	Poorly-sorted sand with Silt (SP SM)-tan fine and medium sand with silt, homogenous, no odor.
9.0	Soil	N/A	0.0	36"/36"	Moist	Well-Sorted Sand (SW)-tan to medium brown fine, medium and coarse sand, stratified, no odor.
12.0	Soil	N/A	0.0	36"/36"	Moist-wet	Poorly-sorted sand (SP)-tan fine and medium sand, homogenous, no odor.
15.0				Bottom of boring		

**Liquid Level Monitoring Data
Long Falls Paperboard
Brattleboro, Vermont**



Measurement Date: August 29-30, 2019 (by Stone Environmental)

Well I.D.	Top of Casing Elevation	Depth To Product btoc	Depth To Water btoc	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
IP-1	95.93	-	69.05	-	-	-	-	26.88
IP-2	93.52	-	67.00	-	-	-	-	26.52
IP-3	94.76	-	67.94	-	-	-	-	26.82
IP-4	95.86	-	69.12	-	-	-	-	26.74
IP-5	95.54	-	68.83	-	-	-	-	26.71
IP-6	101.82	-	75.35	-	-	-	-	26.47
IP-7	93.14	-	66.85	-	-	-	-	26.29
IP-8	100.72	-	74.50	-	-	-	-	26.22

Measurement Date: June 9-10, 2020 (LEE)

Well I.D.	Top of Casing Elevation	Depth To Product btoc	Depth To Water btoc	Product Thickness	Specific Gravity Of Product	Water Equivalent	Corrected Depth To Water	Corrected Water Table Elevation
IP-1	95.93	-	69.04	-	-	-	-	26.89
IP-2	93.52	-	67.01	-	-	-	-	26.51
IP-3	94.76	-	67.92	-	-	-	-	26.84
IP-4	95.86	-	69.12	-	-	-	-	26.74
IP-5	95.54	-	NM	-	-	-	-	NM
IP-6	101.82	-	75.27	-	-	-	-	26.55
IP-7	93.14	-	66.81	-	-	-	-	26.33
IP-8	100.72	-	74.40	-	-	-	-	26.32

Notes:

All Values Reported in Feet

btoc - Below Top of Casing

Elevation data relative to 100' assumed datum



Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

APPENDIX C

Photographic Documentation

**Photographic Documentation
Corrective Action Investigation
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont
LEE #18-122**



Photograph ID: 001
Date: April 23, 2020
Location:
Holding Basin
Direction:
Looking west
Unused wastewater holding lagoon
Sampling locations LF-1 through -4



Photograph ID: 002
Date: April 23, 2020
Location:
Holding basin east flank
Direction:
Looking west
Comments:
Location of LF-5 approximately
6' east of monitoring well IP-6



Photographic Documentation
Phase I Environmental Site Assessment
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont
LEE #18-122



Photograph ID: 003
Date: April 23, 2020
Location:
Holding basin south flank

Direction:
Looking west

Comments:

Location of LF-6, relocated from intended location due to sludge.



Photograph ID: 004
Date: June 9, 2020
Location:
IP-2

Direction:
Looking west

Comments:

Groundwater monitoring



Photographic Documentation
Phase I Environmental Site Assessment
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont
LEE #18-122



Photograph ID: 005
Date: June 9, 2020
Location:
IP-5

Direction:
Looking west

Comments:

Paper sludge over IP-5



Photograph ID: 006
Date: June 10, 2020
Location:
IP-6

Direction:
Looking west

Comments:

Groundwater monitoring





Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

APPENDIX D

Field Notes



A handwritten signature in black ink, appearing to read "Tyler Button", is positioned to the right of the logo.

Tyler Button
Vermont Underground Locators

20-95 GENERAL LOCATE

161 Wellington Rd Brattleboro, VT 05301, USA

Tuesday, April 28, 2020

Prepared For LE Environmental

15



LG-1 — 4 IN LAGOON

VTUL conducted a GPR sweep and Passive sweep in the lagoon. No utilities were detected.



WATER AND ELECTRIC LINE



ELECTRIC LINE AND WATER/RETURN LINE



WATER/RETURN LINES



ELECTRIC LINE NEAR LG-5



ELECTRIC NEAR LG-5



ELECTRIC LINE



WATERLINE



WATERLINE



WATER AND ELECTRIC LINES NEAR LG-6



ELECTRIC LINE



SEWER MANHOLE NEAR LG-7

This manhole did not have any outlet piping visible to run a rodder down to locate. VTUL gridded out the area to attempt to locate the sewer outlet line with no success.



SEWER MANHOLE NEAR LG-7



LG-7

**LONG FALLS PAPERBOARD
BRATTLEBORO, VT
LAGOON AREA SOIL SAMPLING FIELD FORM
JOB # 18-122**

DATE: 5/8/2020 INSPECTOR(S): AZ

Equipment Needed: PID; containers/cooler, Soil sampling equipment, PPE, decon stuff.

SOIL SAMPLING

- Advance 3 soil borings 15' depth with geoprobe.
- Screen w/ PID
- Collect soil samples from 0-18" depth or deeper if contamination is detected deeper
- Submit 3 soil samples to Con-test for analysis of:
 - VOCs EPA M8260c (3-40 ml MEOH/bisulfite)
 - PAH M8270d, RCRA 8 metals + vanadium 6020 and PCBs M8082 with Soxhlet extraction (1 8 oz amber glass)
- Submit 3 soils samples to EAI for analysis of Dioxin/Furan via EPA Method 8290 (1-4 oz amber)

Indicate soil sample locations on site map

<u>Sample #</u>	<u>Location</u>	<u>Depth</u>	<u>Time</u>	<u>PID</u>
LF-5	East of lag.	0-18"	0915	0.1
LF-6	So. " "	0-18"	0945	0.0
LF-7	SW " "	0-18"	1030	0.0

**LONG FALLS PAPERBOARD
BRATTLEBORO, VT
LAGOON AREA SLUDGE SAMPLING FIELD FORM
JOB # 18-122**

DATE: 5/8/2020 INSPECTORS(S): R

Equipment Needed: PID; containers/cooler, Soil sampling equipment, PPE, decon stuff.

SOIL SAMPLING

- Advance 4 borings with hand auger to clay liner depth
- Screen w/ PID
- Collect sludge samples from full depth range
- Submit 4 sludge samples and 1 duplicate to Con-test for analysis of:
 - 4-16 ounce amber (PCBs M8082 with Soxhlet extraction, TPH M 8100, VOCs M8260c, SVOCs M8270d, TCLP and Total RCRA 8 metals + vanadium 6020)
 - 1-8 oz amber (pH, ignitibility, reactivity)
 - 2-250 ml plastic (PFAs)
- Submit 4 sludge samples and 1 duplicate to EAI for analysis of Dioxin/Furan via EPA Method 8290 (1-4 oz amber)

Indicate soil sample locations on site map

<u>Sample #</u>	<u>Location</u>	<u>Depth</u>	<u>Time</u>	<u>PID</u>
<u>LF-1</u>	E-ctr	0-1	1135	0.0
<u>LF-2</u>	E-ctr	0-1	1115	0.1
<u>LF-3</u>	W-ctr	0-1'	1100	0.0
<u>LF-4</u>	West	0-2'	1045	0.0
<u>Duplicate</u>	E-centr	0-1	1115	

1'
1'
1'
2'
~~2'~~

fill - silt clay liner encountered →

**LE Environmental LLC
Long Falls Paper, Brattleboro
Groundwater monitoring
Field Data Form**

Per approved work plan

Collect one groundwater sample from IP-1 through IP-8 and a duplicate
PFAs M537.1

Collect one duplicate sample

Equipment

LE Equipment

pH/Conductivity Meter
Truck
Hand Tools
5-gallon pails
WLI

Deep cycle battery

Geotech Equipment

Turbidity Meter
Bladder pump and controller

Supplies

LE Supplies

plastic containers (for field measurements)
paper towels
baggies
gloves
pens
water
soap

Con-Test

9 sets bottles, COC form

LE Environmental LLC
 Long Falls Paper, Brattleboro
 Groundwater monitoring
 Field Data Form

Monitoring Well IP-1
 75' TD, 69.05' to water summer 2019

Technician: AL

Date: 6/9/20

Location: Inset corner rear of bldg next to load dock

Depth to Water: 69.04

Time	pH	Cond	Temp	Turb
1305	6.81	1133	16.4	726
1310	6.81	1129	14.7	190
1315	6.80	1117	14.4	43.2
1319	6.84	1123	14.4	19.0
1325	6.91	1123	14.4	6.96
1330	6.78	1123	14.4	13.1
1335	6.84	1122	14.4	12.2

~ 5' H₂O
 Muddy Tot ~ 7³

Sample +
 Duplicate
 1340

LE Environmental LLC
 Long Falls Paper, Brattleboro
 Groundwater monitoring
 Field Data Form

Monitoring Well IP-4
 75' TD, 69.12' to water summer 2019

Technician: AL

Date: 6/9/20

Location: Grass nr. WWTF

Depth to Water: 69.12

Time	pH	Cond	Temp	Turb
1705	6.07	1525	19.4	55.2
1710	6.13	1611	17.2	60.1
1715	5.93	1684	15.5	38.7
1720	5.92	1683	15.0	23.8
1730	5.98	1675	16.8	17.0
1735	5.90	1680	15.0	6.83
1740	5.95	1674	15.2	7.45

~ 6' WC
 Top of pump
 ~ 7'
 (pump skip 3k)
 Sampled
 1745

LE Environmental LLC
 Long Falls Paper, Brattleboro
 Groundwater monitoring
 Field Data Form

Monitoring Well IP-7
 75' TD, 66.85' to water summer 2019

Technician: AL

Date: 6/9/2020

Location: Back Lot nr. Gas Trailan

Depth to Water: 66.81' Fill 30 / Disc 20

Time	pH	Cond	Temp	Turb
1120	6.53	1023	16.3	42.1
1125	6.77	940	14.6	24.1
1130	6.72	943	15.0	11.5
1135	6.76	941	14.6	5.52
1140	6.78	943	14.5	4.14
1145	6.81	939	14.6	2.40
1150	6.81	941	14.6	1.04
1155	6.81	937	14.8	0.54

~67' 8" #20
 Screen ~ 71
 Set pump top ~
 ~ 70'

Sampled
 1156.

LE Environmental LLC
 Long Falls Paper, Brattleboro
 Groundwater monitoring
 Field Data Form

Monitoring Well IP-8
 82' TD, 74.50' to water summer 2019

Technician: AZ

Date: 6/10/20

Location: East side Dagoons E. 2 Row 1

Depth to Water: 74.40'

Time	pH	Cond	Temp	Turb
0935	6.67	637	15.2	252
0945	6.87	637	14.5	48.2
0950	6.93	635	14.2	259
0955	6.89	641	13.0	299
1000	6.87	635	13.0	187
1005	6.82	647	12.8	71.3
1010	6.77	650	12.8	52.5
1015	6.86	653	12.8	31.6
1020	6.86	656	12.9	27.2
1030	6.88	660	13.0	31.8

Clean
up

sampled
1030

~7.5' H₂O
 Top of pump
 78' (~81)
 very muddy
 Low yield
 breached screen?
 supposed to
 be 82' deep
 but pump is
 ~80' on bottom
 full of sed?



Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

APPENDIX E

Laboratory Results

**Brownfields Cleanup Site Investigation
Holding Basin Sludge Sample Results
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont**



Page 1 of 2

Sample ID Sample Date Collected by/Laboratory PID (ppm)	IP-6A (mg/kg)	IP-06FD (mg/kg)	LF-1	LF-2	LF-3	LF-4	Duplicate LF-2	TCLP "Rule of 20"	EPA/DEC TCLP Threshold (mg/l) (2)	
	8/15/19		5/8/20							
	Stone/Alpha (1)		LEE/Con-Test Analytical							
	NT	NT	0.0	0.1	0.1	0.0	0.1			
Arsenic (Total, mg/kg, dry)	16	6.8	ND <5.1	ND <4.9	ND <5.4	ND <6.0	ND <5.0	100	---	
Arsenic (TCLP, mg/l)	NT	NT	ND <0.050	ND <0.050	ND <0.050	ND <0.050	ND <0.050	---	5.0	
Barium (Total, mg/kg, dry)	156	143	130	93	110	93	85	2000	---	
Barium (TCLP)	NT	NT	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	---	100.0	
Benzene	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	10	0.5	
Cadmium (Total, mg/kg, dry)	8.55	3.66	ND <0.51	ND <0.49	ND <0.54	ND <0.60	ND <0.5	20	---	
Cadmium (TCLP)	NT	NT	ND <0.010	ND <0.010	ND <0.010	ND <0.010	ND <0.010	---	1.0	
Carbon tetrachloride	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	10	0.5	
Chlordane	NT	NT	NT	NT	NT	NT	NT	1	0.03	
Chlorobenzene	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	2000	100.0	
Chloroform	0.0013	0.004	ND <0.22	ND <0.23	ND <0.24	ND <0.26	ND <0.20	120	6.0	
Chromium (Total, mg/kg, dry)	311	140	45	42	44	29	47	100	---	
Chromium (TCLP)	NT	NT	ND <0.050	ND <0.050	ND <0.050	ND <0.050	ND <0.050	---	5.0	
o-Cresol (2-methylphenol)	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	4000	200.0	
m-Cresol (3-methylphenol)	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	4000	200.0	
p-Cresol (4-methylphenol)	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	4000	200.0	
Cresol (total)	NT	NT	NT	NT	NT	NT	NT	4000	200.0	
2,4-D	NT	NT	NT	NT	NT	NT	NT	200	10.0	
1,4-Dichlorobenzene	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	150	7.5	
1,2-Dichloroethane	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	10	0.5	
1,1-Dichloroethene	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	14	0.7	
2,4-Dinitrotoluene	NT	NT	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	3	0.13	
Endrin	NT	NT	NT	NT	NT	NT	NT	0.4	0.02	
Heptachlor/Heptachlor Epoxide	NT	NT	NT	NT	NT	NT	NT	0	0.008	
Hexachlorobenzene	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	3	0.13	
Hexachlorobutadiene	ND	ND	ND <0.11	ND <0.12	ND <0.12	ND <0.13	ND <0.10	10	0.5	
Hexachloroethane	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	60	3.0	
Lead (Total, mg/kg, dry)	633	555	65	60	43	32	56	100	---	
Lead (TCLP)	NT	NT	ND <0.10	ND <0.10	ND <0.10	ND <0.10	ND <0.10	---	5.0	
Lindane	NT	NT	NT	NT	NT	NT	NT	8	0.4	
Mercury (Total, mg/kg, dry)	3.45	3.04	0.22	0.47	0.18	0.12	0.45	4	---	
Mercury (TCLP)	NT	NT	ND <0.00010	ND <0.00010	ND <0.00010	ND <0.00010	ND <0.00010	---	0.2	
Methoxychlor	NT	NT	NT	NT	NT	NT	NT	200	10.0	
2-Butanone(MEK)	ND	ND	ND <2.2	ND <2.3	ND <2.4	ND <2.6	ND <2.0	4000	200.0	
Nitrobenzene	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	40	2.0	
Pentachlorophenol	ND	ND	ND <1.0	ND <1.0	ND <2.2	ND <1.2	ND <1.0	2000	100.0	

NOTES:

(1) Stone/Alpha Data from Phase II Environmental Site Assessment Report, Long Falls Paperboard, October 2019

(2) TCLP Thresholds from EPA Hazardous Waste Characteristics, October 2009 and Vermont DEC Hazardous Waste Management Regulations, December 31, 2016

(3) PFAs values per DEC 1-Rule, sum of PFOS, PFOA, PFHxS, PFHpA, PFNA (ug/kg)

**Brownfields Cleanup Site Investigation
Holding Basin Sludge Sample Results
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont**



Page 2 of 2

Sample ID Sample Date Collected by/Laboratory PID (ppm)	IP-6A (mg/kg)	IP-06FD (mg/kg)	LF-1	LF-2	LF-3	LF-4	Duplicate LF-2	TCLP "Rule of 20"	EPA/DEC TCLP Threshold (mg/l) (2)	
	8/15/19		5/8/20							
	Stone/Alpha (1)		LEE/Con-Test Analytical							
	NT	NT	0.0	0.1	0.1	0.0	0.1			
Pyridine	ND	ND	ND<1.0	ND<1.0	ND<2.2	ND<1.2	ND<1.0	100	5.0	
Selenium (Total, mg/kg, dry)	1.08	0.62	ND<5.1	ND<4.9	ND<5.4	ND<6.0	ND<5.0	20	---	
Selenium (TCLP)	NT	NT	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	---	1.0	
Silver (Total, mg/kg, dry)	0.811	0.71	0.68	ND<0.49	0.54	0.80	ND<0.5	100	---	
Silver (TCLP)	NT	NT	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	---	5.0	
Tetrachloroethene (PCE)	ND	ND	ND<0.11	ND<0.12	ND<0.12	ND<0.13	ND<0.10	14	0.7	
Toxaphene	NT	NT	NT	NT	NT	NT	NT	10	0.5	
Trichloroethene (TCE)	ND	ND	ND<0.11	ND<0.12	ND<0.12	ND<0.13	ND<0.10	10	0.5	
2,4,5-Trichlorophenol	NT	NT	ND<1.0	ND<1.0	ND<2.2	ND<1.2	ND<1.0	8000	400.0	
2,4,6-Trichlorophenol	NT	NT	ND<1.0	ND<1.0	ND<2.2	ND<1.2	ND<1.0	40	2.0	
2,4,5-TP Silvex	NT	NT	NT	NT	NT	NT	NT	20	1.0	
Vinyl Chloride	ND	ND	ND<0.22	ND<0.23	ND<0.24	ND<0.26	ND<0.20	4	0.2	

Sample ID Sample Date Collected by/Laboratory PID (ppm)	IP-6A (mg/kg)	IP-06FD (mg/kg)	LF-1	LF-2	LF-3	LF-4	Duplicate LF-2	EPA/DEC HW Threshold (mg/kg) (2)	
	8/15/19		5/8/20						
	Stone/Alpha (1)		LEE/Con-Test Analytical						
	NT	NT	0.0	0.1	0.1	0.0	0.1		
Aroclor - 1016	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12	50 (total)	
Aroclor - 1221	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12		
Aroclor - 1232	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12		
Aroclor - 1242	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12		
Aroclor - 1248	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12		
Aroclor - 1254	2.66	1.68	0.38	0.47	0.38	0.38	0.67		
Aroclor - 1260	0.865	1.04	ND<0.12	0.20	0.18	0.19	0.56		
Aroclor - 1262	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12		
Aroclor - 1268	ND	ND	ND<0.12	ND<0.12	ND<0.12	ND<0.14	ND<0.12		
pH	NT	NT	5.1	4.6	4.6	4.3	4.7	<2 or ≥10	
Percent Solids	58	62	65.5	65.2	59.8	55.5	65.3	None	
Reactivity (CN/S)	NT	NT	ND	ND	ND	ND	ND	250 / 500	
Per- and polyfluoroalkyl substances (PFAS)(mg/kg)	0.165	0.142	0.097	0.110	0.096	0.152	0.096	None	
2,3,7,8-TCDD Toxicity Equivalency	1.14E-06	1.14E-06	1.24E-05	2.38E-05	1.60E-05	1.15E-05	1.64E-05	None	
TPH	NT	NT	2,900	3,100	4,300	5,200	3,300	50,000	
Ignitibility/Flashpoint	NT	NT	Absent	Absent	Absent	Absent	Absent	Present/Absent	

NOTES:

(1) Stone/Alpha Data from Phase II Environmental Site Assessment Report, Long Falls Paperboard, October 2019

(2) TCLP Thresholds from EPA Hazardous Waste Characteristics, October 2009 and Vermont DEC Hazardous Waste Management Regulations, December 31, 2016

**Brownfields Cleanup Site Investigation
Soil Data Summary
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont**



Sample Identification	LF-5	LF-6	LF-7	EPA Industrial RSL	VSS Non-Residential
Sample Depth (ft. bg)	0-18"	0-18"	0-18"		
PID Reading (ppm)	0.1	0.0	0.0		
Sample Date	5/8/20				
VOCs, EPA Method 8260C (mg/kg)					
Acetone	ND<0.090	ND<0.087	ND<0.076	-	100,028
Acrylonitrile	ND<0.0054	ND<0.0052	ND<0.0045	1.1	-
tert-Amyl Methyl Ether (TAME)	ND<0.00090	ND<0.00087	ND<0.00076	-	-
Benzene	ND<0.0018	ND<0.0017	ND<0.0015	-	4.2
Bromobenzene	ND<0.0018	ND<0.0017	ND<0.0015	1,800	-
Bromochloromethane	ND<0.0018	ND<0.0017	ND<0.0015	-	597
Bromodichloromethane	ND<0.0018	ND<0.0017	ND<0.0015	1.3	-
Bromoform	ND<0.0018	ND<0.0017	ND<0.0015	86	-
Bromomethane	ND<0.0090	ND<0.0087	ND<0.0076	30	-
2-Butanone (MEK)	ND<0.036	ND<0.035	ND<0.030	-	26,991
tert-Butyl Alcohol (TBA)	ND<0.036	ND<0.035	ND<0.030	-	-
n-Butylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	51,100
sec-Butylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	102,200
tert-Butylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	102,200
tert-Butyl Ethyl Ether (TBEE)	ND<0.00090	ND<0.00087	ND<0.00076	-	-
Carbon disulfide	ND<0.0054	ND<0.0052	ND<0.0045	-	662
Carbon tetrachloride	ND<0.0018	ND<0.0017	ND<0.0015	-	2.2
Chlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	726
Chlorodibromomethane (Dibromochloromethane)	ND<0.00090	ND<0.00087	ND<0.00076	39	-
Chloroethane (ethyl chloride)	ND<0.0018	ND<0.0017	ND<0.0015	57,000	-
Chloroform	ND<0.0036	ND<0.0035	ND<0.0030	1.4	-
Chloromethane	ND<0.0090	ND<0.0087	ND<0.0076	460	-
2-Chlorotoluene	ND<0.0018	ND<0.0017	ND<0.0015	23,000	-
4-Chlorotoluene	ND<0.0018	ND<0.0017	ND<0.0015	23,000	-
1,2-Dibromo-3-chloropropane (DBCP)	ND<0.0018	ND<0.0017	ND<0.0015	0.064	-
1,2-Dibromoethane(EDB)	ND<0.00090	ND<0.00087	ND<0.00076	-	0.14
Dibromomethane	ND<0.0018	ND<0.0017	ND<0.0015	99	-
1,2-Dichlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	9,300	-
1,3-Dichlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	-
1,4-Dichlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	11	-
trans-1,4-Dichloro-2-butene	ND<0.0036	ND<0.0035	ND<0.0030	0.032	-
Dichlorodifluoromethane (Freon 12)	ND<0.018	ND<0.017	ND<0.015	370	-
1,1-Dichloroethane	ND<0.0018	ND<0.0017	ND<0.0015	-	13
1,2-Dichloroethane	ND<0.0018	ND<0.0017	ND<0.0015	-	1.7
1,1-Dichloroethene	ND<0.0036	ND<0.0035	ND<0.0030	1,000	-
cis-1,2-Dichloroethene	ND<0.0018	ND<0.0017	ND<0.0015	-	1,814
trans-1,2-Dichloroethene	ND<0.0018	ND<0.0017	ND<0.0015	-	18,137
1,2-Dichloropropane	ND<0.0018	ND<0.0017	ND<0.0015	-	9.1
1,3-Dichloropropane	ND<0.00090	ND<0.00087	ND<0.00076	23,000	-
2,2-Dichloropropane	ND<0.0018	ND<0.0017	ND<0.0015	-	-

NOTES:

Vermont Soil Standards (VSS) and Statewide Background Concentrations from July 2019 DEC I-Rule
EPA Regional Screening Levels (RSLs) from May 2020 RSL Summary Table. RSLs not included when a VSS exists.
Reported results or reporting limits equal to or in excess of residential soil thresholds are shaded.
Blank Cell=no published value (VSS) or published value not applicable (RSL)

**Brownfields Cleanup Site Investigation
Analytical Sensitivity and Project Criteria (Form K) Tables
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont**



Sample Identification	LF-5	LF-6	LF-7	EPA Industrial RSL	VSS Non-Residential
Sample Depth (ft. bg)	0-18"	0-18"	0-18"		
PID Reading (ppm)	0.1	0.0	0.0		
Sample Date	5/8/20				
VOCs, EPA Method 8260C (mg/kg)					
1,1-Dichloropropene	ND<0.0018	ND<0.0017	ND<0.0015	-	-
cis-1,3-Dichloropropene	ND<0.00090	ND<0.00087	ND<0.00076	8.2	-
trans-1,3-Dichloropropene	ND<0.00090	ND<0.00087	ND<0.00076	8.2	-
Diethyl Ether	ND<0.018	ND<0.0017	ND<0.0015	-	-
Diisopropyl Ether (DIPE)	ND<0.00090	ND<0.00087	ND<0.00076	9400	-
1,4-Dioxane	ND<0.090	ND<0.087	ND<0.076	17	-
Ethylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	22
Hexachlorobutadiene	ND<0.0018	ND<0.0017	ND<0.0015	5.3	-
2-Hexanone (MBK)	ND<0.018	ND<0.017	ND<0.015	1,300	-
IsoPropylbenzene (cumene)	ND<0.0018	ND<0.0017	ND<0.0015	-	264
p-Isopropyltoluene (p-cymene)	ND<0.0018	ND<0.0017	ND<0.0015	-	-
Methyl Acetate	ND<0.0018	ND<0.0017	ND<0.0015	35,000	-
MTBE	ND<0.0036	ND<0.0035	ND<0.0030	-	4,464
Methyl Cyclohexane	ND<0.0018	ND<0.0017	ND<0.0015	-	-
Methylene chloride	ND<0.018	ND<0.017	ND<0.015	1,000	-
4-Methyl-2-pentanone(MIBK)	ND<0.018	ND<0.017	ND<0.015	140,000	-
Naphthalene	ND<0.0036	ND<0.0035	ND<0.0030	-	16
n-Propylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	261
Styrene	ND<0.0018	ND<0.0017	ND<0.0015	35,000	-
1,1,1,2-Tetrachloroethane	ND<0.0018	ND<0.0017	ND<0.0015	8.8	-
1,1,2,2-Tetrachloroethane	ND<0.00090	ND<0.00087	ND<0.00076	2.7	-
Tetrachloroethene (PCE)	ND<0.0018	ND<0.0017	ND<0.0015	-	14
Tetrahydrofuran (THF)	ND<0.0090	ND<0.0087	ND<0.0076	-	-
Toluene	ND<0.0018	0.0025	ND<0.0015	-	798
1,2,3-Trichlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	930	-
1,2,4-Trichlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	110	-
1,3,5-Trichlorobenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	-
1,1,1-Trichloroethane	ND<0.0018	ND<0.0017	ND<0.0015	36,000	-
1,1,2-Trichloroethane	ND<0.0018	ND<0.0017	ND<0.0015	5	-
Trichloroethene (TCE)	ND<0.0018	ND<0.0017	ND<0.0015	-	6.5
Trichlorofluoromethane (Freon 11)	ND<0.0090	ND<0.00087	ND<0.0076	350,000	-
1,2,3-Trichloropropane	ND<0.0018	ND<0.0017	ND<0.0015	-	0.07
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND<0.0090	ND<0.0087	ND<0.0076	-	0.07
1,2,4-trimethylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	177*
1,3,5-trimethylbenzene	ND<0.0018	ND<0.0017	ND<0.0015	-	177*
Vinyl Chloride	ND<0.0090	ND<0.0087	ND<0.0076	-	0.59
mp-Xylene	ND<0.0036	ND<0.0035	ND<0.0030	-	257
o-Xylene	ND<0.0018	ND<0.0017	ND<0.0015	-	

NOTES:

Vermont Soil Standards (VSS) and Statewide Background Concentrations from July 2019 DEC I-Rule
EPA Regional Screening Levels (RSLs) from May 2020 RSL Summary Table. RSLs not included when a VSS exists.
Reported results or reporting limits equal to or in excess of residential soil thresholds are shaded.
Blank Cell=no published value (VSS) or published value not applicable (RSL)

**Brownfields Cleanup Site Investigation
Analytical Sensitivity and Project Criteria (Form K) Tables
Long Falls Paperboard
161 Wellington Road, Brattleboro, Vermont**



Page 3 of 3

Sample Identification	LF-5	LF-6	LF-7	EPA Industrial RSL	VSS Non-Residential
Sample Depth (ft. bg)	0-18"	0-18"	0-18"		
PID Reading (ppm)	0.1	0.0	0.0		
Sample Date	5/8/20				
PAH EPA Method 8270D (mg/kg)					
Acenaphthene	ND<0.19	ND<0.19	ND<0.19	45,000	-
Acenaphthylene	ND<0.19	ND<0.19	ND<0.19	-	-
Anthracene	ND<0.19	ND<0.19	ND<0.19	230,000	-
Benzo(a)anthracene	ND<0.19	ND<0.19	ND<0.19	21	-
Benzo(a)pyrene	ND<0.19	ND<0.19	ND<0.19	-	1.54
Benzo(b)fluoranthene	ND<0.19	ND<0.19	ND<0.19	21	-
Benzo(g,h,i)perylene	ND<0.19	ND<0.19	ND<0.19	-	-
Benzo(k)fluoranthene	ND<0.19	ND<0.19	ND<0.19	210	-
Chrysene	ND<0.19	ND<0.19	ND<0.19	2,100	-
Dibenz(a,h)anthracene	ND<0.19	ND<0.19	ND<0.19	2.1	-
Fluoranthene	ND<0.19	ND<0.19	ND<0.19	-	26,371
Fluorene	ND<0.19	ND<0.19	ND<0.19	-	26,371
Indeno(1,2,3-cd)pyrene	ND<0.19	ND<0.19	ND<0.19	21	-
2-Methylnaphthalene	ND<0.19	ND<0.19	ND<0.19	3,000	-
Naphthalene	ND<0.19	ND<0.19	ND<0.19	-	16
Phenanthrene	ND<0.19	ND<0.19	ND<0.19	-	-
Pyrene	ND<0.19	ND<0.19	ND<0.19	23,000	-
PAH TEQ as B[a]P	0.22	0.22	0.22	-	0.58
POLYCHLORINATED DIOXIN AND FURAN (ng/kg, as TEQ)					
Tetrachlorodibenzo-p-dioxin, 2,3,7,8-TCDD	0.56	1.54	1.33	-	13.7
TOTAL METALS, EPA Method 6020 (mg/kg, dry)					
Total Arsenic	5.8	5.9	6.5	-	16
Total Barium	29	32	27	-	127,382
Total Cadmium	ND<0.37	ND<0.38	ND<0.36	-	87
Total Chromium	13	15	13	-	360,223
Total Lead	7.8	6.1	5.1	-	800
Total Mercury	0.037	ND<0.027	ND<0.026	-	3.1
Total Selenium	ND<3.7	ND<3.8	ND<3.6	5,800	-
Total Silver	ND<0.37	ND<0.38	ND<0.36	-	2,483
PCBS, EPA Method 8082 (mg/kg, dry)					
Aroclor-1016	ND<0.091	ND<0.091	ND<0.087	27	-
Aroclor-1221	ND<0.091	ND<0.091	ND<0.087	0.83	-
Aroclor-1232	ND<0.091	ND<0.091	ND<0.087	0.72	-
Aroclor-1242	ND<0.091	ND<0.091	ND<0.087	0.95	-
Aroclor-1248	ND<0.091	ND<0.091	ND<0.087	0.95	-
Aroclor-1254	ND<0.091	ND<0.091	ND<0.087	0.97	-
Aroclor-1260	ND<0.091	ND<0.091	ND<0.087	0.99	-
Aroclor-1262	ND<0.091	ND<0.091	ND<0.087	-	-
Aroclor-1268	ND<0.091	ND<0.091	ND<0.087	-	-
Total PCBs	ND	ND	ND	-	0.68

NOTES:

Vermont Soil Standards (VSS) and Statewide Background Concentrations from July 2019 DEC I-Rule EPA Regional Screening Levels (RSLs) from May 2020 RSL Summary Table. RSLs not included when a VSS exists. Reported results or reporting limits equal to or in excess of residential soil thresholds are shaded.

**PAH Toxic Equivalency Calculations
Long Falls Paper Soils, Brattleboro, Vermont**



LF-5

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.095	0.1	0.0095
Chrysene	0.095	0.001	0.000095
Benzo(b)fluoranthene	0.095	0.1	0.0095
Benzo(k)fluoranthene	0.095	0.01	0.00095
Benzo(a)pyrene	0.095	1	0.095
Indeno(1,2,3-cd)pyrene	0.095	0.1	0.0095
Dibenz(a,h)anthracene	0.095	1	0.095
Total Benzo(a)pyrene Equivalent =			0.22

LF-6

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.095	0.1	0.0095
Chrysene	0.095	0.001	0.000095
Benzo(b)fluoranthene	0.095	0.1	0.0095
Benzo(k)fluoranthene	0.095	0.01	0.00095
Benzo(a)pyrene	0.095	1	0.095
Indeno(1,2,3-cd)pyrene	0.095	0.1	0.0095
Dibenz(a,h)anthracene	0.095	1	0.095
Total Benzo(a)pyrene Equivalent =			0.22

LF-7

Contaminant	Concentration (mg/kg)	Toxicity Equivalency Factor	Toxicity Equivalents to Benzo(a)pyrene
Benzo(a)anthracene	0.095	0.1	0.0095
Chrysene	0.095	0.001	0.000095
Benzo(b)fluoranthene	0.095	0.1	0.0095
Benzo(k)fluoranthene	0.095	0.01	0.00095
Benzo(a)pyrene	0.095	1	0.095
Indeno(1,2,3-cd)pyrene	0.095	0.1	0.0095
Dibenz(a,h)anthracene	0.095	1	0.095
Total Benzo(a)pyrene Equivalent =			0.22

**Dioxin/Furan Toxic Equivalency Calculations
Long Falls Paperboard**



LF-1 (sludge)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	2.60	K	1	2.6
1,2,3,7,8-PeCDD	0.743	BJ	1	0.743
1,2,3,4,7,8-HxCDD	0.865	JK	0.1	0.0865
1,2,3,6,7,8-HxCDD	7.60		0.1	0.76
1,2,3,7,8,9-HxCDD	2.90	J	0.1	0.29
1,2,3,4,6,7,8-HpCDD	193		0.01	1.93
OCDD	2800		0.0003	0.84
2,3,7,8-TCDF	37.3		0.1	3.73
1,2,3,7,8-PeCDF	1.05	BJK	0.03	0.0315
2,3,4,7,8-PeCDF	1.55	J	0.3	0.465
1,2,3,4,7,8-HxCDF	1.320	BJ	0.1	0.132
1,2,3,6,7,8-HxCDF	0.699	BJ	0.1	0.0699
1,2,3,7,8,9-HxCDF	1.755	ND	0.1	0.1755
2,3,4,6,7,8-HxCDF	1.020	BJ	0.1	0.102
1,2,3,4,6,7,8-HpCDF	34.0		0.01	0.34
1,2,3,4,7,8,9-HpCDF	1.35	JK	0.01	0.0135
OCDF	153		0.0003	0.0459
Total 2,3,7,8-TCDD Equivalent =				12.4

LF-2 (sludge)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	4.17		1	4.17
1,2,3,7,8-PeCDD	1.78	BJK	1	1.78
1,2,3,4,7,8-HxCDD	10.2	K	0.1	1.02
1,2,3,6,7,8-HxCDD	12.8		0.1	1.28
1,2,3,7,8,9-HxCDD	7.66		0.1	0.766
1,2,3,4,6,7,8-HpCDD	340		0.01	3.4
OCDD	2930		0.0003	0.879
2,3,7,8-TCDF	73.0		0.1	7.3
1,2,3,7,8-PeCDF	2.68	J	0.03	0.0804
2,3,4,7,8-PeCDF	3.28	J	0.3	0.984
1,2,3,4,7,8-HxCDF	3.110	J	0.1	0.311
1,2,3,6,7,8-HxCDF	1.48	BJK	0.1	0.148
1,2,3,7,8,9-HxCDF	1.82	ND	0.1	0.182
2,3,4,6,7,8-HxCDF	2.33	J	0.1	0.233
1,2,3,4,6,7,8-HpCDF	111.0		0.01	1.11
1,2,3,4,7,8,9-HpCDF	2.67	J	0.01	0.0267
OCDF	325		0.0003	0.0975
Total 2,3,7,8-TCDD Equivalent =				23.8

(1) Concentrations reported as non-detect are entered as 50% of the reporting limit per Vermont Department of Environmental Conservation I-Rule 7/19, Section 35.401 (l).

(2) B-detected in blank <10% of concentration; J-estimated due to low conc; K-estimated due to ion abundance ratio

(3) Toxicity equivalency factors from Vermont Department of Environmental Conservation I-Rule 7/19, Appendix F.

**Dioxin/Furan Toxic Equivalency Calculations
Long Falls Paperboard**



LF-3 (sludge)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	3.41		1	3.41
1,2,3,7,8-PeCDD	1.09	BJ	1	1.09
1,2,3,4,7,8-HxCDD	4.10	J	0.1	0.41
1,2,3,6,7,8-HxCDD	7.50		0.1	0.75
1,2,3,7,8,9-HxCDD	3.60	JK	0.1	0.36
1,2,3,4,6,7,8-HpCDD	167		0.01	1.67
OCDD	1870		0.0003	0.561
2,3,7,8-TCDF	59.6		0.1	5.96
1,2,3,7,8-PeCDF	1.92	BJ	0.03	0.0576
2,3,4,7,8-PeCDF	2.07	J	0.3	0.621
1,2,3,4,7,8-HxCDF	1.86	BJ	0.1	0.186
1,2,3,6,7,8-HxCDF	0.811	BJK	0.1	0.0811
1,2,3,7,8,9-HxCDF	0.713	BJ	0.1	0.0713
2,3,4,6,7,8-HxCDF	1.16	BJK	0.1	0.116
1,2,3,4,6,7,8-HpCDF	59.1		0.01	0.591
1,2,3,4,7,8,9-HpCDF	1.50	JK	0.01	0.015
OCDF	218		0.0003	0.0654
Total 2,3,7,8-TCDD Equivalent =				16.0

LF-4 (sludge)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	2.08		1	2.08
1,2,3,7,8-PeCDD	0.988	BJ	1	0.988
1,2,3,4,7,8-HxCDD	1.89	J	0.1	0.189
1,2,3,6,7,8-HxCDD	7.08		0.1	0.708
1,2,3,7,8,9-HxCDD	3.69	JK	0.1	0.369
1,2,3,4,6,7,8-HpCDD	169		0.01	1.69
OCDD	1630		0.0003	0.489
2,3,7,8-TCDF	37.9		0.1	3.79
1,2,3,7,8-PeCDF	1.23	BJK	0.03	0.0369
2,3,4,7,8-PeCDF	1.66	J	0.3	0.498
1,2,3,4,7,8-HxCDF	1.36	BJK	0.1	0.136
1,2,3,6,7,8-HxCDF	0.729	BJK	0.1	0.0729
1,2,3,7,8,9-HxCDF	0.548	BJ	0.1	0.0548
2,3,4,6,7,8-HxCDF	1.20	BJ	0.1	0.12
1,2,3,4,6,7,8-HpCDF	25.4		0.01	0.254
1,2,3,4,7,8,9-HpCDF	1.30	JK	0.01	0.013
OCDF	98		0.0003	0.02949
Total 2,3,7,8-TCDD Equivalent =				11.5

(1) Concentrations reported as non-detect are entered as 50% of the reporting limit per Vermont Department of Environmental Conservation I-Rule 7/19, Section 35,401 (l).

(2) B-detected in blank <10% of concentration; J-estimated due to low conc; K-estimated due to ion abundance ratio

(3) Toxicity equivalency factors from Vermont Department of Environmental Conservation I-Rule 7/19, Appendix F.

**Dioxin/Furan Toxic Equivalency Calculations
Long Falls Paperboard**



LF-2 Duplicate (sludge)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	3.50	K	1	3.5
1,2,3,7,8-PeCDD	0.927	BJK	1	0.927
1,2,3,4,7,8-HxCDD	0.928	J	0.1	0.0928
1,2,3,6,7,8-HxCDD	8.0		0.1	0.797
1,2,3,7,8,9-HxCDD	3.98		0.1	0.398
1,2,3,4,6,7,8-HpCDD	122		0.01	1.22
OCDD	1940		0.0003	0.582
2,3,7,8-TCDF	66.0		0.1	6.6
1,2,3,7,8-PeCDF	1.55	BJK	0.03	0.0465
2,3,4,7,8-PeCDF	2.7	J	0.3	0.81
1,2,3,4,7,8-HxCDF	1.73	BJK	0.1	0.173
1,2,3,6,7,8-HxCDF	0.959	BJK	0.1	0.0959
1,2,3,7,8,9-HxCDF	1.88	ND	0.1	0.1875
2,3,4,6,7,8-HxCDF	1.23	J	0.1	0.123
1,2,3,4,6,7,8-HpCDF	69.3		0.01	0.693
1,2,3,4,7,8,9-HpCDF	1.88	ND	0.01	0.01875
OCDF	300		0.0003	0.09
Total 2,3,7,8-TCDD Equivalent =				16.4

LF-5 (soil)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	0.281	ND	1	0.2805
1,2,3,7,8-PeCDD	0.0525	ND	1	0.0525
1,2,3,4,7,8-HxCDD	0.062	ND	0.1	0.0062
1,2,3,6,7,8-HxCDD	0.0575	ND	0.1	0.00575
1,2,3,7,8,9-HxCDD	0.185	BJK	0.1	0.0185
1,2,3,4,6,7,8-HpCDD	5.30		0.01	0.053
OCDD	66.4		0.0003	0.01992
2,3,7,8-TCDF	0.076	ND	0.1	0.0076
1,2,3,7,8-PeCDF	0.180	BJK	0.03	0.0054
2,3,4,7,8-PeCDF	0.0605	ND	0.3	0.01815
1,2,3,4,7,8-HxCDF	0.162	BJ	0.1	0.0162
1,2,3,6,7,8-HxCDF	0.165	BJ	0.1	0.0165
1,2,3,7,8,9-HxCDF	0.082	ND	0.1	0.0082
2,3,4,6,7,8-HxCDF	0.326	BJ	0.1	0.0326
1,2,3,4,6,7,8-HpCDF	1.96	J	0.01	0.0196
1,2,3,4,7,8,9-HpCDF	0.136	BJK	0.01	0.00136
OCDF	5.77		0.0003	0.001731
Total 2,3,7,8-TCDD Equivalent =				0.564

(1) Concentrations reported as non-detect are entered as 50% of the reporting limit per Vermont Department of Environmental Conservation I-Rule 7/19, Section 35,401 (l).

(2) B-detected in blank <10% of concentration; J-estimated due to low conc; K-estimated due to ion abundance ratio

(3) Toxicity equivalency factors from Vermont Department of Environmental Conservation I-Rule 7/19, Appendix F.

**Dioxin/Furan Toxic Equivalency Calculations
Long Falls Paperboard**



LF-6 (soil)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	0.263	ND	1	0.2625
1,2,3,7,8-PeCDD	0.1315	ND	1	0.1315
1,2,3,4,7,8-HxCDD	0.134	BJK	0.1	0.0134
1,2,3,6,7,8-HxCDD	0.405	BJK	0.1	0.0405
1,2,3,7,8,9-HxCDD	0.235	BJ	0.1	0.0235
1,2,3,4,6,7,8-HpCDD	12.7		0.01	0.127
OCDD	94.8		0.0003	0.02844
2,3,7,8-TCDF	0.2625	ND	0.1	0.02625
1,2,3,7,8-PeCDF	1.315	ND	0.03	0.03945
2,3,4,7,8-PeCDF	1.315	ND	0.3	0.3945
1,2,3,4,7,8-HxCDF	0.170	BJK	0.1	0.017
1,2,3,6,7,8-HxCDF	1.315	ND	0.1	0.1315
1,2,3,7,8,9-HxCDF	1.315		0.1	0.1315
2,3,4,6,7,8-HxCDF	1.315		0.1	0.1315
1,2,3,4,6,7,8-HpCDF	2.49	J	0.01	0.0249
1,2,3,4,7,8,9-HpCDF	1.315		0.01	0.01315
OCDF	9.89		0.0003	0.002967
Total 2,3,7,8-TCDD Equivalent =				1.54

LF-7 (soil)

Contaminant	Concentration (ng/kg)(1)	Data Qualifier (2)	Toxicity Equivalency Factor (3)	Toxicity Equivalents to 2,3,7,8-TCDD (ng/kg)
2,3,7,8-TCDD	0.272	ND	1	0.272
1,2,3,7,8-PeCDD	0.3480	BJ	1	0.348
1,2,3,4,7,8-HxCDD	0.254	BJK	0.1	0.0254
1,2,3,6,7,8-HxCDD	0.693	JK	0.1	0.0693
1,2,3,7,8,9-HxCDD	0.535	BJ	0.1	0.0535
1,2,3,4,6,7,8-HpCDD	12.2		0.01	0.122
OCDD	105		0.0003	0.0315
2,3,7,8-TCDF	0.272	ND	0.1	0.0272
1,2,3,7,8-PeCDF	1.360	ND	0.03	0.0408
2,3,4,7,8-PeCDF	0.351	JK	0.3	0.1053
1,2,3,4,7,8-HxCDF	0.325	BJ	0.1	0.0325
1,2,3,6,7,8-HxCDF	0.17	BJK	0.1	0.017
1,2,3,7,8,9-HxCDF	1.360	ND	0.1	0.136
2,3,4,6,7,8-HxCDF	0.198	BJ	0.1	0.0198
1,2,3,4,6,7,8-HpCDF	2.33	J	0.01	0.0233
1,2,3,4,7,8,9-HpCDF	0.163	BJK	0.01	0.00163
OCDF	6.87	K	0.0003	0.002061
Total 2,3,7,8-TCDD Equivalent =				1.33

(1) Concentrations reported as non-detect are entered as 50% of the reporting limit per Vermont Department of Environmental Conservation I-Rule 7/19, Section 35.401 (l).

(2) B-detected in blank <10% of concentration; J-estimated due to low conc; K-estimated due to ion abundance ratio

(3) Toxicity equivalency factors from Vermont Department of Environmental Conservation I-Rule 7/19, Appendix F.

Read the directions, in their entirety, on the 'Directions' Tab before use.

sample information

Site Number:	2018-4828
Site Name:	Long Falls Paperboard
Sample Number:	LF-5
Sample Depth:	0-18"
Sample Date:	5/8/20

1. Select chemicals from dropdown list

2. Input reported concentrations in mg/kg

3. View autocalculated ILCR and HQ associated with each individual chemical reported

Analyte	CASRN	RB-RSV _c (mg/kg)	RB-RSV _n (mg/kg)	Sample Concentration (mg/kg)	Calculated Sample ILCR (unitless)	Calculated Sample HQ (unitless)
2,3,7,8-TCDD TEQ ^a	1746-01-6 ^b	2.25E-06	4.91E-05	5.64E-07	2.50E-07	1.15E-02
BaP-TE	NA	NA	NA	NA	Analyte conc. < RL	No noncancer RB-RSV
Benzo(a)pyrene ^c	50-32-8	NA	1.72E+01	NA	Included in BaP-TE	Analyte conc. < RL
Total PCBs	1336-36-3	1.14E-01	1.13E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Acetochlor	34256-82-1	NA	1.22E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Acetone	67-64-1	NA	4.06E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Alachlor	15972-60-8	NA	6.08E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Aldrin	309-00-2	2.02E-02	2.10E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Aluminum	7429-90-5	NA	7.25E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Antimony	7440-36-0	NA	2.60E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Barium	7440-39-3	NA	1.12E+04	2.90E+01	No cancer RB-RSV	2.58E-03
Benomyl	17804-35-2	1.16E+02	7.90E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Benzene	71-43-2	6.98E-01	1.11E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Beryllium	7440-41-7	5.67E+02	3.45E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Bis(2-chloro-1-methyl ethyl)ether	108-60-1	NA	2.80E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Boron	7440-42-8	NA	1.47E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Bromate	15541-45-4	5.36E-01	2.93E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Bromochloromethane	74-97-5	NA	1.93E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Bromonitril	1688-84-5	2.69E+00	9.12E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Butylbenzene, n-	104-51-8	NA	3.50E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Butylbenzene, sec-	135-98-8	NA	7.01E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Butylbenzene, tert-	98-06-6	NA	7.01E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Cadmium (food)	7440-43-9	7.56E+02	6.86E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Carbaryl	63-25-2	3.17E+02	6.08E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Carbon Disulfide	75-15-0	NA	6.08E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Carbon tetrachloride	56-23-5	3.72E-01	1.30E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Chlorobenzene	108-90-7	NA	4.14E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Chromium (III) (insoluble salts)	16065-83-1	NA	4.02E+04	1.30E+01	No cancer RB-RSV	3.23E-04
Chromium (VI)	18540-29-9	9.06E-02	1.16E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Cobalt	7440-48-4	1.51E+02	2.19E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Copper	7440-50-8	NA	1.04E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Di (2-ethylhexyl) phthalate	117-81-7	1.98E+01	1.23E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Dibromochloropropane	96-12-8	6.00E-03	6.03E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Dibromoethane, 1,2-	106-93-4	2.27E-02	1.15E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethane, 1,1-	75-34-3	2.10E+00	1.40E+04	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethane, 1,2-	107-06-2	2.85E-01	4.95E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethylene, cis 1,2-	156-59-2	NA	1.40E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Dichloroethylene, trans 1,2-	156-60-5	NA	1.40E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Dichloropropane, 1,2-	78-87-5	1.51E+00	2.63E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Dioxane, 1,4-	123-91-1	2.78E+00	1.05E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Ethylbenzene	100-41-4	3.68E+00	4.45E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Fluoranthene	206-44-0	NA	2.30E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Fluorene	86-73-7	NA	2.30E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Hexachlorobenzene	118-74-1	1.31E-01	5.61E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	4.60E+00	2.90E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Hydrogen cyanide	74-90-8	NA	4.91E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Iron	7439-89-6	NA	5.13E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Isopropylbenzene (cumene)	98-82-8	NA	2.56E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Manganese (non-diet)	7439-96-5	NA	1.12E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Mercury (elemental)	7439-97-6	NA	3.13E+00	3.70E-02	No cancer RB-RSV	1.18E-02
Methyl ethyl ketone	78-93-3	NA	1.70E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Methyl tert-butyl ether (MTBE)	1634-04-4	NA	6.49E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Molybdenum	7439-98-7	NA	3.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Naphthalene	91-20-3	2.72E+00	2.24E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Nickel	7440-02-0	5.22E+03	9.40E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	NA	3.70E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Pentachlorophenol	87-86-5	4.84E-01	2.37E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Pentaerythritol tetranitrate (PETN)	78-11-5	NA	1.22E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Perchlorate	14797-73-0	NA	5.13E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctanoic acid (PFHpA)	375-85-9	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorononanoic acid (PFNA)	375-95-1	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctanoic acid (PFOA)	335-67-1	3.96E+00	1.22E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Propoxur (Baygon)	114-26-1	7.88E+01	2.43E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Propyl benzene, n-	103-65-1	NA	2.53E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Selenium	7782-49-2	NA	3.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Silver	7440-22-4	NA	2.37E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Tetrachloroethane, 1,1,1,2-	630-20-6	1.32E+00	2.10E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Tetrachloroethylene	127-18-4	2.38E+00	1.13E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Thallium (soluble Thallium)	7440-28-0 ^d	NA	7.33E-01	NA	No cancer RB-RSV	Analyte conc. < RL
Toluene	108-88-3	NA	7.06E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trichloroethylene	79-01-6	6.81E-01	6.21E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Trichloropropane, 1,2,3-	96-18-4	3.11E-03	8.67E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Trimethylbenzene, 1,2,3-	526-73-8	NA	2.06E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trimethylbenzene, 1,2,4-	95-63-6	NA	1.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trimethylbenzene, 1,3,5-	108-67-8	NA	1.44E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trinitrotoluene, 2,4,6- (TNT)	118-96-7	1.15E+01	3.49E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Uranium (soluble salts)	NA	NA	4.40E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Vanadium	7440-62-2	NA	2.77E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Vinyl chloride	75-01-4	9.83E-02	8.51E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Xylenes	1330-20-7	NA	2.52E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Zinc	7440-66-6	NA	2.20E+04	NA	No cancer RB-RSV	Analyte conc. < RL

a. RB-RSV_c corresponds to a one-in-one million ILCR. See IRULE Appendix E, Table 1.
 b. RB-RSV_n corresponds to a HQ of 1 based on Hypothetical Young Child Resident scenario. See IRULE Appendix E, Table 1.

Notes:
 HI = Hazard Index (sum of Hazard Quotients)
 HQ = Hazard Quotient
 ILCR = Incremental Lifetime Cancer Risk
 NA = Not Available
 RB-RSV_c = Risk-Based Residential Soil Value based on cancer
 RB-RSV_n = Risk-Based Residential Soil Value based on noncancer endpoint
 * - CAS Number for 2,3,7,8-TCDD
 ** - CAS Number is for Metallic Thallium

c. The 2,3,7,8-TCDD TEQ row should include the sum of the concentrations of all dioxins, furans, and dioxin-like PCBs reported as 2,3,7,8-TCDD toxic equivalents.
 d. The BaP-TE row should include the sum of the concentrations for all carcinogenic PAHs (including benzo(a)pyrene) reported as Benzo(a)pyrene toxic equivalents. See direction 6 for designated urban background locations.
 e. Benzo(a)pyrene row should include only the concentration of benzo(a)pyrene in order to address its noncancer hazards.
 f. The Total PCBs row should include the sum of the concentrations for all PCBs except dioxin-like PCBs. Dioxin-like PCBs should be included in the 2,3,7,8-TCDD TE concentration entry.

4. View autocalculated sample cumulative ILCR and HI

Sample Cumulative ILCR:	2.50E-07
Sample HI:	2.62E-02

Read the directions, in their entirety, on the 'Directions' Tab before use.

sample information

Site Number:	2018-4828
Site Name:	Long Falls Paperboard
Sample Number:	LF-6
Sample Depth:	0-18"
Sample Date:	5/8/20

1. Select chemicals from dropdown list

2. Input reported concentrations in mg/kg

3. View autocalculated ILCR and HQ associated with each individual chemical reported

Analyte	CASRN	RB-RSV _c (mg/kg)	RB-RSV _n (mg/kg)	Sample Concentration (mg/kg)	Calculated Sample ILCR (unitless)	Calculated Sample HQ (unitless)
2,3,7,8-TCDD TEQ ^a	1746-01-6 ^b	2.25E-06	4.91E-05	1.54E-06	6.83E-07	3.14E-02
BaP-TE	NA	7.28E-02	NA	NA	Analyte conc. < RL	No noncancer RB-RSV
Benzo(a)pyrene ^c	50-32-8	NA	1.72E+01	Included in BaP-TE	Analyte conc. < RL	Analyte conc. < RL
Total PCBs	1336-36-3	1.14E-01	1.13E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Acetochlor	34256-82-1	NA	1.22E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Acetone	67-64-1	NA	4.06E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Alachlor	15972-60-8	NA	6.08E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Aldrin	309-00-2	2.02E-02	2.10E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Aluminum	7429-90-5	NA	7.25E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Antimony	7440-36-0	NA	2.60E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Barium	7440-39-3	NA	1.12E+04	3.20E+01	No cancer RB-RSV	Analyte conc. < RL
Benomyl	17804-35-2	1.16E+02	7.90E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Benzene	71-43-2	6.98E-01	1.11E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Beryllium	7440-41-7	5.67E+02	3.45E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Bis(2-chloro-1-methyl ethyl)ether	108-60-1	NA	2.80E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Boron	7440-42-8	NA	1.47E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Bromate	15541-45-4	5.36E-01	2.93E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Bromochloromethane	74-97-5	NA	1.93E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Bromonitril	1688-84-5	2.69E+00	9.12E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Butylbenzene, n-	104-51-8	NA	3.50E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Butylbenzene, sec-	135-98-8	NA	7.01E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Butylbenzene, tert-	98-06-6	NA	7.01E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Cadmium (food)	7440-43-9	7.56E+02	6.86E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Carbaryl	63-25-2	3.17E+02	6.08E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Carbon Disulfide	75-15-0	NA	6.08E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Carbon tetrachloride	56-23-5	3.72E-01	1.30E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Chlorobenzene	108-90-7	NA	4.14E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Chromium (III) (insoluble salts)	16065-83-1	NA	4.02E+04	1.50E+01	No cancer RB-RSV	3.73E-04
Chromium (VI)	18540-29-9	9.06E-02	1.16E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Cobalt	7440-48-4	1.51E+02	2.19E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Copper	7440-50-8	NA	1.04E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Di (2-ethylhexyl) phthalate	117-81-7	1.98E+01	1.23E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Dibromochloropropane	96-12-8	6.00E-03	6.03E-00	NA	Analyte conc. < RL	Analyte conc. < RL
Dibromoethane, 1,2-	106-93-4	2.27E-02	1.15E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethane, 1,1-	75-34-3	2.10E+00	1.40E+04	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethane, 1,2-	107-06-2	2.85E-01	4.95E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethylene, cis 1,2-	156-59-2	NA	1.40E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Dichloroethylene, trans 1,2-	156-60-5	NA	1.40E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Dichloropropane, 1,2-	78-87-5	1.51E+00	2.63E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Dioxane, 1,4-	123-91-1	2.78E+00	1.05E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Ethylbenzene	100-41-4	3.68E+00	4.45E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Fluoranthene	206-44-0	NA	2.30E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Fluorene	86-73-7	NA	2.30E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Hexachlorobenzene	118-74-1	1.31E-01	5.61E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	4.60E+00	2.90E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Hydrogen cyanide	74-90-8	NA	4.91E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Iron	7439-89-6	NA	5.13E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Isopropylbenzene (cumene)	98-82-9	NA	2.56E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Manganese (non-diet)	7439-96-5	NA	1.12E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Mercury (elemental)	7439-97-6	NA	3.13E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Methyl ethyl ketone	78-93-3	NA	1.70E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Methyl tert-butyl ether (MTBE)	1634-04-4	NA	6.49E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Molybdenum	7439-98-7	NA	3.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Naphthalene	91-20-3	2.72E+00	2.24E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Nickel	7440-02-0	5.22E+03	9.40E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	NA	3.70E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Pentachlorophenol	87-86-5	4.84E-01	2.37E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Pentaerythritol tetranitrate (PETN)	78-11-5	NA	1.22E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Perchlorate	14797-73-0	NA	5.13E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctanoic acid (PFHpA)	375-85-9	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorononanoic acid (PFNA)	375-95-1	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctanoic acid (PFOA)	335-67-1	3.96E+00	1.22E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Propoxur (Baygon)	114-26-1	7.88E+01	2.43E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Propyl benzene, n-	103-65-1	NA	2.53E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Selenium	7782-49-2	NA	3.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Silver	7440-22-4	NA	2.37E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Tetrachloroethane, 1,1,1,2-	630-20-6	1.32E+00	2.10E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Tetrachloroethylene	127-18-4	2.38E+00	1.13E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Thallium (soluble Thallium)	7440-28-0 ^d	NA	7.33E-01	NA	No cancer RB-RSV	Analyte conc. < RL
Toluene	108-88-3	NA	7.06E+02	2.50E-03	No cancer RB-RSV	3.54E-06
Trichloroethylene	79-01-6	6.81E-01	6.21E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Trichloropropane, 1,2,3-	96-18-4	3.11E-03	8.67E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Trimethylbenzene, 1,2,3-	526-73-8	NA	2.06E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trimethylbenzene, 1,2,4-	95-63-6	NA	1.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trimethylbenzene, 1,3,5-	108-67-8	NA	1.44E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trinitrotoluene, 2,4,6- (TNT)	118-96-7	1.15E+01	3.49E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Uranium (soluble salts)	NA	NA	4.40E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Vanadium	7440-62-2	NA	2.77E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Vinyl chloride	75-01-4	9.83E-02	8.51E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Xylenes	1330-20-7	NA	2.52E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Zinc	7440-66-6	NA	2.20E+04	NA	No cancer RB-RSV	Analyte conc. < RL

a. RB-RSV_c corresponds to a one-in-one million ILCR. See IRULE Appendix E, Table 1.
 b. RB-RSV_n corresponds to a HQ of 1 based on Hypothetical Young Child Resident scenario. See IRULE Appendix E, Table 1.

Notes:
 HI = Hazard Index (sum of Hazard Quotients)
 HQ = Hazard Quotient
 ILCR = Incremental Lifetime Cancer Risk
 NA = Not Available
 RB-RSV_c = Risk-Based Residential Soil Value based on cancer
 RB-RSV_n = Risk-Based Residential Soil Value based on noncancer endpoint
^a - CAS Number for 2,3,7,8-TCDD
^b - CAS Number is for Metallic Thallium

c. The 2,3,7,8-TCDD TEQ row should include the sum of the concentrations of all dioxins, furans, and dioxin-like PCBs reported as 2,3,7,8-TCDD toxic equivalents.
 d. The BaP-TE row should include the sum of the concentrations for all carcinogenic PAHs (including benzo(a)pyrene) reported as Benzo(a)pyrene toxic equivalents. See direction 6 for designated urban background locations.
 e. Benzo(a)pyrene row should include only the concentration of benzo(a)pyrene in order to address its noncancer hazards.
 f. The Total PCBs row should include the sum of the concentrations for all PCBs except dioxin-like PCBs. Dioxin-like PCBs should be included in the 2,3,7,8-TCDD TE concentration entry.

4. View autocalculated sample cumulative ILCR and HI

Sample Cumulative ILCR:	6.83E-07
Sample HI:	3.46E-02

Read the directions, in their entirety, on the 'Directions' Tab before use.

sample information

Site Number:	2018-4828
Site Name:	Long Falls Paperboard
Sample Number:	LF-7
Sample Depth:	0-18"
Sample Date:	5/8/20

1. Select chemicals from dropdown list

2. Input reported concentrations in mg/kg

3. View autocalculated ILCR and HQ associated with each individual chemical reported

Analyte	CASRN	RB-RSV _c (mg/kg)	RB-RSV _n (mg/kg)	Sample Concentration (mg/kg)	Calculated Sample ILCR (unitless)	Calculated Sample HQ (unitless)
2,3,7,8-TCDD TEQ ^a	1746-01-6 ^b	2.25E-06	4.91E-05	1.33E-06	5.89E-07	2.71E-02
BaP-TE	NA	7.28E-02	NA	NA	Analyte conc. < RL	No noncancer RB-RSV
Benzo(a)pyrene ^c	50-32-8	NA	1.72E+01	NA	Included in BaP-TE	Analyte conc. < RL
Total PCBs	1336-36-3	1.14E-01	1.13E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Acetochlor	34256-82-1	NA	1.22E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Acetone	67-64-1	NA	4.06E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Alachlor	15972-60-8	NA	6.08E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Aldrin	309-00-2	2.02E-02	2.10E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Aluminum	7429-90-5	NA	7.25E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Antimony	7440-36-0	NA	2.60E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Barium	7440-39-3	NA	1.12E+04	2.70E+01	No cancer RB-RSV	2.40E-03
Benomyl	17804-35-2	1.16E+02	7.90E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Benzene	71-43-2	6.98E-01	1.11E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Beryllium	7440-41-7	5.67E+02	3.45E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Bis(2-chloro-1-methyl ethyl)ether	108-60-1	NA	2.80E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Boron	7440-42-8	NA	1.47E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Bromate	15541-45-4	5.36E-01	2.93E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Bromochloromethane	74-97-5	NA	1.93E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Bromonitril	1688-84-5	2.69E+00	9.12E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Butylbenzene, n-	104-51-8	NA	3.50E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Butylbenzene, sec-	135-98-8	NA	7.01E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Butylbenzene, tert-	98-06-6	NA	7.01E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Cadmium (food)	7440-43-9	7.56E+02	6.86E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Carbaryl	63-25-2	3.17E+02	6.08E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Carbon Disulfide	75-15-0	NA	6.08E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Carbon tetrachloride	56-23-5	3.72E-01	1.30E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Chlorobenzene	108-90-7	NA	4.14E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Chromium (III) (insoluble salts)	16065-83-1	NA	4.02E+04	1.30E+01	No cancer RB-RSV	3.23E-04
Chromium (VI)	18540-29-9	9.06E-02	1.16E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Cobalt	7440-48-4	1.51E+02	2.19E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Copper	7440-50-8	NA	1.04E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Di (2-ethylhexyl) phthalate	117-81-7	1.98E+01	1.23E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Dibromochloropropane	96-12-8	6.00E-03	6.63E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Dibromoethane, 1,2-	106-93-4	2.27E-02	1.15E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethane, 1,1-	75-34-3	2.10E+00	1.40E+04	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethane, 1,2-	107-06-2	2.85E-01	4.95E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Dichloroethylene, cis 1,2-	156-59-2	NA	1.40E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Dichloroethylene, trans 1,2-	156-60-5	NA	1.40E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Dichloropropane, 1,2-	78-87-5	1.51E+00	2.63E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Dioxane, 1,4-	123-91-1	2.78E+00	1.05E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Ethylbenzene	100-41-4	3.68E+00	4.45E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Fluoranthene	206-44-0	NA	2.30E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Fluorene	86-73-7	NA	2.30E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Hexachlorobenzene	118-74-1	1.31E-01	5.61E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	4.60E+00	2.90E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Hydrogen cyanide	74-90-8	NA	4.91E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Iron	7439-89-6	NA	5.13E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Isopropylbenzene (cumene)	98-82-8	NA	2.56E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Manganese (non-diet)	7439-96-5	NA	1.12E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Mercury (elemental)	7439-97-6	NA	3.13E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Methyl ethyl ketone	78-93-3	NA	1.70E+04	NA	No cancer RB-RSV	Analyte conc. < RL
Methyl tert-butyl ether (MTBE)	1634-04-4	NA	6.49E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Molybdenum	7439-98-7	NA	3.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Naphthalene	91-20-3	2.72E+00	2.24E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Nickel	7440-02-0	5.22E+03	9.40E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	NA	3.70E+03	NA	No cancer RB-RSV	Analyte conc. < RL
Pentachlorophenol	87-86-5	4.84E-01	2.37E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Pentaerythritol tetranitrate (PETN)	78-11-5	NA	1.22E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Perchlorate	14797-73-0	NA	5.13E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorheptanoic acid (PFHpA)	375-85-9	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorononanoic acid (PFNA)	375-95-1	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	NA	1.22E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Perfluorooctanoic acid (PFOA)	335-67-1	3.96E+00	1.22E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Propoxur (Baygon)	114-26-1	7.88E+01	2.43E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Propyl benzene, n-	103-65-1	NA	2.53E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Selenium	7782-49-2	NA	3.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Silver	7440-22-4	NA	2.37E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Tetrachloroethane, 1,1,1,2-	630-20-6	1.32E+00	2.10E+03	NA	Analyte conc. < RL	Analyte conc. < RL
Tetrachloroethylene	127-18-4	2.38E+00	1.13E+02	NA	Analyte conc. < RL	Analyte conc. < RL
Thallium (soluble Thallium)	7440-28-0 ^d	NA	7.33E-01	NA	No cancer RB-RSV	Analyte conc. < RL
Toluene	108-88-3	NA	7.06E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trichloroethylene	79-01-6	6.81E-01	6.21E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Trichloropropane, 1,2,3-	96-18-4	3.11E-03	8.67E+00	NA	Analyte conc. < RL	Analyte conc. < RL
Trimethylbenzene, 1,2,3-	526-73-8	NA	2.06E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trimethylbenzene, 1,2,4-	95-63-6	NA	1.66E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trimethylbenzene, 1,3,5-	108-67-8	NA	1.44E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Trinitrotoluene, 2,4,6- (TNT)	118-96-7	1.15E+01	3.49E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Uranium (soluble salts)	NA	NA	4.40E+01	NA	No cancer RB-RSV	Analyte conc. < RL
Vanadium	7440-62-2	NA	2.77E+00	NA	No cancer RB-RSV	Analyte conc. < RL
Vinyl chloride	75-01-4	9.83E-02	8.51E+01	NA	Analyte conc. < RL	Analyte conc. < RL
Xylenes	1330-20-7	NA	2.52E+02	NA	No cancer RB-RSV	Analyte conc. < RL
Zinc	7440-66-6	NA	2.20E+04	NA	No cancer RB-RSV	Analyte conc. < RL

a. RB-RSV_c corresponds to a one-in-one million ILCR. See IRULE Appendix E, Table 1.
 b. RB-RSV_n corresponds to a HQ of 1 based on Hypothetical Young Child Resident scenario. See IRULE Appendix E, Table 1.

Notes:
 HI = Hazard Index (sum of Hazard Quotients)
 HQ = Hazard Quotient
 ILCR = Incremental Lifetime Cancer Risk
 NA = Not Available
 RB-RSV_c = Risk-Based Residential Soil Value based on cancer
 RB-RSV_n = Risk-Based Residential Soil Value based on noncancer endpoint
 * - CAS Number for 2,3,7,8-TCDD
 ** - CAS Number is for Metallic Thallium

c. The 2,3,7,8-TCDD TEQ row should include the sum of the concentrations of all dioxins, furans, and dioxin-like PCBs reported as 2,3,7,8-TCDD toxic equivalents.
 d. The BaP-TE row should include the sum of the concentrations for all carcinogenic PAHs (including benzo(a)pyrene) reported as Benzo(a)pyrene toxic equivalents. See direction 6 for designated urban background locations.
 e. Benzo(a)pyrene row should include only the concentration of benzo(a)pyrene in order to address its noncancer hazards.
 f. The Total PCBs row should include the sum of the concentrations for all PCBs except dioxin-like PCBs. Dioxin-like PCBs should be included in the 2,3,7,8-TCDD TE concentration entry.

Version 09/12/19

4. View autocalculated sample cumulative ILCR and HI

Sample Cumulative ILCR:	5.89E-07
Sample HI:	2.98E-02

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IP-1 (top of casing elevation 95.93 ft)				
Sample Date	8/30/19	6/9/20		Vermont Groundwater Enforcement Standard
Analytical Laboratory	Alpha	Con-Test		
Depth to Water (ft)	69.05	69.04		
Groundwater Elevation(ft)	26.88	26.89		
PFAs EPA Method 537.1				
Perfluorobutanoic acid (PFBA)	2.9	2.4		-
Perfluorobutanesulfonic acid (PFBS)	0.47	ND<2.0		-
Perfluoropentanoic acid (PFPeA)	5.2	3.3		-
Perfluorohexanoic acid (PFHxA)	6.1	3.9		-
Perfluorohexanesulfonic acid (PFHxS)	0.74	ND<2.0		20
Perfluoroheptanoic acid (PFHpA)	2.8	ND<2.0		20
Perfluoroheptanesulfonic acid (PFHpS)	ND<1.7	ND<2.0		-
Perfluorooctanoic acid (PFOA)	6.8	8.0		20
Perfluorooctanesulfonic acid (PFOS)	ND<1.7	ND<2.0		20
Perfluorooctanesulfonamide (FOSA)	ND<1.7	ND<2.0		-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<1.7	ND<2.0		-
Perfluorononanoic acid (PFNA)	ND<1.7	ND<2.0		20
Perfluorodecanoic acid (PFDA)	ND<1.7	ND<2.0		-
Perfluorodecanesulfonic acid (PFDS)	ND<1.7	ND<2.0		-
N-EtFOSAA	ND<1.7	ND<2.0		-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<1.7	ND<2.0		-
Perfluoroundecanoic acid (PFUnA)	ND<1.7	ND<2.0		-
N-MeFOSAA	ND<1.7	ND<2.0		-
Perfluorododecanoic acid (PFDoA)	ND<1.7	ND<2.0		-
Perfluorotridecanoic acid (PFTrDA)	ND<1.7	ND<2.0		-
Perfluorotetradecanoic acid (PFTA)	ND<1.7	ND<2.0		-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	10.4	8.0		20

IP-2 (top of casing elevation 93.52 ft)				
Sample Date	8/30/19	6/9/20		Vermont Groundwater Enforcement Standard
Analytical Laboratory	Alpha	Con-Test		
Depth to Water (ft)	67.00	67.01		
Groundwater Elevation(ft)	26.52	26.51		
PFAs EPA Method 537.1				
Perfluorobutanoic acid (PFBA)	2.0	ND<2.0		-
Perfluorobutanesulfonic acid (PFBS)	0.81	ND<2.0		-
Perfluoropentanoic acid (PFPeA)	3.2	ND<2.0		-
Perfluorohexanoic acid (PFHxA)	2.6	ND<2.0		-
Perfluorohexanesulfonic acid (PFHxS)	0.60	ND<2.0		20
Perfluoroheptanoic acid (PFHpA)	1.1	ND<2.0		20
Perfluoroheptanesulfonic acid (PFHpS)	ND<2.0	ND<2.0		-
Perfluorooctanoic acid (PFOA)	2.3	2.6		20
Perfluorooctanesulfonic acid (PFOS)	0.65	ND<2.0		20
Perfluorooctanesulfonamide (FOSA)	ND<2.0	ND<2.0		-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<2.0	ND<2.0		-
Perfluorononanoic acid (PFNA)	ND<2.0	ND<2.0		20
Perfluorodecanoic acid (PFDA)	ND<2.0	ND<2.0		-
Perfluorodecanesulfonic acid (PFDS)	ND<2.0	ND<2.0		-
N-EtFOSAA	ND<2.0	ND<2.0		-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<2.0	ND<2.0		-
Perfluoroundecanoic acid (PFUnA)	ND<2.0	ND<2.0		-
N-MeFOSAA	ND<2.0	ND<2.0		-
Perfluorododecanoic acid (PFDoA)	ND<2.0	ND<2.0		-
Perfluorotridecanoic acid (PFTrDA)	ND<2.0	ND<2.0		-
Perfluorotetradecanoic acid (PFTA)	ND<2.0	ND<2.0		-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	4.6	2.6		20

NOTES:

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Vermont Groundwater Enforcement Standard from Table 1 of Chapter 12, Environmental Protection Rules, July 6, 2019.
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Reported concentrations at/or above VGES are shaded
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IP-3 (top of casing elevation 94.76 ft)				
<i>Sample Date</i>	8/30/19	6/9/20		Vermont Groundwater Enforcement Standard
<i>Analytical Laboratory</i>	Alpha	Con-Test		
<i>Depth to Water (ft)</i>	67.94	67.92		
<i>Groundwater Elevation(ft)</i>	26.82	26.84		
PFAs EPA Method 537.1				
Perfluorobutanoic acid (PFBA)	1.6	2.8		-
Perfluorobutanesulfonic acid (PFBS)	0.47	ND<2.0		-
Perfluoropentanoic acid (PFPeA)	0.70	2.1		-
Perfluorohexanoic acid (PFHxA)	ND<1.7	2.7		-
Perfluorohexanesulfonic acid (PFHxS)	ND<1.7	ND<2.0		20
Perfluoroheptanoic acid (PFHpA)	0.43	ND<2.0		20
Perfluoroheptanesulfonic acid (PFHpS)	ND<1.7	ND<2.0		-
Perfluorooctanoic acid (PFOA)	5.3	2.7		20
Perfluorooctanesulfonic acid (PFOS)	ND<1.7	ND<2.0		20
Perfluorooctanesulfonamide (FOSA)	ND<1.7	ND<2.0		-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<1.7	ND<2.0		-
Perfluorononanoic acid (PFNA)	ND<1.7	ND<2.0		20
Perfluorodecanoic acid (PFDA)	ND<1.7	ND<2.0		-
Perfluorodecanesulfonic acid (PFDS)	ND<1.7	ND<2.0		-
N-EtFOSAA	ND<1.7	ND<2.0		-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<1.7	ND<2.0		-
Perfluoroundecanoic acid (PFUnA)	ND<1.7	ND<2.0		-
N-MeFOSAA	ND<1.7	ND<2.0		-
Perfluorododecanoic acid (PFDoA)	ND<1.7	ND<2.0		-
Perfluorotridecanoic acid (PFTrDA)	ND<1.7	ND<2.0		-
Perfluorotetradecanoic acid (PFTA)	ND<1.7	ND<2.0		-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	5.7	2.7		20

IP-4 (top of casing elevation 95.86 ft)				
<i>Sample Date</i>	8/30/19	6/9/20		Vermont Groundwater Enforcement Standard
<i>Analytical Laboratory</i>	Alpha	Con-Test		
<i>Depth to Water (ft)</i>	69.12	69.12		
<i>Groundwater Elevation(ft)</i>	26.74	26.74		
PFAs EPA Method 537.1				
Perfluorobutanoic acid (PFBA)	7.1	4.4		-
Perfluorobutanesulfonic acid (PFBS)	0.69	ND<2.0		-
Perfluoropentanoic acid (PFPeA)	9.8	7.6		-
Perfluorohexanoic acid (PFHxA)	6.1	2.7		-
Perfluorohexanesulfonic acid (PFHxS)	1.8	ND<2.0		20
Perfluoroheptanoic acid (PFHpA)	1.6	ND<2.0		20
Perfluoroheptanesulfonic acid (PFHpS)	ND<1.8	ND<2.0		-
Perfluorooctanoic acid (PFOA)	3.3	2.8		20
Perfluorooctanesulfonic acid (PFOS)	ND<1.8	ND<2.0		20
Perfluorooctanesulfonamide (FOSA)	ND<1.8	ND<2.0		-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.3	ND<2.0		-
Perfluorononanoic acid (PFNA)	ND<1.8	ND<2.0		20
Perfluorodecanoic acid (PFDA)	ND<1.8	ND<2.0		-
Perfluorodecanesulfonic acid (PFDS)	ND<1.8	ND<2.0		-
N-EtFOSAA	ND<1.8	ND<2.0		-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<1.8	ND<2.0		-
Perfluoroundecanoic acid (PFUnA)	ND<1.8	ND<2.0		-
N-MeFOSAA	ND<1.8	ND<2.0		-
Perfluorododecanoic acid (PFDoA)	ND<1.8	ND<2.0		-
Perfluorotridecanoic acid (PFTrDA)	ND<1.8	ND<2.0		-
Perfluorotetradecanoic acid (PFTA)	ND<1.8	ND<2.0		-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	6.7	2.8		20

NOTES:

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Vermont Groundwater Enforcement Standard from Table 1 of Chapter 12, Environmental Protection Rules, July 6, 2019.
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IP-5 (top of casing elevation 95.54 ft)					
<i>Sample Date</i>	8/30/19	6/9/20			Vermont Groundwater Enforcement Standard
<i>Analytical Laboratory</i>	Alpha	NM			
<i>Depth to Water (ft)</i>	68.83	NM			
<i>Groundwater Elevation(ft)</i>	26.71	NM			
PFAs EPA Method 537.1					
Perfluorobutanoic acid (PFBA)	0.55	Not Sampled Inaccessible due to piled sludge			-
Perfluorobutanesulfonic acid (PFBS)	0.25				-
Perfluoropentanoic acid (PFPeA)	0.55				-
Perfluorohexanoic acid (PFHxA)	0.84				-
Perfluorohexanesulfonic acid (PFHxS)	ND<1.7				20
Perfluoroheptanoic acid (PFHpA)	0.45				20
Perfluoroheptanesulfonic acid (PFHpS)	ND<1.7				-
Perfluorooctanoic acid (PFOA)	1.4				20
Perfluorooctanesulfonic acid (PFOS)	0.50				20
Perfluorooctanesulfonamide (FOSA)	ND<1.7				-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<1.7				-
Perfluorononanoic acid (PFNA)	ND<1.7				20
Perfluorodecanoic acid (PFDA)	ND<1.7				-
Perfluorodecanesulfonic acid (PFDS)	ND<1.7				-
N-EtFOSAA	ND<1.7				-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<1.7				-
Perfluoroundecanoic acid (PFUnA)	ND<1.7				-
N-MeFOSAA	ND<1.7				-
Perfluorododecanoic acid (PFDoA)	ND<1.7				-
Perfluorotridecanoic acid (PFTrDA)	ND<1.7				-
Perfluorotetradecanoic acid (PFTA)	ND<1.7			-	
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	2.4			20	

IP-6 (top of casing elevation 101.82ft)					
<i>Sample Date</i>	8/30/19	6/10/20			Vermont Groundwater Enforcement Standard
<i>Analytical Laboratory</i>	Alpha	Con-Test			
<i>Depth to Water (ft)</i>	75.35	75.27			
<i>Groundwater Elevation(ft)</i>	26.47	26.55			
PFAs EPA Method 537.1					
Perfluorobutanoic acid (PFBA)	21	18			-
Perfluorobutanesulfonic acid (PFBS)	0.63	ND<2.0			-
Perfluoropentanoic acid (PFPeA)	94	87			-
Perfluorohexanoic acid (PFHxA)	72	29			-
Perfluorohexanesulfonic acid (PFHxS)	0.88	ND<2.0			20
Perfluoroheptanoic acid (PFHpA)	7.3	4.0			20
Perfluoroheptanesulfonic acid (PFHpS)	ND<1.7	ND<2.0			-
Perfluorooctanoic acid (PFOA)	4.9	3.7			20
Perfluorooctanesulfonic acid (PFOS)	ND<1.7	ND<2.0			20
Perfluorooctanesulfonamide (FOSA)	ND<1.7	ND<2.0			-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	23	ND<2.0			-
Perfluorononanoic acid (PFNA)	ND<1.7	ND<2.0			20
Perfluorodecanoic acid (PFDA)	ND<1.7	ND<2.0			-
Perfluorodecanesulfonic acid (PFDS)	ND<1.7	ND<2.0			-
N-EtFOSAA	ND<1.7	ND<2.0			-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.3	ND<2.0			-
Perfluoroundecanoic acid (PFUnA)	ND<1.7	ND<2.0			-
N-MeFOSAA	ND<1.7	ND<2.0			-
Perfluorododecanoic acid (PFDoA)	ND<1.7	ND<2.0			-
Perfluorotridecanoic acid (PFTrDA)	ND<1.7	ND<2.0			-
Perfluorotetradecanoic acid (PFTA)	ND<1.7	ND<2.0			-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	13	7.7			20

NOTES:

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 Vermont Groundwater Enforcement Standard from Table 1 of Chapter 12, Environmental Protection Rules, July 6, 2019.
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IP-7 (top of casing elevation 93.14 ft)					
Sample Date	8/30/19	6/9/20			Vermont Groundwater Enforcement Standard
Analytical Laboratory	Alpha	Con-Test			
Depth to Water (ft)	66.85	66.81			
Groundwater Elevation(ft)	26.29	26.33			
PFAs EPA Method 537.1					
Perfluorobutanoic acid (PFBA)	1.7	ND<2.0			-
Perfluorobutanesulfonic acid (PFBS)	0.76	ND<2.0			-
Perfluoropentanoic acid (PFPeA)	1.9	ND<2.0			-
Perfluorohexanoic acid (PFHxA)	2.0	ND<2.0			-
Perfluorohexanesulfonic acid (PFHxS)	0.67	ND<2.0			20
Perfluoroheptanoic acid (PFHpA)	0.81	ND<2.0			20
Perfluoroheptanesulfonic acid (PFHpS)	ND<1.9	ND<2.0			-
Perfluorooctanoic acid (PFOA)	2.0	2.2			20
Perfluorooctanesulfonic acid (PFOS)	0.53	ND<2.0			20
Perfluorooctanesulfonamide (FOSA)	ND<1.9	ND<2.0			-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<1.9	ND<2.0			-
Perfluorononanoic acid (PFNA)	ND<1.9	ND<2.0			20
Perfluorodecanoic acid (PFDA)	ND<1.9	ND<2.0			-
Perfluorodecanesulfonic acid (PFDS)	ND<1.9	ND<2.0			-
N-EtFOSAA	ND<1.9	ND<2.0			-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<1.9	ND<2.0			-
Perfluoroundecanoic acid (PFUnA)	ND<1.9	ND<2.0			-
N-MeFOSAA	ND<1.9	ND<2.0			-
Perfluorododecanoic acid (PFDoA)	ND<1.9	ND<2.0			-
Perfluorotridecanoic acid (PFTrDA)	ND<1.9	ND<2.0			-
Perfluorotetradecanoic acid (PFTA)	ND<1.9	ND<2.0			-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	4.0	2.2			20

IP-8 (top of casing elevation 100.72ft)					
Sample Date	8/30/19	6/10/20			Vermont Groundwater Enforcement Standard
Analytical Laboratory	Alpha	Con-Test			
Depth to Water (ft)	74.50	74.40			
Groundwater Elevation(ft)	26.22	26.32			
PFAs EPA Method 537.1					
Perfluorobutanoic acid (PFBA)	8.5	4.3			-
Perfluorobutanesulfonic acid (PFBS)	0.65	ND<2.0			-
Perfluoropentanoic acid (PFPeA)	22	23			-
Perfluorohexanoic acid (PFHxA)	23	12			-
Perfluorohexanesulfonic acid (PFHxS)	0.65	ND<2.0			20
Perfluoroheptanoic acid (PFHpA)	3.3	ND<2.0			20
Perfluoroheptanesulfonic acid (PFHpS)	ND<2.0	ND<2.0			-
Perfluorooctanoic acid (PFOA)	1.1	ND<2.0			20
Perfluorooctanesulfonic acid (PFOS)	ND<2.0	ND<2.0			20
Perfluorooctanesulfonamide (FOSA)	ND<2.0	ND<2.0			-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	11	ND<2.0			-
Perfluorononanoic acid (PFNA)	ND<2.0	ND<2.0			20
Perfluorodecanoic acid (PFDA)	0.43	ND<2.0			-
Perfluorodecanesulfonic acid (PFDS)	ND<2.0	ND<2.0			-
N-EtFOSAA	ND<2.0	ND<2.0			-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	1.9	ND<2.0			-
Perfluoroundecanoic acid (PFUnA)	ND<2.0	ND<2.0			-
N-MeFOSAA	ND<2.0	ND<2.0			-
Perfluorododecanoic acid (PFDoA)	ND<2.0	ND<2.0			-
Perfluorotridecanoic acid (PFTrDA)	ND<2.0	ND<2.0			-
Perfluorotetradecanoic acid (PFTA)	ND<2.0	ND<2.0			-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	5.0	ND			20

NOTES:

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Reported concentrations at/or above VGES are shaded

Top of Casing Elevations and 2019 data are from Stone Environmental Phase II ESA report, October 14, 2019.

July 16, 2020

Alan Liptak
LE Environmental
21 North Main Street #1
Waterbury, VT 05676

Project Location: 161 Wellington Street, Brattleboro, VT
Client Job Number:
Project Number: Brattleboro Brownfields
Laboratory Work Order Number: 20E0343

Enclosed are results of analyses for samples received by the laboratory on May 8, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "R. J. McCarthy", is displayed within a light gray rectangular box.

Raymond J. McCarthy
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

LE Environmental
 21 North Main Street #1
 Waterbury, VT 05676
 ATTN: Alan Liptak

REPORT DATE: 7/16/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: Brattleboro Brownfields

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20E0343

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 161 Wellington Street, Brattleboro, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LF-1	20E0343-01	Sludge		SM 2540G SOP-466 PFAS SW-846 1030 SW-846 1311 SW-846 6010D SW-846 7470A SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C-D SW-846 8270D-E SW-846 9014 SW-846 9030A SW-846 9045C	
LF-2	20E0343-02	Sludge		SM 2540G SOP-466 PFAS SW-846 1030 SW-846 1311 SW-846 6010D SW-846 7470A SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C-D SW-846 8270D-E SW-846 9014 SW-846 9030A SW-846 9045C	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

LE Environmental
 21 North Main Street #1
 Waterbury, VT 05676
 ATTN: Alan Liptak

REPORT DATE: 7/16/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: Brattleboro Brownfields

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20E0343

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 161 Wellington Street, Brattleboro, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LF-3	20E0343-03	Sludge		SM 2540G SOP-466 PFAS SW-846 1030 SW-846 1311 SW-846 6010D SW-846 7470A SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C-D SW-846 8270D-E SW-846 9014 SW-846 9030A SW-846 9045C	
LF-4	20E0343-04	Sludge		SM 2540G SOP-466 PFAS SW-846 1030 SW-846 1311 SW-846 6010D SW-846 7470A SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C-D SW-846 8270D-E SW-846 9014 SW-846 9030A SW-846 9045C	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

LE Environmental
 21 North Main Street #1
 Waterbury, VT 05676
 ATTN: Alan Liptak

REPORT DATE: 7/16/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: Brattleboro Brownfields

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20E0343

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 161 Wellington Street, Brattleboro, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Duplicate	20E0343-05	Sludge		SM 2540G SOP-466 PFAS SW-846 1030 SW-846 1311 SW-846 6010D SW-846 7470A SW-846 7471B SW-846 8082A SW-846 8100 Modified SW-846 8260C-D SW-846 8270D-E SW-846 9014 SW-846 9030A SW-846 9045C	
LF-5	20E0343-06	Sludge		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8260C-D SW-846 8270D-E	
LF-6	20E0343-07	Sludge		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8260C-D SW-846 8270D-E	
LF-7	20E0343-08	Sludge		SM 2540G SW-846 6010D SW-846 7471B SW-846 8082A SW-846 8260C-D SW-846 8270D-E	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

For method 8270E, only PAHs were requested and reported for samples 20E0343-06, -07, -08.

REVISED 7/16/2020: Additional compounds reported on PFAS subcontracted analyses, per client request.

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SW-846 6010D

Qualifications:**L-07**

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:**Selenium**

B257841-BSD1

SW-846 8100 Modified

Qualifications:**MS-07A**

Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:**TPH (C9-C36)**

20E0343-01[LF-1], B258014-MS1, B258014-MSD1

S-01

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

Analyte & Samples(s) Qualified:**2-Fluorobiphenyl**

20E0343-04RE1[LF-4]

SW-846 8260C-D

Qualifications:**L-02**

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:**Methyl Acetate**

B257753-BS1, B257753-BSD1

PR-03

Sample preserved in the laboratory, not in the field as required by the method.

Analyte & Samples(s) Qualified:

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate]

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**Bromoform**

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B257753-BLK1, B257753-BS1, B257753-BSD1

Dichlorodifluoromethane (Freon 12)

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B257753-BLK1, B257753-BS1, B257753-BSD1

Naphthalene

20E0343-06[LF-5], 20E0343-07[LF-6], 20E0343-08[LF-7], B257772-BLK1, B257772-BS1, B257772-BSD1

tert-Butyl Alcohol (TBA)

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B257753-BLK1, B257753-BS1, B257753-BSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Bromomethane**

B257753-BS1, B257753-BSD1

Methyl Acetate

B257753-BS1, B257753-BSD1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**Bromomethane**

20E0343-06[LF-5], 20E0343-07[LF-6], 20E0343-08[LF-7], B257772-BLK1, B257772-BS1, B257772-BSD1

SW-846 8270D-E

Qualifications:**RL-12**

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate]

S-07

One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.

Analyte & Samples(s) Qualified:**2-Fluorophenol**

20E0343-04[LF-4]

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.

Analyte & Samples(s) Qualified:**2,4-Dinitrophenol**

B258013-BLK1, B258013-BS1, B258013-BSD1

Benzidine

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B258013-BLK1, B258013-BS1, B258013-BSD1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:**Aniline**

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B258013-BLK1, B258013-BS1, B258013-BSD1

Benzidine

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B258013-BLK1, B258013-BS1, B258013-BSD1

V-06

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

Analyte & Samples(s) Qualified:**2,4-Dinitrophenol**

B258013-BLK1, B258013-BS1, B258013-BSD1

2-Nitrophenol

B258013-BLK1, B258013-BS1, B258013-BSD1

V-20

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**2,4-Dinitrophenol**

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate]

2-Nitrophenol

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate]

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**4-Chloroaniline**

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate]

V-35

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:**2-Nitroaniline**

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B258013-BLK1, B258013-BS1, B258013-BSD1

Benzidine

20E0343-01[LF-1], 20E0343-02[LF-2], 20E0343-03[LF-3], 20E0343-04[LF-4], 20E0343-05[Duplicate], B258013-BLK1, B258013-BS1, B258013-BSD1

SW-846 8100 Modified

TPH (C9-C36) is quantitated against a calibration made with a diesel standard.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Raymond J. McCarthy
Air Lab Prep

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	5.4	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Acrylonitrile	ND	0.54	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Benzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Bromobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Bromochloromethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Bromodichloromethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Bromoform	ND	0.11	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Bromomethane	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
2-Butanone (MEK)	ND	2.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
tert-Butyl Alcohol (TBA)	ND	2.2	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
n-Butylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
sec-Butylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
tert-Butylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Carbon Disulfide	ND	0.54	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Carbon Tetrachloride	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Chlorobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Chlorodibromomethane	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Chloroethane	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Chloroform	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Chloromethane	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
2-Chlorotoluene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
4-Chlorotoluene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.54	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2-Dibromoethane (EDB)	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Dibromomethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2-Dichlorobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,3-Dichlorobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,4-Dichlorobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
trans-1,4-Dichloro-2-butene	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.22	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1-Dichloroethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2-Dichloroethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1-Dichloroethylene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
cis-1,2-Dichloroethylene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
trans-1,2-Dichloroethylene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2-Dichloropropane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,3-Dichloropropane	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
2,2-Dichloropropane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1-Dichloropropene	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
cis-1,3-Dichloropropene	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
trans-1,3-Dichloropropene	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Diethyl Ether	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,4-Dioxane	ND	5.4	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Ethylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Hexachlorobutadiene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
2-Hexanone (MBK)	ND	1.1	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Isopropylbenzene (Cumene)	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Methyl Acetate	ND	1.1	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Methyl Cyclohexane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Methylene Chloride	ND	0.54	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.1	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Naphthalene	ND	0.54	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
n-Propylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Styrene	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1,1,2-Tetrachloroethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1,2,2-Tetrachloroethane	ND	0.054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Tetrachloroethylene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Tetrahydrofuran	ND	1.1	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Toluene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2,3-Trichlorobenzene	ND	0.54	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2,4-Trichlorobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,3,5-Trichlorobenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1,1-Trichloroethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1,2-Trichloroethane	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Trichloroethylene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Trichlorofluoromethane (Freon 11)	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2,3-Trichloropropane	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,2,4-Trimethylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
1,3,5-Trimethylbenzene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Vinyl Chloride	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
m+p Xylene	ND	0.22	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
o-Xylene	ND	0.11	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:08	MFF
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
1,2-Dichloroethane-d4	109	70-130						5/11/20 19:08	
Toluene-d8	96.2	70-130						5/11/20 19:08	
4-Bromofluorobenzene	101	70-130						5/11/20 19:08	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Acenaphthylene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Acetophenone	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Aniline	ND	1.0	mg/Kg dry	2	V-05	SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Anthracene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzidine	ND	2.0	mg/Kg dry	2	V-04, V-05, V-35	SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzo(a)anthracene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzo(a)pyrene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzo(b)fluoranthene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzo(g,h,i)perylene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzo(k)fluoranthene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Benzoic Acid	ND	3.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Bis(2-chloroethoxy)methane	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Bis(2-chloroethyl)ether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Bis(2-chloroisopropyl)ether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Bis(2-Ethylhexyl)phthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4-Bromophenylphenylether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Butylbenzylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Carbazole	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4-Chloroaniline	ND	2.0	mg/Kg dry	2	V-34	SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4-Chloro-3-methylphenol	ND	2.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2-Chloronaphthalene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2-Chlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4-Chlorophenylphenylether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Chrysene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Dibenz(a,h)anthracene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Dibenzofuran	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Di-n-butylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1,2-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1,3-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1,4-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
3,3-Dichlorobenzidine	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,4-Dichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Diethylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,4-Dimethylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Dimethylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4,6-Dinitro-2-methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,4-Dinitrophenol	ND	2.0	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,4-Dinitrotoluene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,6-Dinitrotoluene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Di-n-octylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Fluoranthene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Fluorene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Hexachlorobutadiene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Hexachlorocyclopentadiene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Hexachloroethane	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Indeno(1,2,3-cd)pyrene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Isophorone	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1-Methylnaphthalene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2-Methylnaphthalene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2-Methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
3/4-Methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Naphthalene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2-Nitroaniline	ND	1.0	mg/Kg dry	2	V-35	SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
3-Nitroaniline	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4-Nitroaniline	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Nitrobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2-Nitrophenol	ND	1.0	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
4-Nitrophenol	ND	2.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
N-Nitrosodimethylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
N-Nitrosodiphenylamine/Diphenylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
N-Nitrosodi-n-propylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Pentachloronitrobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Pentachlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Phenanthrene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Phenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Pyrene	ND	0.51	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
Pyridine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1,2,4,5-Tetrachlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
1,2,4-Trichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,4,5-Trichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB
2,4,6-Trichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:08	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	34.5	30-130	
Phenol-d6	37.2	30-130	
Nitrobenzene-d5	40.0	30-130	
2-Fluorobiphenyl	43.7	30-130	
2,4,6-Tribromophenol	39.9	30-130	
p-Terphenyl-d14	55.9	30-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1254 [1]	0.38	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1260 [2]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 16:51	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		87.7	30-150					5/14/20 16:51	
Decachlorobiphenyl [2]		86.7	30-150					5/14/20 16:51	
Tetrachloro-m-xylene [1]		98.4	30-150					5/14/20 16:51	
Tetrachloro-m-xylene [2]		91.2	30-150					5/14/20 16:51	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	2900	130	mg/Kg dry	10	MS-07A	SW-846 8100 Modified	5/14/20	5/18/20 12:57	RMW
Surrogates		% Recovery			Recovery Limits				
2-Fluorobiphenyl		44.9			40-140			5/18/20 12:57	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	5.1	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Barium	130	2.5	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Cadmium	ND	0.51	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Chromium	45	1.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Lead	65	0.76	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Mercury	0.22	0.038	mg/Kg dry	1		SW-846 7471B	5/18/20	5/20/20 13:26	CJV
Selenium	ND	5.1	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Silver	0.68	0.51	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH
Vanadium	180	1.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:04	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	65.5		% Wt	1		SM 2540G	5/11/20	5/11/20 12:29	CJT
Ignitability	Absent		present/absent	1		SW-846 1030	5/14/20	5/14/20 17:50	DJM
pH @18.1°C	5.1		pH Units	1		SW-846 9045C	5/8/20	5/8/20 21:30	DJM
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	5/15/20	5/16/20 13:05	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	5/15/20	5/16/20 15:05	EC

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:52	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	5/12/20	5/13/20 11:16	CJV
Vanadium	0.019	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:52	QNW
Barium	ND	0.50	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:52	QNW
Cadmium	ND	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:52	QNW
Chromium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:52	QNW
Lead	ND	0.10	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:52	QNW
Selenium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 14:52	MJH
Silver	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 14:52	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-1

Sampled: 5/8/2020 11:35

Sample ID: 20E0343-01

Sample Matrix: Sludge

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
See Attached Subcontract Report	-	-		µg/kg	1		SOP-466 PFAS		5/20/20 0:00	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	5.9	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Acrylonitrile	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Benzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Bromobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Bromochloromethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Bromodichloromethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Bromoform	ND	0.12	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Bromomethane	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
2-Butanone (MEK)	ND	2.3	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
tert-Butyl Alcohol (TBA)	ND	2.3	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
n-Butylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
sec-Butylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
tert-Butylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Carbon Disulfide	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Carbon Tetrachloride	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Chlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Chlorodibromomethane	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Chloroethane	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Chloroform	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Chloromethane	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
2-Chlorotoluene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
4-Chlorotoluene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2-Dibromoethane (EDB)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Dibromomethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2-Dichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,3-Dichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,4-Dichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
trans-1,4-Dichloro-2-butene	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.23	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1-Dichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2-Dichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1-Dichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
cis-1,2-Dichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
trans-1,2-Dichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2-Dichloropropane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,3-Dichloropropane	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
2,2-Dichloropropane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1-Dichloropropene	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
cis-1,3-Dichloropropene	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
trans-1,3-Dichloropropene	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Diethyl Ether	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,4-Dioxane	ND	5.9	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Ethylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Hexachlorobutadiene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
2-Hexanone (MBK)	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Isopropylbenzene (Cumene)	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Methyl Acetate	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Methyl Cyclohexane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Methylene Chloride	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Naphthalene	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
n-Propylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Styrene	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1,1,2-Tetrachloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1,2,2-Tetrachloroethane	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Tetrachloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Tetrahydrofuran	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Toluene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2,3-Trichlorobenzene	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2,4-Trichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,3,5-Trichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1,1-Trichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1,2-Trichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Trichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Trichlorofluoromethane (Freon 11)	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2,3-Trichloropropane	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,2,4-Trimethylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
1,3,5-Trimethylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Vinyl Chloride	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
m+p Xylene	ND	0.23	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
o-Xylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:31	MFF
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1,2-Dichloroethane-d4		110	70-130					5/11/20 19:31	
Toluene-d8		95.2	70-130					5/11/20 19:31	
4-Bromofluorobenzene		103	70-130					5/11/20 19:31	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Acenaphthylene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Acetophenone	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Aniline	ND	1.0	mg/Kg dry	2	V-05	SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Anthracene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzidine	ND	2.0	mg/Kg dry	2	V-04, V-05, V-35	SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzo(a)anthracene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzo(a)pyrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzo(b)fluoranthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzo(g,h,i)perylene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzo(k)fluoranthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Benzoic Acid	ND	3.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Bis(2-chloroethoxy)methane	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Bis(2-chloroethyl)ether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Bis(2-chloroisopropyl)ether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Bis(2-Ethylhexyl)phthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4-Bromophenylphenylether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Butylbenzylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Carbazole	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4-Chloroaniline	ND	2.0	mg/Kg dry	2	V-34	SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4-Chloro-3-methylphenol	ND	2.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2-Chloronaphthalene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2-Chlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4-Chlorophenylphenylether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Chrysene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Dibenz(a,h)anthracene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Dibenzofuran	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Di-n-butylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1,2-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1,3-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1,4-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
3,3-Dichlorobenzidine	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,4-Dichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Diethylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,4-Dimethylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Dimethylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4,6-Dinitro-2-methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,4-Dinitrophenol	ND	2.0	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,4-Dinitrotoluene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,6-Dinitrotoluene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Di-n-octylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Fluoranthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Fluorene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Hexachlorobutadiene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Hexachlorocyclopentadiene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Hexachloroethane	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Indeno(1,2,3-cd)pyrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Isophorone	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1-Methylnaphthalene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2-Methylnaphthalene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2-Methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
3/4-Methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Naphthalene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2-Nitroaniline	ND	1.0	mg/Kg dry	2	V-35	SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
3-Nitroaniline	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4-Nitroaniline	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Nitrobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2-Nitrophenol	ND	1.0	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
4-Nitrophenol	ND	2.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
N-Nitrosodimethylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
N-Nitrosodiphenylamine/Diphenylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
N-Nitrosodi-n-propylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Pentachloronitrobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Pentachlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Phenanthrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Phenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Pyrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
Pyridine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1,2,4,5-Tetrachlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
1,2,4-Trichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,4,5-Trichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB
2,4,6-Trichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 12:35	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	40.4	30-130	5/18/20 12:35
Phenol-d6	42.1	30-130	5/18/20 12:35
Nitrobenzene-d5	45.6	30-130	5/18/20 12:35
2-Fluorobiphenyl	48.1	30-130	5/18/20 12:35
2,4,6-Tribromophenol	46.8	30-130	5/18/20 12:35
p-Terphenyl-d14	57.5	30-130	5/18/20 12:35

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1254 [2]	0.47	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1260 [1]	0.20	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:08	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		83.3	30-150					5/14/20 17:08	
Decachlorobiphenyl [2]		83.6	30-150					5/14/20 17:08	
Tetrachloro-m-xylene [1]		96.6	30-150					5/14/20 17:08	
Tetrachloro-m-xylene [2]		86.9	30-150					5/14/20 17:08	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	3100	130	mg/Kg dry	10		SW-846 8100 Modified	5/14/20	5/18/20 13:58	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		49.0	40-140					5/18/20 13:58	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	4.9	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Barium	93	2.4	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Cadmium	ND	0.49	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Chromium	42	0.98	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Lead	60	0.73	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Mercury	0.47	0.039	mg/Kg dry	1		SW-846 7471B	5/18/20	5/20/20 13:32	CJV
Selenium	ND	4.9	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Silver	ND	0.49	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH
Vanadium	200	0.98	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:08	MJH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Sampled: 5/8/2020 11:15

Field Sample #: LF-2

Sample ID: 20E0343-02

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	65.2		% Wt	1		SM 2540G	5/11/20	5/11/20 12:30	CJT
Ignitability	Absent		present/absent	1		SW-846 1030	5/14/20	5/14/20 17:50	DJM
pH @18.4°C	4.6		pH Units	1		SW-846 9045C	5/8/20	5/8/20 21:30	DJM
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	5/15/20	5/16/20 13:05	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	5/15/20	5/16/20 15:05	EC

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:59	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	5/12/20	5/13/20 11:21	CJV
Vanadium	0.058	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:59	QNW
Barium	ND	0.50	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:59	QNW
Cadmium	ND	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:59	QNW
Chromium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:59	QNW
Lead	ND	0.10	mg/L	1		SW-846 6010D	5/12/20	5/12/20 21:59	QNW
Selenium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 14:58	MJH
Silver	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 14:58	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-2

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-02

Sample Matrix: Sludge

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
See Attached Subcontract Report	-	-		µg/kg	1		SOP-466 PFAS		5/20/20 0:00	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	5.9	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Acrylonitrile	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Benzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Bromobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Bromochloromethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Bromodichloromethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Bromoform	ND	0.12	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Bromomethane	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
2-Butanone (MEK)	ND	2.4	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
tert-Butyl Alcohol (TBA)	ND	2.4	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
n-Butylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
sec-Butylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
tert-Butylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Carbon Disulfide	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Carbon Tetrachloride	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Chlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Chlorodibromomethane	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Chloroethane	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Chloroform	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Chloromethane	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
2-Chlorotoluene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
4-Chlorotoluene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2-Dibromoethane (EDB)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Dibromomethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2-Dichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,3-Dichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,4-Dichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
trans-1,4-Dichloro-2-butene	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.24	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1-Dichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2-Dichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1-Dichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
cis-1,2-Dichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
trans-1,2-Dichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2-Dichloropropane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,3-Dichloropropane	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
2,2-Dichloropropane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1-Dichloropropene	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
cis-1,3-Dichloropropene	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
trans-1,3-Dichloropropene	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Diethyl Ether	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,4-Dioxane	ND	5.9	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Ethylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Hexachlorobutadiene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
2-Hexanone (MBK)	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Isopropylbenzene (Cumene)	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Methyl Acetate	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Methyl Cyclohexane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Methylene Chloride	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Naphthalene	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
n-Propylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Styrene	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1,1,2-Tetrachloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1,2,2-Tetrachloroethane	ND	0.059	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Tetrachloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Tetrahydrofuran	ND	1.2	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Toluene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2,3-Trichlorobenzene	ND	0.59	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2,4-Trichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,3,5-Trichlorobenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1,1-Trichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1,2-Trichloroethane	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Trichloroethylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Trichlorofluoromethane (Freon 11)	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2,3-Trichloropropane	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,2,4-Trimethylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
1,3,5-Trimethylbenzene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Vinyl Chloride	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
m+p Xylene	ND	0.24	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
o-Xylene	ND	0.12	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 19:55	MFF
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1,2-Dichloroethane-d4		111	70-130					5/11/20 19:55	
Toluene-d8		95.7	70-130					5/11/20 19:55	
4-Bromofluorobenzene		101	70-130					5/11/20 19:55	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Acenaphthylene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Acetophenone	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Aniline	ND	2.2	mg/Kg dry	2	V-05	SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Anthracene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzidine	ND	4.3	mg/Kg dry	2	V-04, V-05, V-35	SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzo(a)anthracene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzo(a)pyrene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzo(b)fluoranthene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzo(g,h,i)perylene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzo(k)fluoranthene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Benzoic Acid	ND	6.6	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Bis(2-chloroethoxy)methane	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Bis(2-chloroethyl)ether	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Bis(2-chloroisopropyl)ether	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Bis(2-Ethylhexyl)phthalate	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4-Bromophenylphenylether	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Butylbenzylphthalate	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Carbazole	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4-Chloroaniline	ND	4.3	mg/Kg dry	2	V-34	SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4-Chloro-3-methylphenol	ND	4.3	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2-Chloronaphthalene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2-Chlorophenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4-Chlorophenylphenylether	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Chrysene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Dibenz(a,h)anthracene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Dibenzofuran	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Di-n-butylphthalate	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1,2-Dichlorobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1,3-Dichlorobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1,4-Dichlorobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
3,3-Dichlorobenzidine	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,4-Dichlorophenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Diethylphthalate	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,4-Dimethylphenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Dimethylphthalate	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4,6-Dinitro-2-methylphenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,4-Dinitrophenol	ND	4.3	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,4-Dinitrotoluene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,6-Dinitrotoluene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Di-n-octylphthalate	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1,2-Diphenylhydrazine/Azobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Fluoranthene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Fluorene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Hexachlorobutadiene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Hexachlorocyclopentadiene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Hexachloroethane	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Indeno(1,2,3-cd)pyrene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Isophorone	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1-Methylnaphthalene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2-Methylnaphthalene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2-Methylphenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
3/4-Methylphenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Naphthalene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2-Nitroaniline	ND	2.2	mg/Kg dry	2	V-35	SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
3-Nitroaniline	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4-Nitroaniline	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Nitrobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2-Nitrophenol	ND	2.2	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
4-Nitrophenol	ND	4.3	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
N-Nitrosodimethylamine	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
N-Nitrosodiphenylamine/Diphenylamine	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
N-Nitrosodi-n-propylamine	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Pentachloronitrobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Pentachlorophenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Phenanthrene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Phenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Pyrene	ND	1.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
Pyridine	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1,2,4,5-Tetrachlorobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
1,2,4-Trichlorobenzene	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,4,5-Trichlorophenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB
2,4,6-Trichlorophenol	ND	2.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:00	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	50.9	30-130	
Phenol-d6	54.0	30-130	
Nitrobenzene-d5	57.0	30-130	
2-Fluorobiphenyl	60.6	30-130	
2,4,6-Tribromophenol	57.9	30-130	
p-Terphenyl-d14	69.2	30-130	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1221 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1232 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1242 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1248 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1254 [2]	0.38	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1260 [1]	0.18	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1262 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Aroclor-1268 [1]	ND	0.13	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:26	TG
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]	85.6		30-150				5/14/20 17:26		
Decachlorobiphenyl [2]	83.3		30-150				5/14/20 17:26		
Tetrachloro-m-xylene [1]	93.6		30-150				5/14/20 17:26		
Tetrachloro-m-xylene [2]	87.1		30-150				5/14/20 17:26		

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	4300	270	mg/Kg dry	10		SW-846 8100 Modified	5/14/20	5/18/20 14:19	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		50.7	40-140					5/18/20 14:19	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	5.4	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Barium	110	2.7	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Cadmium	ND	0.54	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Chromium	44	1.1	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Lead	43	0.82	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Mercury	0.18	0.040	mg/Kg dry	1		SW-846 7471B	5/18/20	5/20/20 13:34	CJV
Selenium	ND	5.4	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Silver	0.54	0.54	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH
Vanadium	340	1.1	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:12	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	59.8		% Wt	1		SM 2540G	5/11/20	5/11/20 12:30	CJT
Ignitability	Absent		present/absent	1		SW-846 1030	5/14/20	5/14/20 17:50	DJM
pH @17.8°C	4.6		pH Units	1		SW-846 9045C	5/8/20	5/8/20 21:30	DJM
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	5/15/20	5/16/20 13:05	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	5/15/20	5/16/20 15:05	EC

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:06	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	5/12/20	5/13/20 11:22	CJV
Vanadium	0.10	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:06	QNW
Barium	ND	0.50	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:06	QNW
Cadmium	ND	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:06	QNW
Chromium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:06	QNW
Lead	ND	0.10	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:06	QNW
Selenium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 15:06	MJH
Silver	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 15:06	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-3

Sampled: 5/8/2020 11:00

Sample ID: 20E0343-03

Sample Matrix: Sludge

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
See Attached Subcontract Report	-	-		µg/kg	1		SOP-466 PFAS		5/20/20 0:00	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	6.6	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Acrylonitrile	ND	0.66	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Benzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Bromobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Bromochloromethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Bromodichloromethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Bromoform	ND	0.13	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Bromomethane	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
2-Butanone (MEK)	ND	2.6	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
tert-Butyl Alcohol (TBA)	ND	2.6	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
n-Butylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
sec-Butylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
tert-Butylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Carbon Disulfide	ND	0.66	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Carbon Tetrachloride	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Chlorobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Chlorodibromomethane	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Chloroethane	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Chloroform	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Chloromethane	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
2-Chlorotoluene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
4-Chlorotoluene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.66	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2-Dibromoethane (EDB)	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Dibromomethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2-Dichlorobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,3-Dichlorobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,4-Dichlorobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
trans-1,4-Dichloro-2-butene	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.26	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1-Dichloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2-Dichloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1-Dichloroethylene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
cis-1,2-Dichloroethylene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
trans-1,2-Dichloroethylene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2-Dichloropropane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,3-Dichloropropane	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
2,2-Dichloropropane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1-Dichloropropene	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
cis-1,3-Dichloropropene	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
trans-1,3-Dichloropropene	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Diethyl Ether	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,4-Dioxane	ND	6.6	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Ethylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Hexachlorobutadiene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
2-Hexanone (MBK)	ND	1.3	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Isopropylbenzene (Cumene)	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Methyl Acetate	ND	1.3	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Methyl Cyclohexane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Methylene Chloride	ND	0.66	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.3	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Naphthalene	ND	0.66	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
n-Propylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Styrene	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1,1,2-Tetrachloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1,2,2-Tetrachloroethane	ND	0.066	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Tetrachloroethylene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Tetrahydrofuran	ND	1.3	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Toluene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2,3-Trichlorobenzene	ND	0.66	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2,4-Trichlorobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,3,5-Trichlorobenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1,1-Trichloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1,2-Trichloroethane	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Trichloroethylene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Trichlorofluoromethane (Freon 11)	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2,3-Trichloropropane	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,2,4-Trimethylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
1,3,5-Trimethylbenzene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Vinyl Chloride	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
m+p Xylene	ND	0.26	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
o-Xylene	ND	0.13	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:18	MFF
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
1,2-Dichloroethane-d4	107	70-130						5/11/20 20:18	
Toluene-d8	96.4	70-130						5/11/20 20:18	
4-Bromofluorobenzene	102	70-130						5/11/20 20:18	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Acenaphthylene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Acetophenone	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Aniline	ND	1.2	mg/Kg dry	2	V-05	SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Anthracene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzidine	ND	2.4	mg/Kg dry	2	V-04, V-05, V-35	SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzo(a)anthracene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzo(a)pyrene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzo(b)fluoranthene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzo(g,h,i)perylene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzo(k)fluoranthene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Benzoic Acid	ND	3.6	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Bis(2-chloroethoxy)methane	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Bis(2-chloroethyl)ether	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Bis(2-chloroisopropyl)ether	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Bis(2-Ethylhexyl)phthalate	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4-Bromophenylphenylether	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Butylbenzylphthalate	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Carbazole	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4-Chloroaniline	ND	2.4	mg/Kg dry	2	V-34	SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4-Chloro-3-methylphenol	ND	2.4	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2-Chloronaphthalene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2-Chlorophenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4-Chlorophenylphenylether	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Chrysene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Dibenz(a,h)anthracene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Dibenzofuran	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Di-n-butylphthalate	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1,2-Dichlorobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1,3-Dichlorobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1,4-Dichlorobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
3,3-Dichlorobenzidine	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,4-Dichlorophenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Diethylphthalate	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,4-Dimethylphenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Dimethylphthalate	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4,6-Dinitro-2-methylphenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,4-Dinitrophenol	ND	2.4	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,4-Dinitrotoluene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,6-Dinitrotoluene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Di-n-octylphthalate	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1,2-Diphenylhydrazine/Azobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Fluoranthene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Fluorene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Hexachlorobutadiene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Hexachlorocyclopentadiene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Hexachloroethane	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Indeno(1,2,3-cd)pyrene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Isophorone	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1-Methylnaphthalene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2-Methylnaphthalene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2-Methylphenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
3/4-Methylphenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Naphthalene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2-Nitroaniline	ND	1.2	mg/Kg dry	2	V-35	SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
3-Nitroaniline	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4-Nitroaniline	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Nitrobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2-Nitrophenol	ND	1.2	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
4-Nitrophenol	ND	2.4	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
N-Nitrosodimethylamine	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
N-Nitrosodiphenylamine/Diphenylamine	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
N-Nitrosodi-n-propylamine	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Pentachloronitrobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Pentachlorophenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Phenanthrene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Phenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Pyrene	ND	0.61	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
Pyridine	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1,2,4,5-Tetrachlorobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
1,2,4-Trichlorobenzene	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,4,5-Trichlorophenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB
2,4,6-Trichlorophenol	ND	1.2	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:25	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	28.6	*	30-130
Phenol-d6	30.0		30-130
Nitrobenzene-d5	33.1		30-130
2-Fluorobiphenyl	34.8		30-130
2,4,6-Tribromophenol	31.9		30-130
p-Terphenyl-d14	40.5		30-130

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1221 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1232 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1242 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1248 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1254 [2]	0.38	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1260 [1]	0.19	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1262 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Aroclor-1268 [1]	ND	0.14	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 17:43	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		87.7	30-150					5/14/20 17:43	
Decachlorobiphenyl [2]		85.7	30-150					5/14/20 17:43	
Tetrachloro-m-xylene [1]		98.2	30-150					5/14/20 17:43	
Tetrachloro-m-xylene [2]		91.1	30-150					5/14/20 17:43	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	5200	570	mg/Kg dry	20		SW-846 8100 Modified	5/18/20	5/19/20 18:13	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		*	40-140		S-01			5/19/20 18:13	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	6.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Barium	93	3.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Cadmium	ND	0.60	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Chromium	29	1.2	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Lead	32	0.90	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Mercury	0.12	0.046	mg/Kg dry	1		SW-846 7471B	5/18/20	5/20/20 13:35	CJV
Selenium	ND	6.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Silver	0.80	0.60	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH
Vanadium	140	1.2	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:16	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	55.5		% Wt	1		SM 2540G	5/11/20	5/11/20 12:30	CJT
Ignitability	Absent		present/absent	1		SW-846 1030	5/14/20	5/14/20 17:50	DJM
pH @17.6°C	4.3		pH Units	1		SW-846 9045C	5/8/20	5/8/20 21:30	DJM
Reactive Cyanide	ND	4.0	mg/Kg	1		SW-846 9014	5/15/20	5/16/20 13:05	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	5/15/20	5/16/20 15:05	EC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:13	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	5/12/20	5/13/20 11:28	CJV
Vanadium	0.022	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:13	QNW
Barium	ND	0.50	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:13	QNW
Cadmium	ND	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:13	QNW
Chromium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:13	QNW
Lead	ND	0.10	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:13	QNW
Selenium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 15:13	MJH
Silver	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 15:13	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-4

Sampled: 5/8/2020 10:45

Sample ID: 20E0343-04

Sample Matrix: Sludge

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
See Attached Subcontract Report	-	-		µg/kg	1		SOP-466 PFAS		5/20/20 0:00	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	5.1	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Acrylonitrile	ND	0.51	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Benzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Bromobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Bromochloromethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Bromodichloromethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Bromoform	ND	0.10	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Bromomethane	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
2-Butanone (MEK)	ND	2.0	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
tert-Butyl Alcohol (TBA)	ND	2.0	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
n-Butylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
sec-Butylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
tert-Butylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Carbon Disulfide	ND	0.51	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Carbon Tetrachloride	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Chlorobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Chlorodibromomethane	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Chloroethane	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Chloroform	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Chloromethane	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
2-Chlorotoluene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
4-Chlorotoluene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.51	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2-Dibromoethane (EDB)	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Dibromomethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2-Dichlorobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,3-Dichlorobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,4-Dichlorobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
trans-1,4-Dichloro-2-butene	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.20	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1-Dichloroethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2-Dichloroethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1-Dichloroethylene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
cis-1,2-Dichloroethylene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
trans-1,2-Dichloroethylene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2-Dichloropropane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,3-Dichloropropane	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
2,2-Dichloropropane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1-Dichloropropene	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
cis-1,3-Dichloropropene	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
trans-1,3-Dichloropropene	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Diethyl Ether	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Sample Flags: PR-03

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,4-Dioxane	ND	5.1	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Ethylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Hexachlorobutadiene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
2-Hexanone (MBK)	ND	1.0	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Isopropylbenzene (Cumene)	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Methyl Acetate	ND	1.0	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Methyl Cyclohexane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Methylene Chloride	ND	0.51	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
4-Methyl-2-pentanone (MIBK)	ND	1.0	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Naphthalene	ND	0.51	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
n-Propylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Styrene	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1,1,2-Tetrachloroethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1,2,2-Tetrachloroethane	ND	0.051	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Tetrachloroethylene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Tetrahydrofuran	ND	1.0	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Toluene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2,3-Trichlorobenzene	ND	0.51	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2,4-Trichlorobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,3,5-Trichlorobenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1,1-Trichloroethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1,2-Trichloroethane	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Trichloroethylene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Trichlorofluoromethane (Freon 11)	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2,3-Trichloropropane	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,2,4-Trimethylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
1,3,5-Trimethylbenzene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Vinyl Chloride	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
m+p Xylene	ND	0.20	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
o-Xylene	ND	0.10	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 20:42	MFF
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
1,2-Dichloroethane-d4	107	70-130						5/11/20 20:42	
Toluene-d8	94.9	70-130						5/11/20 20:42	
4-Bromofluorobenzene	99.4	70-130						5/11/20 20:42	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Acenaphthylene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Acetophenone	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Aniline	ND	1.0	mg/Kg dry	2	V-05	SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Anthracene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzidine	ND	2.0	mg/Kg dry	2	V-04, V-05, V-35	SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzo(a)anthracene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzo(a)pyrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzo(b)fluoranthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzo(g,h,i)perylene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzo(k)fluoranthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Benzoic Acid	ND	3.1	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Bis(2-chloroethoxy)methane	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Bis(2-chloroethyl)ether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Bis(2-chloroisopropyl)ether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Bis(2-Ethylhexyl)phthalate	1.2	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4-Bromophenylphenylether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Butylbenzylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Carbazole	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4-Chloroaniline	ND	2.0	mg/Kg dry	2	V-34	SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4-Chloro-3-methylphenol	ND	2.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2-Chloronaphthalene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2-Chlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4-Chlorophenylphenylether	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Chrysene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Dibenz(a,h)anthracene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Dibenzofuran	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Di-n-butylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1,2-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1,3-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1,4-Dichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
3,3-Dichlorobenzidine	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,4-Dichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Diethylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,4-Dimethylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Dimethylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4,6-Dinitro-2-methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,4-Dinitrophenol	ND	2.0	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,4-Dinitrotoluene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,6-Dinitrotoluene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Di-n-octylphthalate	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1,2-Diphenylhydrazine/Azobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Fluoranthene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Fluorene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Sample Flags: RL-12

Semivolatle Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexachlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Hexachlorobutadiene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Hexachlorocyclopentadiene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Hexachloroethane	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Indeno(1,2,3-cd)pyrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Isophorone	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1-Methylnaphthalene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2-Methylnaphthalene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2-Methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
3/4-Methylphenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Naphthalene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2-Nitroaniline	ND	1.0	mg/Kg dry	2	V-35	SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
3-Nitroaniline	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4-Nitroaniline	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Nitrobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2-Nitrophenol	ND	1.0	mg/Kg dry	2	V-20	SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
4-Nitrophenol	ND	2.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
N-Nitrosodimethylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
N-Nitrosodiphenylamine/Diphenylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
N-Nitrosodi-n-propylamine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Pentachloronitrobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Pentachlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Phenanthrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Phenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Pyrene	ND	0.52	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
Pyridine	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1,2,4,5-Tetrachlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
1,2,4-Trichlorobenzene	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,4,5-Trichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB
2,4,6-Trichlorophenol	ND	1.0	mg/Kg dry	2		SW-846 8270D-E	5/14/20	5/18/20 13:50	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual
2-Fluorophenol	37.9	30-130	
Phenol-d6	40.8	30-130	
Nitrobenzene-d5	42.9	30-130	
2-Fluorobiphenyl	45.8	30-130	
2,4,6-Tribromophenol	44.4	30-130	
p-Terphenyl-d14	51.3	30-130	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1221 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1232 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1242 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1248 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1254 [1]	0.67	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1260 [1]	0.56	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1262 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Aroclor-1268 [1]	ND	0.12	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:01	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		85.6	30-150					5/14/20 18:01	
Decachlorobiphenyl [2]		83.9	30-150					5/14/20 18:01	
Tetrachloro-m-xylene [1]		97.0	30-150					5/14/20 18:01	
Tetrachloro-m-xylene [2]		88.2	30-150					5/14/20 18:01	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Petroleum Hydrocarbons Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
TPH (C9-C36)	3300	130	mg/Kg dry	10		SW-846 8100 Modified	5/14/20	5/18/20 15:00	RMW
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
2-Fluorobiphenyl		53.1	40-140					5/18/20 15:00	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	5.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Barium	85	2.5	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Cadmium	ND	0.50	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Chromium	47	1.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Lead	56	0.76	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Mercury	0.45	0.037	mg/Kg dry	1		SW-846 7471B	5/18/20	5/20/20 13:37	CJV
Selenium	ND	5.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Silver	ND	0.50	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH
Vanadium	180	1.0	mg/Kg dry	1		SW-846 6010D	5/18/20	5/19/20 17:21	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	65.3		% Wt	1		SM 2540G	5/11/20	5/11/20 12:30	CJT
Ignitability	Absent		present/absent	1		SW-846 1030	5/14/20	5/14/20 17:50	DJM
pH @17.6°C	4.7		pH Units	1		SW-846 9045C	5/8/20	5/8/20 21:30	DJM
Reactive Cyanide	ND	3.9	mg/Kg	1		SW-846 9014	5/15/20	5/16/20 13:05	EC
Reactive Sulfide	ND	20	mg/Kg	1		SW-846 9030A	5/15/20	5/16/20 15:05	EC

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

TCLP - Metals Analyses

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:20	QNW
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	5/12/20	5/13/20 11:30	CJV
Vanadium	0.045	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:20	QNW
Barium	ND	0.50	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:20	QNW
Cadmium	ND	0.010	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:20	QNW
Chromium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:20	QNW
Lead	ND	0.10	mg/L	1		SW-846 6010D	5/12/20	5/12/20 22:20	QNW
Selenium	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 15:21	MJH
Silver	ND	0.050	mg/L	1		SW-846 6010D	5/12/20	5/13/20 15:21	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: Duplicate

Sampled: 5/8/2020 11:15

Sample ID: 20E0343-05

Sample Matrix: Sludge

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
See Attached Subcontract Report	-	-		µg/kg	1		SOP-466 PFAS		5/20/20 0:00	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-5

Sampled: 5/8/2020 09:15

Sample ID: 20E0343-06

Sample Matrix: Sludge

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Acrylonitrile	ND	0.0054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Benzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Bromobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Bromochloromethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Bromodichloromethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Bromoform	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Bromomethane	ND	0.0090	mg/Kg dry	1	V-34	SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
2-Butanone (MEK)	ND	0.036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
tert-Butyl Alcohol (TBA)	ND	0.036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
n-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
sec-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
tert-Butylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Carbon Disulfide	ND	0.0054	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Carbon Tetrachloride	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Chlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Chlorodibromomethane	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Chloroethane	ND	0.018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Chloroform	ND	0.0036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Chloromethane	ND	0.0090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
2-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
4-Chlorotoluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2-Dibromoethane (EDB)	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Dibromomethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,3-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,4-Dichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
trans-1,4-Dichloro-2-butene	ND	0.0036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2-Dichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1-Dichloroethylene	ND	0.0036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
cis-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
trans-1,2-Dichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,3-Dichloropropane	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
2,2-Dichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1-Dichloropropene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
cis-1,3-Dichloropropene	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
trans-1,3-Dichloropropene	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Diethyl Ether	ND	0.018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-5

Sampled: 5/8/2020 09:15

Sample ID: 20E0343-06

Sample Matrix: Sludge

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,4-Dioxane	ND	0.090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Ethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Hexachlorobutadiene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
2-Hexanone (MBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Isopropylbenzene (Cumene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Methyl Acetate	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Methyl Cyclohexane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Methylene Chloride	ND	0.018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Naphthalene	ND	0.0036	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
n-Propylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Styrene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1,1,2-Tetrachloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1,2,2-Tetrachloroethane	ND	0.00090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Tetrachloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Tetrahydrofuran	ND	0.0090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Toluene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2,3-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2,4-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,3,5-Trichlorobenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1,1-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1,2-Trichloroethane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Trichloroethylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2,3-Trichloropropane	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,2,4-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
1,3,5-Trimethylbenzene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Vinyl Chloride	ND	0.0090	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
m+p Xylene	ND	0.0036	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
o-Xylene	ND	0.0018	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:00	MFF
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1,2-Dichloroethane-d4		104	70-130					5/11/20 9:00	
Toluene-d8		102	70-130					5/11/20 9:00	
4-Bromofluorobenzene		98.4	70-130					5/11/20 9:00	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-5

Sampled: 5/8/2020 09:15

Sample ID: 20E0343-06

Sample Matrix: Sludge

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Acenaphthylene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Benzo(a)anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Benzo(a)pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Benzo(b)fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Benzo(g,h,i)perylene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Benzo(k)fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Chrysene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Dibenz(a,h)anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Fluorene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Indeno(1,2,3-cd)pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
2-Methylnaphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Naphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Phenanthrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 15:38	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		57.9	30-130					5/14/20 15:38	
2-Fluorobiphenyl		62.0	30-130					5/14/20 15:38	
p-Terphenyl-d14		72.2	30-130					5/14/20 15:38	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-5

Sampled: 5/8/2020 09:15

Sample ID: 20E0343-06

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1221 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1232 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1242 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1248 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1254 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1260 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1262 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Aroclor-1268 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:18	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		93.4	30-150					5/14/20 18:18	
Decachlorobiphenyl [2]		87.0	30-150					5/14/20 18:18	
Tetrachloro-m-xylene [1]		101	30-150					5/14/20 18:18	
Tetrachloro-m-xylene [2]		90.8	30-150					5/14/20 18:18	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-5

Sampled: 5/8/2020 09:15

Sample ID: 20E0343-06

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	5.8	3.7	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH
Barium	29	1.8	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH
Cadmium	ND	0.37	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH
Chromium	13	0.74	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH
Lead	7.8	0.55	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH
Mercury	0.037	0.029	mg/Kg dry	1		SW-846 7471B	5/11/20	5/12/20 14:29	CJV
Selenium	ND	3.7	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH
Silver	ND	0.37	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 15:56	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-5

Sampled: 5/8/2020 09:15

Sample ID: 20E0343-06

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.0		% Wt	1		SM 2540G	5/11/20	5/11/20 12:30	CJT

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-6

Sampled: 5/8/2020 09:45

Sample ID: 20E0343-07

Sample Matrix: Sludge

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Acrylonitrile	ND	0.0052	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Benzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Bromobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Bromochloromethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Bromodichloromethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Bromoform	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Bromomethane	ND	0.0087	mg/Kg dry	1	V-34	SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
2-Butanone (MEK)	ND	0.035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
tert-Butyl Alcohol (TBA)	ND	0.035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
n-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
sec-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
tert-Butylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Carbon Disulfide	ND	0.0052	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Carbon Tetrachloride	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Chlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Chlorodibromomethane	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Chloroethane	ND	0.017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Chloroform	ND	0.0035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Chloromethane	ND	0.0087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
2-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
4-Chlorotoluene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2-Dibromoethane (EDB)	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Dibromomethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,3-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,4-Dichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
trans-1,4-Dichloro-2-butene	ND	0.0035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2-Dichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1-Dichloroethylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
cis-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
trans-1,2-Dichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,3-Dichloropropane	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
2,2-Dichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1-Dichloropropene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
cis-1,3-Dichloropropene	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
trans-1,3-Dichloropropene	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Diethyl Ether	ND	0.017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-6

Sampled: 5/8/2020 09:45

Sample ID: 20E0343-07

Sample Matrix: Sludge

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,4-Dioxane	ND	0.087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Ethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Hexachlorobutadiene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
2-Hexanone (MBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Isopropylbenzene (Cumene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Methyl Acetate	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Methyl Cyclohexane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Methylene Chloride	ND	0.017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Naphthalene	ND	0.0035	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
n-Propylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Styrene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1,1,2-Tetrachloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1,2,2-Tetrachloroethane	ND	0.00087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Tetrachloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Tetrahydrofuran	ND	0.0087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Toluene	0.0025	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2,3-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2,4-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,3,5-Trichlorobenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1,1-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1,2-Trichloroethane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Trichloroethylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2,3-Trichloropropane	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,2,4-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
1,3,5-Trimethylbenzene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Vinyl Chloride	ND	0.0087	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
m+p Xylene	ND	0.0035	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
o-Xylene	ND	0.0017	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:28	MFF
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1,2-Dichloroethane-d4		106	70-130					5/11/20 9:28	
Toluene-d8		102	70-130					5/11/20 9:28	
4-Bromofluorobenzene		102	70-130					5/11/20 9:28	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-6

Sampled: 5/8/2020 09:45

Sample ID: 20E0343-07

Sample Matrix: Sludge

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Acenaphthylene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Benzo(a)anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Benzo(a)pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Benzo(b)fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Benzo(g,h,i)perylene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Benzo(k)fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Chrysene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Dibenz(a,h)anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Fluorene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Indeno(1,2,3-cd)pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
2-Methylnaphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Naphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Phenanthrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:03	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		61.8	30-130					5/14/20 16:03	
2-Fluorobiphenyl		62.6	30-130					5/14/20 16:03	
p-Terphenyl-d14		73.6	30-130					5/14/20 16:03	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-6

Sampled: 5/8/2020 09:45

Sample ID: 20E0343-07

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1221 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1232 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1242 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1248 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1254 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1260 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1262 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Aroclor-1268 [1]	ND	0.091	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:36	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		100	30-150					5/14/20 18:36	
Decachlorobiphenyl [2]		94.4	30-150					5/14/20 18:36	
Tetrachloro-m-xylene [1]		106	30-150					5/14/20 18:36	
Tetrachloro-m-xylene [2]		95.3	30-150					5/14/20 18:36	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-6

Sampled: 5/8/2020 09:45

Sample ID: 20E0343-07

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	5.9	3.8	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH
Barium	32	1.9	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH
Cadmium	ND	0.38	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH
Chromium	15	0.75	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH
Lead	6.1	0.56	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH
Mercury	ND	0.027	mg/Kg dry	1		SW-846 7471B	5/11/20	5/12/20 14:30	CJV
Selenium	ND	3.8	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH
Silver	ND	0.38	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:00	MJH

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-6

Sampled: 5/8/2020 09:45

Sample ID: 20E0343-07

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	88.1		% Wt	1		SM 2540G	5/11/20	5/11/20 12:31	CJT

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-7

Sampled: 5/8/2020 10:30

Sample ID: 20E0343-08

Sample Matrix: Sludge

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	0.076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Acrylonitrile	ND	0.0045	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
tert-Amyl Methyl Ether (TAME)	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Benzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Bromobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Bromochloromethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Bromodichloromethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Bromoform	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Bromomethane	ND	0.0076	mg/Kg dry	1	V-34	SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
2-Butanone (MEK)	ND	0.030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
tert-Butyl Alcohol (TBA)	ND	0.030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
n-Butylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
sec-Butylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
tert-Butylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
tert-Butyl Ethyl Ether (TBEE)	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Carbon Disulfide	ND	0.0045	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Carbon Tetrachloride	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Chlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Chlorodibromomethane	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Chloroethane	ND	0.015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Chloroform	ND	0.0030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Chloromethane	ND	0.0076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
2-Chlorotoluene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
4-Chlorotoluene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2-Dibromoethane (EDB)	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Dibromomethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2-Dichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,3-Dichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,4-Dichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
trans-1,4-Dichloro-2-butene	ND	0.0030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1-Dichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2-Dichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1-Dichloroethylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
cis-1,2-Dichloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
trans-1,2-Dichloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2-Dichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,3-Dichloropropane	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
2,2-Dichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1-Dichloropropene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
cis-1,3-Dichloropropene	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
trans-1,3-Dichloropropene	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Diethyl Ether	ND	0.015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-7

Sampled: 5/8/2020 10:30

Sample ID: 20E0343-08

Sample Matrix: Sludge

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Diisopropyl Ether (DIPE)	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,4-Dioxane	ND	0.076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Ethylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Hexachlorobutadiene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
2-Hexanone (MBK)	ND	0.015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Isopropylbenzene (Cumene)	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Methyl Acetate	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.0030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Methyl Cyclohexane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Methylene Chloride	ND	0.015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
4-Methyl-2-pentanone (MIBK)	ND	0.015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Naphthalene	ND	0.0030	mg/Kg dry	1	V-05	SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
n-Propylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Styrene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1,1,2-Tetrachloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1,2,2-Tetrachloroethane	ND	0.00076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Tetrachloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Tetrahydrofuran	ND	0.0076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Toluene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2,3-Trichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2,4-Trichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,3,5-Trichlorobenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1,1-Trichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1,2-Trichloroethane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Trichloroethylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Trichlorofluoromethane (Freon 11)	ND	0.0076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2,3-Trichloropropane	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.0076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,2,4-Trimethylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
1,3,5-Trimethylbenzene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Vinyl Chloride	ND	0.0076	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
m+p Xylene	ND	0.0030	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
o-Xylene	ND	0.0015	mg/Kg dry	1		SW-846 8260C-D	5/11/20	5/11/20 9:56	MFF
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
1,2-Dichloroethane-d4		105	70-130					5/11/20 9:56	
Toluene-d8		102	70-130					5/11/20 9:56	
4-Bromofluorobenzene		96.5	70-130					5/11/20 9:56	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-7

Sampled: 5/8/2020 10:30

Sample ID: 20E0343-08

Sample Matrix: Sludge

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Acenaphthylene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Benzo(a)anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Benzo(a)pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Benzo(b)fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Benzo(g,h,i)perylene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Benzo(k)fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Chrysene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Dibenz(a,h)anthracene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Fluoranthene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Fluorene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Indeno(1,2,3-cd)pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
2-Methylnaphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Naphthalene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Phenanthrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Pyrene	ND	0.19	mg/Kg dry	1		SW-846 8270D-E	5/11/20	5/14/20 16:29	IMR
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Nitrobenzene-d5		55.8	30-130					5/14/20 16:29	
2-Fluorobiphenyl		58.9	30-130					5/14/20 16:29	
p-Terphenyl-d14		69.9	30-130					5/14/20 16:29	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-7

Sampled: 5/8/2020 10:30

Sample ID: 20E0343-08

Sample Matrix: Sludge

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1221 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1232 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1242 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1248 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1254 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1260 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1262 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Aroclor-1268 [1]	ND	0.087	mg/Kg dry	4		SW-846 8082A	5/11/20	5/14/20 18:53	TG
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
Decachlorobiphenyl [1]		103	30-150					5/14/20 18:53	
Decachlorobiphenyl [2]		97.0	30-150					5/14/20 18:53	
Tetrachloro-m-xylene [1]		108	30-150					5/14/20 18:53	
Tetrachloro-m-xylene [2]		98.1	30-150					5/14/20 18:53	

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Project Location: 161 Wellington Street, Brattleboro

Sample Description:

Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-7

Sampled: 5/8/2020 10:30

Sample ID: 20E0343-08

Sample Matrix: Sludge

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Arsenic	6.5	3.6	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH
Barium	27	1.8	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH
Cadmium	ND	0.36	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH
Chromium	13	0.72	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH
Lead	5.1	0.54	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH
Mercury	ND	0.026	mg/Kg dry	1		SW-846 7471B	5/11/20	5/12/20 11:16	CJV
Selenium	ND	3.6	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH
Silver	ND	0.36	mg/Kg dry	1		SW-846 6010D	5/12/20	5/12/20 16:16	MJH

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Project Location: 161 Wellington Street, Brattleboro

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Work Order: 20E0343

Date Received: 5/8/2020

Field Sample #: LF-7

Sampled: 5/8/2020 10:30

Sample ID: 20E0343-08

Sample Matrix: Sludge

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
% Solids	91.8		% Wt	1		SM 2540G	5/11/20	5/11/20 12:31	CJT

Sample Extraction Data

Prep Method: % Solids Analytical Method: SM 2540G

Lab Number [Field ID]	Batch	Date
20E0343-01 [LF-1]	B257718	05/11/20
20E0343-02 [LF-2]	B257718	05/11/20
20E0343-03 [LF-3]	B257718	05/11/20
20E0343-04 [LF-4]	B257718	05/11/20
20E0343-05 [Duplicate]	B257718	05/11/20
20E0343-06 [LF-5]	B257718	05/11/20
20E0343-07 [LF-6]	B257718	05/11/20
20E0343-08 [LF-7]	B257718	05/11/20

SW-846 1030

Lab Number [Field ID]	Batch	Initial [g]	Date
20E0343-01 [LF-1]	B258035	50.0	05/14/20
20E0343-02 [LF-2]	B258035	50.0	05/14/20
20E0343-03 [LF-3]	B258035	50.0	05/14/20
20E0343-04 [LF-4]	B258035	50.0	05/14/20
20E0343-05 [Duplicate]	B258035	50.0	05/14/20

Prep Method: SW-846 3050B Analytical Method: SW-846 6010D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-06 [LF-5]	B257823	1.54	50.0	05/12/20
20E0343-07 [LF-6]	B257823	1.51	50.0	05/12/20
20E0343-08 [LF-7]	B257823	1.52	50.0	05/12/20

Prep Method: SW-846 3050B Analytical Method: SW-846 6010D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B258216	1.50	50.0	05/18/20
20E0343-02 [LF-2]	B258216	1.57	50.0	05/18/20
20E0343-03 [LF-3]	B258216	1.54	50.0	05/18/20
20E0343-04 [LF-4]	B258216	1.50	50.0	05/18/20
20E0343-05 [Duplicate]	B258216	1.52	50.0	05/18/20

Prep Method: SW-846 3010A Analytical Method: SW-846 6010D Samples were extracted on 5/11/2020 per SW-846 1311 in Batch B257716

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20E0343-01 [LF-1]	B257841	50.0	50.0	05/12/20
20E0343-02 [LF-2]	B257841	50.0	50.0	05/12/20
20E0343-03 [LF-3]	B257841	50.0	50.0	05/12/20
20E0343-04 [LF-4]	B257841	50.0	50.0	05/12/20
20E0343-05 [Duplicate]	B257841	50.0	50.0	05/12/20

Prep Method: SW-846 7470A Prep Analytical Method: SW-846 6010D Samples were extracted on 5/11/2020 per SW-846 1311 in Batch B257716

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20E0343-01 [LF-1]	B257838	6.00	6.00	05/12/20
20E0343-02 [LF-2]	B257838	6.00	6.00	05/12/20
20E0343-03 [LF-3]	B257838	6.00	6.00	05/12/20

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Sample Extraction Data

Prep Method: SW-846 7470A Prep Analytical Method: SW-846 7470A were extracted on 5/11/2020 per SW-846 1311 in Batch B257716

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20E0343-04 [LF-4]	B257838	6.00	6.00	05/12/20
20E0343-05 [Duplicate]	B257838	6.00	6.00	05/12/20

Prep Method: SW-846 7471 Analytical Method: SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-06 [LF-5]	B257720	0.591	50.0	05/11/20
20E0343-07 [LF-6]	B257720	0.633	50.0	05/11/20
20E0343-08 [LF-7]	B257720	0.628	50.0	05/11/20

Prep Method: SW-846 7471 Analytical Method: SW-846 7471B

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B258205	0.597	50.0	05/18/20
20E0343-02 [LF-2]	B258205	0.591	50.0	05/18/20
20E0343-03 [LF-3]	B258205	0.623	50.0	05/18/20
20E0343-04 [LF-4]	B258205	0.581	50.0	05/18/20
20E0343-05 [Duplicate]	B258205	0.624	50.0	05/18/20

Prep Method: SW-846 3540C Analytical Method: SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B257751	10.0	10.0	05/11/20
20E0343-02 [LF-2]	B257751	10.0	10.0	05/11/20
20E0343-03 [LF-3]	B257751	10.3	10.0	05/11/20
20E0343-04 [LF-4]	B257751	10.0	10.0	05/11/20
20E0343-05 [Duplicate]	B257751	10.0	10.0	05/11/20
20E0343-06 [LF-5]	B257751	10.0	10.0	05/11/20
20E0343-07 [LF-6]	B257751	10.0	10.0	05/11/20
20E0343-08 [LF-7]	B257751	10.0	10.0	05/11/20

Prep Method: SW-846 3546 Analytical Method: SW-846 8100 Modified

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B258014	30.4	1.00	05/14/20
20E0343-02 [LF-2]	B258014	30.0	1.00	05/14/20
20E0343-03 [LF-3]	B258014	30.5	2.00	05/14/20
20E0343-05 [Duplicate]	B258014	30.1	1.00	05/14/20

Prep Method: SW-846 3546 Analytical Method: SW-846 8100 Modified

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-04RE1 [LF-4]	B258243	15.7	1.00	05/18/20

Prep Method: SW-846 5035 Analytical Method: SW-846 8260C-D

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
20E0343-01 [LF-1]	B257753	4.63	6.60	1	50	05/11/20

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Sample Extraction Data

Prep Method: SW-846 5035 Analytical Method: SW-846 8260C-D

Lab Number [Field ID]	Batch	Sample Amount(g)	Methanol Volume(mL)	Methanol Aliquot(mL)	Final Volume(mL)	Date
20E0343-02 [LF-2]	B257753	4.23	6.47	1	50	05/11/20
20E0343-03 [LF-3]	B257753	4.94	6.98	1	50	05/11/20
20E0343-04 [LF-4]	B257753	4.95	7.20	1	50	05/11/20
20E0343-05 [Duplicate]	B257753	5.12	6.78	1	50	05/11/20

Prep Method: SW-846 5035 Analytical Method: SW-846 8260C-D

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-06 [LF-5]	B257772	6.32	10.0	05/11/20
20E0343-07 [LF-6]	B257772	6.52	10.0	05/11/20
20E0343-08 [LF-7]	B257772	7.20	10.0	05/11/20

Prep Method: SW-846 3546 Analytical Method: SW-846 8270D-E

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-06 [LF-5]	B257789	30.0	1.00	05/11/20
20E0343-07 [LF-6]	B257789	30.0	1.00	05/11/20
20E0343-08 [LF-7]	B257789	30.0	1.00	05/11/20

Prep Method: SW-846 3546 Analytical Method: SW-846 8270D-E

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B258013	30.4	1.00	05/14/20
20E0343-02 [LF-2]	B258013	30.0	1.00	05/14/20
20E0343-03 [LF-3]	B258013	30.5	2.00	05/14/20
20E0343-04 [LF-4]	B258013	30.0	1.00	05/14/20
20E0343-05 [Duplicate]	B258013	30.1	1.00	05/14/20

SW-846 9014

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B258130	25.2	250	05/15/20
20E0343-02 [LF-2]	B258130	25.4	250	05/15/20
20E0343-03 [LF-3]	B258130	25.4	250	05/15/20
20E0343-04 [LF-4]	B258130	25.1	250	05/15/20
20E0343-05 [Duplicate]	B258130	25.4	250	05/15/20

SW-846 9030A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
20E0343-01 [LF-1]	B258131	25.2	250	05/15/20
20E0343-02 [LF-2]	B258131	25.4	250	05/15/20
20E0343-03 [LF-3]	B258131	25.4	250	05/15/20
20E0343-04 [LF-4]	B258131	25.1	250	05/15/20
20E0343-05 [Duplicate]	B258131	25.4	250	05/15/20

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Sample Extraction Data

SW-846 9045C

Lab Number [Field ID]	Batch	Initial [g]	Date
20E0343-01 [LF-1]	B257696	20.0	05/08/20
20E0343-02 [LF-2]	B257696	20.0	05/08/20
20E0343-03 [LF-3]	B257696	20.0	05/08/20
20E0343-04 [LF-4]	B257696	20.0	05/08/20
20E0343-05 [Duplicate]	B257696	20.0	05/08/20

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257753 - SW-846 5035

Blank (B257753-BLK1)

Prepared & Analyzed: 05/11/20

Acetone	ND	2.5	mg/Kg wet							
Acrylonitrile	ND	0.25	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.025	mg/Kg wet							
Benzene	ND	0.050	mg/Kg wet							
Bromobenzene	ND	0.050	mg/Kg wet							
Bromochloromethane	ND	0.050	mg/Kg wet							
Bromodichloromethane	ND	0.050	mg/Kg wet							
Bromoform	ND	0.050	mg/Kg wet							V-05
Bromomethane	ND	0.10	mg/Kg wet							
2-Butanone (MEK)	ND	1.0	mg/Kg wet							
tert-Butyl Alcohol (TBA)	ND	1.0	mg/Kg wet							V-05
n-Butylbenzene	ND	0.050	mg/Kg wet							
sec-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butylbenzene	ND	0.050	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.025	mg/Kg wet							
Carbon Disulfide	ND	0.25	mg/Kg wet							
Carbon Tetrachloride	ND	0.050	mg/Kg wet							
Chlorobenzene	ND	0.050	mg/Kg wet							
Chlorodibromomethane	ND	0.025	mg/Kg wet							
Chloroethane	ND	0.10	mg/Kg wet							
Chloroform	ND	0.10	mg/Kg wet							
Chloromethane	ND	0.10	mg/Kg wet							
2-Chlorotoluene	ND	0.050	mg/Kg wet							
4-Chlorotoluene	ND	0.050	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.25	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.025	mg/Kg wet							
Dibromomethane	ND	0.050	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.050	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.050	mg/Kg wet							
trans-1,4-Dichloro-2-butene	ND	0.10	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.10	mg/Kg wet							V-05
1,1-Dichloroethane	ND	0.050	mg/Kg wet							
1,2-Dichloroethane	ND	0.050	mg/Kg wet							
1,1-Dichloroethylene	ND	0.050	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.050	mg/Kg wet							
Dichlorofluoromethane (Freon 21)	ND	0.050	mg/Kg wet							
1,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,3-Dichloropropane	ND	0.025	mg/Kg wet							
2,2-Dichloropropane	ND	0.050	mg/Kg wet							
1,1-Dichloropropene	ND	0.10	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.025	mg/Kg wet							
Diethyl Ether	ND	0.10	mg/Kg wet							
Difluorochloromethane (Freon 22)	ND	0.050	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.025	mg/Kg wet							
1,4-Dioxane	ND	2.5	mg/Kg wet							
Ethylbenzene	ND	0.050	mg/Kg wet							
Hexachlorobutadiene	ND	0.050	mg/Kg wet							
2-Hexanone (MBK)	ND	0.50	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.050	mg/Kg wet							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257753 - SW-846 5035

Blank (B257753-BLK1)

Prepared & Analyzed: 05/11/20

p-Isopropyltoluene (p-Cymene)	ND	0.050	mg/Kg wet							
Methyl Acetate	ND	0.50	mg/Kg wet							
Methyl tert-Butyl Ether (MTBE)	ND	0.050	mg/Kg wet							
Methyl Cyclohexane	ND	0.050	mg/Kg wet							
Methylene Chloride	ND	0.25	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.50	mg/Kg wet							
Naphthalene	ND	0.10	mg/Kg wet							
n-Propylbenzene	ND	0.050	mg/Kg wet							
Styrene	ND	0.050	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.050	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.025	mg/Kg wet							
Tetrachloroethylene	ND	0.050	mg/Kg wet							
Tetrahydrofuran	ND	0.50	mg/Kg wet							
Toluene	ND	0.050	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.25	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.050	mg/Kg wet							
1,3,5-Trichlorobenzene	ND	0.050	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.050	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.050	mg/Kg wet							
Trichloroethylene	ND	0.050	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.10	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.10	mg/Kg wet							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.050	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.050	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.050	mg/Kg wet							
Vinyl Chloride	ND	0.10	mg/Kg wet							
m+p Xylene	ND	0.10	mg/Kg wet							
o-Xylene	ND	0.050	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0272		mg/Kg wet	0.0250		109	70-130			
Surrogate: Toluene-d8	0.0242		mg/Kg wet	0.0250		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.0260		mg/Kg wet	0.0250		104	70-130			

LCS (B257753-BS1)

Prepared & Analyzed: 05/11/20

Acetone	0.227	0.057	mg/Kg wet	0.227		100	70-160			†
Acrylonitrile	0.0266	0.0057	mg/Kg wet	0.0227		117	70-130			
tert-Amyl Methyl Ether (TAME)	0.0186	0.00057	mg/Kg wet	0.0227		81.9	70-130			
Benzene	0.0253	0.0011	mg/Kg wet	0.0227		112	70-130			
Bromobenzene	0.0227	0.0011	mg/Kg wet	0.0227		100	70-130			
Bromochloromethane	0.0245	0.0011	mg/Kg wet	0.0227		108	70-130			
Bromodichloromethane	0.0201	0.0011	mg/Kg wet	0.0227		88.8	70-130			
Bromoform	0.0188	0.0011	mg/Kg wet	0.0227		82.8	70-130			V-05
Bromomethane	0.0198	0.0023	mg/Kg wet	0.0227		87.3	40-130			V-20 †
2-Butanone (MEK)	0.258	0.023	mg/Kg wet	0.227		114	70-160			†
tert-Butyl Alcohol (TBA)	0.179	0.023	mg/Kg wet	0.227		78.9	40-130			V-05 †
n-Butylbenzene	0.0284	0.0011	mg/Kg wet	0.0227		125	70-130			
sec-Butylbenzene	0.0278	0.0011	mg/Kg wet	0.0227		123	70-130			
tert-Butylbenzene	0.0267	0.0011	mg/Kg wet	0.0227		118	70-160			†
tert-Butyl Ethyl Ether (TBEE)	0.0216	0.00057	mg/Kg wet	0.0227		95.3	70-130			
Carbon Disulfide	0.0224	0.0057	mg/Kg wet	0.0227		98.7	70-130			
Carbon Tetrachloride	0.0209	0.0011	mg/Kg wet	0.0227		92.0	70-130			
Chlorobenzene	0.0219	0.0011	mg/Kg wet	0.0227		96.7	70-130			
Chlorodibromomethane	0.0186	0.00057	mg/Kg wet	0.0227		81.8	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch B257753 - SW-846 5035									
LCS (B257753-BS1)									
					Prepared & Analyzed: 05/11/20				
Chloroethane	0.0204	0.0023	mg/Kg wet	0.0227		90.1	70-130		
Chloroform	0.0247	0.0023	mg/Kg wet	0.0227		109	70-130		
Chloromethane	0.0182	0.0023	mg/Kg wet	0.0227		80.1	70-130		
2-Chlorotoluene	0.0243	0.0011	mg/Kg wet	0.0227		107	70-130		
4-Chlorotoluene	0.0250	0.0011	mg/Kg wet	0.0227		110	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	0.0212	0.0057	mg/Kg wet	0.0227		93.3	70-130		
1,2-Dibromoethane (EDB)	0.0215	0.00057	mg/Kg wet	0.0227		95.0	70-130		
Dibromomethane	0.0208	0.0011	mg/Kg wet	0.0227		91.9	70-130		
1,2-Dichlorobenzene	0.0226	0.0011	mg/Kg wet	0.0227		99.8	70-130		
1,3-Dichlorobenzene	0.0239	0.0011	mg/Kg wet	0.0227		105	70-130		
1,4-Dichlorobenzene	0.0221	0.0011	mg/Kg wet	0.0227		97.4	70-130		
trans-1,4-Dichloro-2-butene	0.0228	0.0023	mg/Kg wet	0.0227		101	70-130		
Dichlorodifluoromethane (Freon 12)	0.0161	0.0023	mg/Kg wet	0.0227		70.8	40-160		V-05 †
1,1-Dichloroethane	0.0259	0.0011	mg/Kg wet	0.0227		114	70-130		
1,2-Dichloroethane	0.0198	0.0011	mg/Kg wet	0.0227		87.5	70-130		
1,1-Dichloroethylene	0.0243	0.0011	mg/Kg wet	0.0227		107	70-130		
cis-1,2-Dichloroethylene	0.0267	0.0011	mg/Kg wet	0.0227		118	70-130		
trans-1,2-Dichloroethylene	0.0251	0.0011	mg/Kg wet	0.0227		111	70-130		
Dichlorofluoromethane (Freon 21)	0.0226	0.0011	mg/Kg wet	0.0227		99.7	70-130		
1,2-Dichloropropane	0.0213	0.0011	mg/Kg wet	0.0227		94.1	70-130		
1,3-Dichloropropane	0.0217	0.00057	mg/Kg wet	0.0227		95.8	70-130		
2,2-Dichloropropane	0.0210	0.0011	mg/Kg wet	0.0227		92.7	70-130		
1,1-Dichloropropene	0.0232	0.0023	mg/Kg wet	0.0227		103	70-130		
cis-1,3-Dichloropropene	0.0215	0.00057	mg/Kg wet	0.0227		95.0	70-130		
trans-1,3-Dichloropropene	0.0211	0.00057	mg/Kg wet	0.0227		93.0	70-130		
Diethyl Ether	0.0241	0.0023	mg/Kg wet	0.0227		106	70-130		
Difluorochloromethane (Freon 22)	0.0220	0.0011	mg/Kg wet	0.0227		97.2	70-130		
Diisopropyl Ether (DIPE)	0.0242	0.00057	mg/Kg wet	0.0227		107	70-130		
1,4-Dioxane	0.272	0.057	mg/Kg wet	0.227		120	40-160		†
Ethylbenzene	0.0245	0.0011	mg/Kg wet	0.0227		108	70-130		
Hexachlorobutadiene	0.0200	0.0011	mg/Kg wet	0.0227		88.1	70-160		
2-Hexanone (MBK)	0.222	0.011	mg/Kg wet	0.227		97.8	70-160		†
Isopropylbenzene (Cumene)	0.0228	0.0011	mg/Kg wet	0.0227		101	70-130		
p-Isopropyltoluene (p-Cymene)	0.0240	0.0011	mg/Kg wet	0.0227		106	70-130		
Methyl Acetate	0.0405	0.011	mg/Kg wet	0.0227		179 *	70-130		L-02, V-20
Methyl tert-Butyl Ether (MTBE)	0.0208	0.0011	mg/Kg wet	0.0227		91.8	70-130		
Methyl Cyclohexane	0.0256	0.0011	mg/Kg wet	0.0227		113	70-130		
Methylene Chloride	0.0257	0.0057	mg/Kg wet	0.0227		113	40-160		†
4-Methyl-2-pentanone (MIBK)	0.228	0.011	mg/Kg wet	0.227		100	70-160		†
Naphthalene	0.0227	0.0023	mg/Kg wet	0.0227		99.9	40-130		†
n-Propylbenzene	0.0234	0.0011	mg/Kg wet	0.0227		103	70-130		
Styrene	0.0227	0.0011	mg/Kg wet	0.0227		100	70-130		
1,1,1,2-Tetrachloroethane	0.0184	0.0011	mg/Kg wet	0.0227		81.2	70-130		
1,1,2,2-Tetrachloroethane	0.0200	0.00057	mg/Kg wet	0.0227		88.2	70-130		
Tetrachloroethylene	0.0218	0.0011	mg/Kg wet	0.0227		96.3	70-130		
Tetrahydrofuran	0.0234	0.011	mg/Kg wet	0.0227		103	70-130		
Toluene	0.0227	0.0011	mg/Kg wet	0.0227		100	70-130		
1,2,3-Trichlorobenzene	0.0226	0.0057	mg/Kg wet	0.0227		99.5	70-130		
1,2,4-Trichlorobenzene	0.0247	0.0011	mg/Kg wet	0.0227		109	70-130		
1,3,5-Trichlorobenzene	0.0222	0.0011	mg/Kg wet	0.0227		98.0	70-130		
1,1,1-Trichloroethane	0.0226	0.0011	mg/Kg wet	0.0227		99.6	70-130		
1,1,2-Trichloroethane	0.0208	0.0011	mg/Kg wet	0.0227		91.9	70-130		

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257753 - SW-846 5035										
LCS (B257753-BS1)										
Prepared & Analyzed: 05/11/20										
Trichloroethylene	0.0213	0.0011	mg/Kg wet	0.0227		94.1	70-130			
Trichlorofluoromethane (Freon 11)	0.0178	0.0023	mg/Kg wet	0.0227		78.7	70-130			
1,2,3-Trichloropropane	0.0213	0.0023	mg/Kg wet	0.0227		93.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0247	0.0011	mg/Kg wet	0.0227		109	70-130			
1,2,4-Trimethylbenzene	0.0248	0.0011	mg/Kg wet	0.0227		109	70-130			
1,3,5-Trimethylbenzene	0.0225	0.0011	mg/Kg wet	0.0227		99.1	70-130			
Vinyl Chloride	0.0179	0.0023	mg/Kg wet	0.0227		79.0	40-130			†
m+p Xylene	0.0501	0.0023	mg/Kg wet	0.0453		111	70-130			
o-Xylene	0.0253	0.0011	mg/Kg wet	0.0227		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0294		mg/Kg wet	0.0283		104	70-130			
Surrogate: Toluene-d8	0.0283		mg/Kg wet	0.0283		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.0307		mg/Kg wet	0.0283		108	70-130			
LCS Dup (B257753-BSD1)										
Prepared & Analyzed: 05/11/20										
Acetone	0.224	0.057	mg/Kg wet	0.227		98.6	70-160	1.58	25	†
Acrylonitrile	0.0243	0.0057	mg/Kg wet	0.0227		107	70-130	8.90	25	
tert-Amyl Methyl Ether (TAME)	0.0182	0.00057	mg/Kg wet	0.0227		80.3	70-130	1.97	25	
Benzene	0.0251	0.0011	mg/Kg wet	0.0227		111	70-130	0.944	25	
Bromobenzene	0.0228	0.0011	mg/Kg wet	0.0227		101	70-130	0.398	25	
Bromochloromethane	0.0242	0.0011	mg/Kg wet	0.0227		107	70-130	1.07	25	
Bromodichloromethane	0.0199	0.0011	mg/Kg wet	0.0227		87.7	70-130	1.25	25	
Bromoform	0.0187	0.0011	mg/Kg wet	0.0227		82.4	70-130	0.363	25	V-05
Bromomethane	0.0211	0.0023	mg/Kg wet	0.0227		93.0	40-130	6.27	25	V-20
2-Butanone (MEK)	0.254	0.023	mg/Kg wet	0.227		112	70-160	1.49	25	†
tert-Butyl Alcohol (TBA)	0.170	0.023	mg/Kg wet	0.227		74.8	40-130	5.32	25	V-05
n-Butylbenzene	0.0286	0.0011	mg/Kg wet	0.0227		126	70-130	0.756	25	
sec-Butylbenzene	0.0276	0.0011	mg/Kg wet	0.0227		122	70-130	0.613	25	
tert-Butylbenzene	0.0268	0.0011	mg/Kg wet	0.0227		118	70-160	0.636	25	†
tert-Butyl Ethyl Ether (TBEE)	0.0217	0.00057	mg/Kg wet	0.0227		95.5	70-130	0.262	25	
Carbon Disulfide	0.0215	0.0057	mg/Kg wet	0.0227		94.6	70-130	4.19	25	
Carbon Tetrachloride	0.0207	0.0011	mg/Kg wet	0.0227		91.2	70-130	0.873	25	
Chlorobenzene	0.0219	0.0011	mg/Kg wet	0.0227		96.4	70-130	0.259	25	
Chlorodibromomethane	0.0186	0.00057	mg/Kg wet	0.0227		82.2	70-130	0.366	25	
Chloroethane	0.0200	0.0023	mg/Kg wet	0.0227		88.3	70-130	2.02	25	
Chloroform	0.0244	0.0023	mg/Kg wet	0.0227		108	70-130	1.11	25	
Chloromethane	0.0176	0.0023	mg/Kg wet	0.0227		77.5	70-130	3.30	25	
2-Chlorotoluene	0.0243	0.0011	mg/Kg wet	0.0227		107	70-130	0.00	25	
4-Chlorotoluene	0.0247	0.0011	mg/Kg wet	0.0227		109	70-130	1.41	25	
1,2-Dibromo-3-chloropropane (DBCP)	0.0203	0.0057	mg/Kg wet	0.0227		89.6	70-130	4.10	25	
1,2-Dibromoethane (EDB)	0.0216	0.00057	mg/Kg wet	0.0227		95.1	70-130	0.105	25	
Dibromomethane	0.0205	0.0011	mg/Kg wet	0.0227		90.6	70-130	1.37	25	
1,2-Dichlorobenzene	0.0228	0.0011	mg/Kg wet	0.0227		100	70-130	0.549	25	
1,3-Dichlorobenzene	0.0239	0.0011	mg/Kg wet	0.0227		106	70-130	0.237	25	
1,4-Dichlorobenzene	0.0221	0.0011	mg/Kg wet	0.0227		97.4	70-130	0.00	25	
trans-1,4-Dichloro-2-butene	0.0231	0.0023	mg/Kg wet	0.0227		102	70-130	0.889	25	
Dichlorodifluoromethane (Freon 12)	0.0154	0.0023	mg/Kg wet	0.0227		68.0	40-160	4.03	25	V-05
1,1-Dichloroethane	0.0259	0.0011	mg/Kg wet	0.0227		114	70-130	0.175	25	
1,2-Dichloroethane	0.0198	0.0011	mg/Kg wet	0.0227		87.3	70-130	0.229	25	
1,1-Dichloroethylene	0.0238	0.0011	mg/Kg wet	0.0227		105	70-130	2.26	25	
cis-1,2-Dichloroethylene	0.0267	0.0011	mg/Kg wet	0.0227		118	70-130	0.297	25	
trans-1,2-Dichloroethylene	0.0237	0.0011	mg/Kg wet	0.0227		105	70-130	5.58	25	
Dichlorofluoromethane (Freon 21)	0.0222	0.0011	mg/Kg wet	0.0227		97.9	70-130	1.87	25	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257753 - SW-846 5035										
LCS Dup (B257753-BSD1)										
Prepared & Analyzed: 05/11/20										
1,2-Dichloropropane	0.0216	0.0011	mg/Kg wet	0.0227		95.3	70-130	1.27	25	
1,3-Dichloropropane	0.0217	0.00057	mg/Kg wet	0.0227		95.6	70-130	0.261	25	
2,2-Dichloropropane	0.0206	0.0011	mg/Kg wet	0.0227		90.7	70-130	2.18	25	
1,1-Dichloropropene	0.0232	0.0023	mg/Kg wet	0.0227		102	70-130	0.293	25	
cis-1,3-Dichloropropene	0.0212	0.00057	mg/Kg wet	0.0227		93.6	70-130	1.48	25	
trans-1,3-Dichloropropene	0.0214	0.00057	mg/Kg wet	0.0227		94.5	70-130	1.65	25	
Diethyl Ether	0.0236	0.0023	mg/Kg wet	0.0227		104	70-130	2.33	25	
Difluorochloromethane (Freon 22)	0.0214	0.0011	mg/Kg wet	0.0227		94.3	70-130	3.08	25	
Diisopropyl Ether (DIPE)	0.0243	0.00057	mg/Kg wet	0.0227		107	70-130	0.420	25	
1,4-Dioxane	0.239	0.057	mg/Kg wet	0.227		106	40-160	12.9	50	† ‡
Ethylbenzene	0.0243	0.0011	mg/Kg wet	0.0227		107	70-130	0.558	25	
Hexachlorobutadiene	0.0206	0.0011	mg/Kg wet	0.0227		90.9	70-160	3.13	25	
2-Hexanone (MBK)	0.219	0.011	mg/Kg wet	0.227		96.5	70-160	1.38	25	†
Isopropylbenzene (Cumene)	0.0230	0.0011	mg/Kg wet	0.0227		102	70-130	0.890	25	
p-Isopropyltoluene (p-Cymene)	0.0241	0.0011	mg/Kg wet	0.0227		106	70-130	0.519	25	
Methyl Acetate	0.0383	0.011	mg/Kg wet	0.0227		169 *	70-130	5.52	25	L-02, V-20
Methyl tert-Butyl Ether (MTBE)	0.0189	0.0011	mg/Kg wet	0.0227		83.4	70-130	9.64	25	
Methyl Cyclohexane	0.0256	0.0011	mg/Kg wet	0.0227		113	70-130	0.0886	25	
Methylene Chloride	0.0251	0.0057	mg/Kg wet	0.0227		111	40-160	2.41	25	†
4-Methyl-2-pentanone (MIBK)	0.224	0.011	mg/Kg wet	0.227		98.7	70-160	1.69	25	†
Naphthalene	0.0232	0.0023	mg/Kg wet	0.0227		102	40-130	2.37	25	†
n-Propylbenzene	0.0229	0.0011	mg/Kg wet	0.0227		101	70-130	2.01	25	
Styrene	0.0225	0.0011	mg/Kg wet	0.0227		99.1	70-130	1.15	25	
1,1,1,2-Tetrachloroethane	0.0186	0.0011	mg/Kg wet	0.0227		82.2	70-130	1.10	25	
1,1,2,2-Tetrachloroethane	0.0197	0.00057	mg/Kg wet	0.0227		87.0	70-130	1.37	25	
Tetrachloroethylene	0.0216	0.0011	mg/Kg wet	0.0227		95.5	70-130	0.886	25	
Tetrahydrofuran	0.0259	0.011	mg/Kg wet	0.0227		114	70-130	10.3	25	
Toluene	0.0227	0.0011	mg/Kg wet	0.0227		100	70-130	0.300	25	
1,2,3-Trichlorobenzene	0.0228	0.0057	mg/Kg wet	0.0227		100	70-130	1.00	25	
1,2,4-Trichlorobenzene	0.0251	0.0011	mg/Kg wet	0.0227		111	70-130	1.77	25	
1,3,5-Trichlorobenzene	0.0226	0.0011	mg/Kg wet	0.0227		99.6	70-130	1.52	25	
1,1,1-Trichloroethane	0.0219	0.0011	mg/Kg wet	0.0227		96.7	70-130	2.95	25	
1,1,2-Trichloroethane	0.0210	0.0011	mg/Kg wet	0.0227		92.6	70-130	0.704	25	
Trichloroethylene	0.0216	0.0011	mg/Kg wet	0.0227		95.1	70-130	1.11	25	
Trichlorofluoromethane (Freon 11)	0.0175	0.0023	mg/Kg wet	0.0227		77.2	70-130	1.86	25	
1,2,3-Trichloropropane	0.0212	0.0023	mg/Kg wet	0.0227		93.5	70-130	0.480	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0243	0.0011	mg/Kg wet	0.0227		107	70-130	1.57	25	
1,2,4-Trimethylbenzene	0.0250	0.0011	mg/Kg wet	0.0227		110	70-130	0.910	25	
1,3,5-Trimethylbenzene	0.0223	0.0011	mg/Kg wet	0.0227		98.4	70-130	0.810	25	
Vinyl Chloride	0.0172	0.0023	mg/Kg wet	0.0227		75.9	40-130	4.00	25	†
m+p Xylene	0.0497	0.0023	mg/Kg wet	0.0453		110	70-130	0.886	25	
o-Xylene	0.0252	0.0011	mg/Kg wet	0.0227		111	70-130	0.449	25	
Surrogate: 1,2-Dichloroethane-d4	0.0297		mg/Kg wet	0.0283		105	70-130			
Surrogate: Toluene-d8	0.0281		mg/Kg wet	0.0283		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.0305		mg/Kg wet	0.0283		108	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257772 - SW-846 5035

Blank (B257772-BLK1)

Prepared & Analyzed: 05/11/20

Acetone	ND	0.10	mg/Kg wet							
Acrylonitrile	ND	0.0060	mg/Kg wet							
tert-Amyl Methyl Ether (TAME)	ND	0.0010	mg/Kg wet							
Benzene	ND	0.0020	mg/Kg wet							
Bromobenzene	ND	0.0020	mg/Kg wet							
Bromochloromethane	ND	0.0020	mg/Kg wet							
Bromodichloromethane	ND	0.0020	mg/Kg wet							
Bromoform	ND	0.0020	mg/Kg wet							
Bromomethane	ND	0.010	mg/Kg wet							V-34
2-Butanone (MEK)	ND	0.040	mg/Kg wet							
tert-Butyl Alcohol (TBA)	ND	0.040	mg/Kg wet							
n-Butylbenzene	ND	0.0020	mg/Kg wet							
sec-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butylbenzene	ND	0.0020	mg/Kg wet							
tert-Butyl Ethyl Ether (TBEE)	ND	0.0010	mg/Kg wet							
Carbon Disulfide	ND	0.0060	mg/Kg wet							
Carbon Tetrachloride	ND	0.0020	mg/Kg wet							
Chlorobenzene	ND	0.0020	mg/Kg wet							
Chlorodibromomethane	ND	0.0010	mg/Kg wet							
Chloroethane	ND	0.020	mg/Kg wet							
Chloroform	ND	0.0040	mg/Kg wet							
Chloromethane	ND	0.010	mg/Kg wet							
2-Chlorotoluene	ND	0.0020	mg/Kg wet							
4-Chlorotoluene	ND	0.0020	mg/Kg wet							
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.0020	mg/Kg wet							
1,2-Dibromoethane (EDB)	ND	0.0010	mg/Kg wet							
Dibromomethane	ND	0.0020	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,3-Dichlorobenzene	ND	0.0020	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.0020	mg/Kg wet							
trans-1,4-Dichloro-2-butene	ND	0.0040	mg/Kg wet							
Dichlorodifluoromethane (Freon 12)	ND	0.020	mg/Kg wet							
1,1-Dichloroethane	ND	0.0020	mg/Kg wet							
1,2-Dichloroethane	ND	0.0020	mg/Kg wet							
1,1-Dichloroethylene	ND	0.0040	mg/Kg wet							
cis-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
trans-1,2-Dichloroethylene	ND	0.0020	mg/Kg wet							
1,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,3-Dichloropropane	ND	0.0010	mg/Kg wet							
2,2-Dichloropropane	ND	0.0020	mg/Kg wet							
1,1-Dichloropropene	ND	0.0020	mg/Kg wet							
cis-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
trans-1,3-Dichloropropene	ND	0.0010	mg/Kg wet							
Diethyl Ether	ND	0.020	mg/Kg wet							
Diisopropyl Ether (DIPE)	ND	0.0010	mg/Kg wet							
1,4-Dioxane	ND	0.10	mg/Kg wet							
Ethylbenzene	ND	0.0020	mg/Kg wet							
Hexachlorobutadiene	ND	0.0020	mg/Kg wet							
2-Hexanone (MBK)	ND	0.020	mg/Kg wet							
Isopropylbenzene (Cumene)	ND	0.0020	mg/Kg wet							
p-Isopropyltoluene (p-Cymene)	ND	0.0020	mg/Kg wet							
Methyl Acetate	ND	0.0020	mg/Kg wet							

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257772 - SW-846 5035

Blank (B257772-BLK1)

Prepared & Analyzed: 05/11/20

Methyl tert-Butyl Ether (MTBE)	ND	0.0040	mg/Kg wet							
Methyl Cyclohexane	ND	0.0020	mg/Kg wet							
Methylene Chloride	ND	0.020	mg/Kg wet							
4-Methyl-2-pentanone (MIBK)	ND	0.020	mg/Kg wet							
Naphthalene	ND	0.0040	mg/Kg wet							V-05
n-Propylbenzene	ND	0.0020	mg/Kg wet							
Styrene	ND	0.0020	mg/Kg wet							
1,1,1,2-Tetrachloroethane	ND	0.0020	mg/Kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0010	mg/Kg wet							
Tetrachloroethylene	ND	0.0020	mg/Kg wet							
Tetrahydrofuran	ND	0.010	mg/Kg wet							
Toluene	ND	0.0020	mg/Kg wet							
1,2,3-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trichlorobenzene	ND	0.0020	mg/Kg wet							
1,1,1-Trichloroethane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloroethane	ND	0.0020	mg/Kg wet							
Trichloroethylene	ND	0.0020	mg/Kg wet							
Trichlorofluoromethane (Freon 11)	ND	0.010	mg/Kg wet							
1,2,3-Trichloropropane	ND	0.0020	mg/Kg wet							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	0.010	mg/Kg wet							
1,2,4-Trimethylbenzene	ND	0.0020	mg/Kg wet							
1,3,5-Trimethylbenzene	ND	0.0020	mg/Kg wet							
Vinyl Chloride	ND	0.010	mg/Kg wet							
m+p Xylene	ND	0.0040	mg/Kg wet							
o-Xylene	ND	0.0020	mg/Kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0492		mg/Kg wet	0.0500		98.3	70-130			
Surrogate: Toluene-d8	0.0498		mg/Kg wet	0.0500		99.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.0490		mg/Kg wet	0.0500		98.0	70-130			

LCS (B257772-BS1)

Prepared & Analyzed: 05/11/20

Acetone	0.210	0.10	mg/Kg wet	0.200		105	70-160			†
Acrylonitrile	0.0192	0.0060	mg/Kg wet	0.0200		96.1	70-130			
tert-Amyl Methyl Ether (TAME)	0.0196	0.0010	mg/Kg wet	0.0200		97.9	70-130			
Benzene	0.0177	0.0020	mg/Kg wet	0.0200		88.5	70-130			
Bromobenzene	0.0190	0.0020	mg/Kg wet	0.0200		95.1	70-130			
Bromochloromethane	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130			
Bromodichloromethane	0.0183	0.0020	mg/Kg wet	0.0200		91.4	70-130			
Bromoform	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130			
Bromomethane	0.0175	0.010	mg/Kg wet	0.0200		87.5	40-130			V-34 †
2-Butanone (MEK)	0.213	0.040	mg/Kg wet	0.200		107	70-160			†
tert-Butyl Alcohol (TBA)	0.224	0.040	mg/Kg wet	0.200		112	40-130			†
n-Butylbenzene	0.0176	0.0020	mg/Kg wet	0.0200		88.0	70-130			
sec-Butylbenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.3	70-130			
tert-Butylbenzene	0.0198	0.0020	mg/Kg wet	0.0200		98.9	70-160			†
tert-Butyl Ethyl Ether (TBEE)	0.0195	0.0010	mg/Kg wet	0.0200		97.3	70-130			
Carbon Disulfide	0.165	0.0060	mg/Kg wet	0.200		82.3	70-130			
Carbon Tetrachloride	0.0193	0.0020	mg/Kg wet	0.0200		96.7	70-130			
Chlorobenzene	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130			
Chlorodibromomethane	0.0196	0.0010	mg/Kg wet	0.0200		97.9	70-130			
Chloroethane	0.0190	0.020	mg/Kg wet	0.0200		94.9	70-130			
Chloroform	0.0176	0.0040	mg/Kg wet	0.0200		88.2	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257772 - SW-846 5035										
LCS (B257772-BS1)										
Prepared & Analyzed: 05/11/20										
Chloromethane	0.0167	0.010	mg/Kg wet	0.0200		83.7	70-130			
2-Chlorotoluene	0.0192	0.0020	mg/Kg wet	0.0200		96.1	70-130			
4-Chlorotoluene	0.0189	0.0020	mg/Kg wet	0.0200		94.3	70-130			
1,2-Dibromo-3-chloropropane (DBCP)	0.0212	0.0020	mg/Kg wet	0.0200		106	70-130			
1,2-Dibromoethane (EDB)	0.0196	0.0010	mg/Kg wet	0.0200		97.8	70-130			
Dibromomethane	0.0199	0.0020	mg/Kg wet	0.0200		99.3	70-130			
1,2-Dichlorobenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.3	70-130			
1,3-Dichlorobenzene	0.0203	0.0020	mg/Kg wet	0.0200		102	70-130			
1,4-Dichlorobenzene	0.0195	0.0020	mg/Kg wet	0.0200		97.5	70-130			
trans-1,4-Dichloro-2-butene	0.0212	0.0040	mg/Kg wet	0.0200		106	70-130			
Dichlorodifluoromethane (Freon 12)	0.0171	0.020	mg/Kg wet	0.0200		85.3	40-160			†
1,1-Dichloroethane	0.0188	0.0020	mg/Kg wet	0.0200		94.1	70-130			
1,2-Dichloroethane	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130			
1,1-Dichloroethylene	0.0164	0.0040	mg/Kg wet	0.0200		82.1	70-130			
cis-1,2-Dichloroethylene	0.0179	0.0020	mg/Kg wet	0.0200		89.6	70-130			
trans-1,2-Dichloroethylene	0.0183	0.0020	mg/Kg wet	0.0200		91.7	70-130			
1,2-Dichloropropane	0.0195	0.0020	mg/Kg wet	0.0200		97.7	70-130			
1,3-Dichloropropane	0.0200	0.0010	mg/Kg wet	0.0200		100	70-130			
2,2-Dichloropropane	0.0169	0.0020	mg/Kg wet	0.0200		84.5	70-130			
1,1-Dichloropropene	0.0175	0.0020	mg/Kg wet	0.0200		87.5	70-130			
cis-1,3-Dichloropropene	0.0197	0.0010	mg/Kg wet	0.0200		98.3	70-130			
trans-1,3-Dichloropropene	0.0197	0.0010	mg/Kg wet	0.0200		98.5	70-130			
Diethyl Ether	0.0165	0.020	mg/Kg wet	0.0200		82.6	70-130			
Diisopropyl Ether (DIPE)	0.0194	0.0010	mg/Kg wet	0.0200		97.2	70-130			
1,4-Dioxane	0.195	0.10	mg/Kg wet	0.200		97.4	40-160			†
Ethylbenzene	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130			
Hexachlorobutadiene	0.0218	0.0020	mg/Kg wet	0.0200		109	70-160			†
2-Hexanone (MBK)	0.205	0.020	mg/Kg wet	0.200		102	70-160			†
Isopropylbenzene (Cumene)	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130			
p-Isopropyltoluene (p-Cymene)	0.0195	0.0020	mg/Kg wet	0.0200		97.3	70-130			
Methyl Acetate	0.0232	0.0020	mg/Kg wet	0.0200		116	70-130			
Methyl tert-Butyl Ether (MTBE)	0.0189	0.0040	mg/Kg wet	0.0200		94.7	70-130			
Methyl Cyclohexane	0.0187	0.0020	mg/Kg wet	0.0200		93.4	70-130			
Methylene Chloride	0.0210	0.020	mg/Kg wet	0.0200		105	40-160			†
4-Methyl-2-pentanone (MIBK)	0.201	0.020	mg/Kg wet	0.200		100	70-160			†
Naphthalene	0.0167	0.0040	mg/Kg wet	0.0200		83.6	40-130			V-05 †
n-Propylbenzene	0.0187	0.0020	mg/Kg wet	0.0200		93.5	70-130			
Styrene	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130			
1,1,1,2-Tetrachloroethane	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130			
1,1,2,2-Tetrachloroethane	0.0196	0.0010	mg/Kg wet	0.0200		97.9	70-130			
Tetrachloroethylene	0.0211	0.0020	mg/Kg wet	0.0200		105	70-130			
Tetrahydrofuran	0.0204	0.010	mg/Kg wet	0.0200		102	70-130			
Toluene	0.0184	0.0020	mg/Kg wet	0.0200		91.9	70-130			
1,2,3-Trichlorobenzene	0.0193	0.0020	mg/Kg wet	0.0200		96.5	70-130			
1,2,4-Trichlorobenzene	0.0194	0.0020	mg/Kg wet	0.0200		97.2	70-130			
1,3,5-Trichlorobenzene	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130			
1,1,1-Trichloroethane	0.0172	0.0020	mg/Kg wet	0.0200		85.9	70-130			
1,1,2-Trichloroethane	0.0181	0.0020	mg/Kg wet	0.0200		90.3	70-130			
Trichloroethylene	0.0187	0.0020	mg/Kg wet	0.0200		93.7	70-130			
Trichlorofluoromethane (Freon 11)	0.0176	0.010	mg/Kg wet	0.0200		88.0	70-130			
1,2,3-Trichloropropane	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257772 - SW-846 5035

LCS (B257772-BS1)

Prepared & Analyzed: 05/11/20

1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0180	0.010	mg/Kg wet	0.0200		89.9	70-130			
1,2,4-Trimethylbenzene	0.0186	0.0020	mg/Kg wet	0.0200		93.1	70-130			
1,3,5-Trimethylbenzene	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130			
Vinyl Chloride	0.0179	0.010	mg/Kg wet	0.0200		89.6	40-130			†
m+p Xylene	0.0374	0.0040	mg/Kg wet	0.0400		93.5	70-130			
o-Xylene	0.0185	0.0020	mg/Kg wet	0.0200		92.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0486		mg/Kg wet	0.0500		97.2	70-130			
Surrogate: Toluene-d8	0.0500		mg/Kg wet	0.0500		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.0489		mg/Kg wet	0.0500		97.8	70-130			

LCS Dup (B257772-BSD1)

Prepared & Analyzed: 05/11/20

Acetone	0.206	0.10	mg/Kg wet	0.200		103	70-160	2.14	25	†
Acrylonitrile	0.0199	0.0060	mg/Kg wet	0.0200		99.3	70-130	3.28	25	
tert-Amyl Methyl Ether (TAME)	0.0195	0.0010	mg/Kg wet	0.0200		97.3	70-130	0.615	25	
Benzene	0.0178	0.0020	mg/Kg wet	0.0200		89.2	70-130	0.788	25	
Bromobenzene	0.0195	0.0020	mg/Kg wet	0.0200		97.4	70-130	2.39	25	
Bromochloromethane	0.0209	0.0020	mg/Kg wet	0.0200		104	70-130	1.62	25	
Bromodichloromethane	0.0182	0.0020	mg/Kg wet	0.0200		91.1	70-130	0.329	25	
Bromoform	0.0216	0.0020	mg/Kg wet	0.0200		108	70-130	4.06	25	
Bromomethane	0.0168	0.010	mg/Kg wet	0.0200		84.0	40-130	4.08	25	V-34 †
2-Butanone (MEK)	0.207	0.040	mg/Kg wet	0.200		104	70-160	2.77	25	†
tert-Butyl Alcohol (TBA)	0.209	0.040	mg/Kg wet	0.200		104	40-130	7.11	25	†
n-Butylbenzene	0.0174	0.0020	mg/Kg wet	0.0200		87.1	70-130	1.03	25	
sec-Butylbenzene	0.0193	0.0020	mg/Kg wet	0.0200		96.6	70-130	1.74	25	
tert-Butylbenzene	0.0200	0.0020	mg/Kg wet	0.0200		100	70-160	1.21	25	†
tert-Butyl Ethyl Ether (TBEE)	0.0193	0.0010	mg/Kg wet	0.0200		96.6	70-130	0.722	25	
Carbon Disulfide	0.161	0.0060	mg/Kg wet	0.200		80.7	70-130	1.88	25	
Carbon Tetrachloride	0.0190	0.0020	mg/Kg wet	0.0200		94.9	70-130	1.88	25	
Chlorobenzene	0.0206	0.0020	mg/Kg wet	0.0200		103	70-130	2.11	25	
Chlorodibromomethane	0.0201	0.0010	mg/Kg wet	0.0200		101	70-130	2.82	25	
Chloroethane	0.0181	0.020	mg/Kg wet	0.0200		90.4	70-130	4.86	25	
Chloroform	0.0172	0.0040	mg/Kg wet	0.0200		86.0	70-130	2.53	25	
Chloromethane	0.0162	0.010	mg/Kg wet	0.0200		81.1	70-130	3.16	25	
2-Chlorotoluene	0.0195	0.0020	mg/Kg wet	0.0200		97.7	70-130	1.65	25	
4-Chlorotoluene	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130	1.17	25	
1,2-Dibromo-3-chloropropane (DBCP)	0.0200	0.0020	mg/Kg wet	0.0200		99.8	70-130	5.93	25	
1,2-Dibromoethane (EDB)	0.0204	0.0010	mg/Kg wet	0.0200		102	70-130	4.30	25	
Dibromomethane	0.0202	0.0020	mg/Kg wet	0.0200		101	70-130	1.80	25	
1,2-Dichlorobenzene	0.0201	0.0020	mg/Kg wet	0.0200		101	70-130	2.41	25	
1,3-Dichlorobenzene	0.0196	0.0020	mg/Kg wet	0.0200		98.2	70-130	3.30	25	
1,4-Dichlorobenzene	0.0193	0.0020	mg/Kg wet	0.0200		96.4	70-130	1.13	25	
trans-1,4-Dichloro-2-butene	0.0193	0.0040	mg/Kg wet	0.0200		96.4	70-130	9.39	25	
Dichlorodifluoromethane (Freon 12)	0.0168	0.020	mg/Kg wet	0.0200		84.1	40-160	1.42	25	†
1,1-Dichloroethane	0.0193	0.0020	mg/Kg wet	0.0200		96.3	70-130	2.31	25	
1,2-Dichloroethane	0.0205	0.0020	mg/Kg wet	0.0200		102	70-130	1.28	25	
1,1-Dichloroethylene	0.0160	0.0040	mg/Kg wet	0.0200		80.1	70-130	2.47	25	
cis-1,2-Dichloroethylene	0.0177	0.0020	mg/Kg wet	0.0200		88.5	70-130	1.24	25	
trans-1,2-Dichloroethylene	0.0180	0.0020	mg/Kg wet	0.0200		90.1	70-130	1.76	25	
1,2-Dichloropropane	0.0210	0.0020	mg/Kg wet	0.0200		105	70-130	7.01	25	
1,3-Dichloropropane	0.0205	0.0010	mg/Kg wet	0.0200		103	70-130	2.56	25	
2,2-Dichloropropane	0.0171	0.0020	mg/Kg wet	0.0200		85.7	70-130	1.41	25	
1,1-Dichloropropene	0.0180	0.0020	mg/Kg wet	0.0200		90.0	70-130	2.82	25	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257772 - SW-846 5035										
LCS Dup (B257772-BSD1)										
Prepared & Analyzed: 05/11/20										
cis-1,3-Dichloropropene	0.0199	0.0010	mg/Kg wet	0.0200		99.4	70-130	1.11	25	
trans-1,3-Dichloropropene	0.0198	0.0010	mg/Kg wet	0.0200		99.1	70-130	0.607	25	
Diethyl Ether	0.0173	0.020	mg/Kg wet	0.0200		86.5	70-130	4.61	25	
Diisopropyl Ether (DIPE)	0.0192	0.0010	mg/Kg wet	0.0200		96.2	70-130	1.03	25	
1,4-Dioxane	0.208	0.10	mg/Kg wet	0.200		104	40-160	6.60	50	† ‡
Ethylbenzene	0.0179	0.0020	mg/Kg wet	0.0200		89.4	70-130	4.16	25	
Hexachlorobutadiene	0.0222	0.0020	mg/Kg wet	0.0200		111	70-160	1.54	25	
2-Hexanone (MBK)	0.201	0.020	mg/Kg wet	0.200		100	70-160	1.99	25	†
Isopropylbenzene (Cumene)	0.0206	0.0020	mg/Kg wet	0.0200		103	70-130	0.585	25	
p-Isopropyltoluene (p-Cymene)	0.0194	0.0020	mg/Kg wet	0.0200		97.0	70-130	0.309	25	
Methyl Acetate	0.0228	0.0020	mg/Kg wet	0.0200		114	70-130	1.82	25	
Methyl tert-Butyl Ether (MTBE)	0.0184	0.0040	mg/Kg wet	0.0200		91.9	70-130	3.00	25	
Methyl Cyclohexane	0.0185	0.0020	mg/Kg wet	0.0200		92.6	70-130	0.860	25	
Methylene Chloride	0.0203	0.020	mg/Kg wet	0.0200		102	40-160	3.00	25	†
4-Methyl-2-pentanone (MIBK)	0.205	0.020	mg/Kg wet	0.200		103	70-160	2.17	25	†
Naphthalene	0.0161	0.0040	mg/Kg wet	0.0200		80.7	40-130	3.53	25	V-05 †
n-Propylbenzene	0.0184	0.0020	mg/Kg wet	0.0200		91.9	70-130	1.73	25	
Styrene	0.0197	0.0020	mg/Kg wet	0.0200		98.4	70-130	2.71	25	
1,1,1,2-Tetrachloroethane	0.0207	0.0020	mg/Kg wet	0.0200		104	70-130	0.770	25	
1,1,2,2-Tetrachloroethane	0.0197	0.0010	mg/Kg wet	0.0200		98.3	70-130	0.408	25	
Tetrachloroethylene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	1.34	25	
Tetrahydrofuran	0.0190	0.010	mg/Kg wet	0.0200		95.0	70-130	7.20	25	
Toluene	0.0184	0.0020	mg/Kg wet	0.0200		91.9	70-130	0.00	25	
1,2,3-Trichlorobenzene	0.0197	0.0020	mg/Kg wet	0.0200		98.7	70-130	2.25	25	
1,2,4-Trichlorobenzene	0.0189	0.0020	mg/Kg wet	0.0200		94.5	70-130	2.82	25	
1,3,5-Trichlorobenzene	0.0208	0.0020	mg/Kg wet	0.0200		104	70-130	0.193	25	
1,1,1-Trichloroethane	0.0171	0.0020	mg/Kg wet	0.0200		85.5	70-130	0.467	25	
1,1,2-Trichloroethane	0.0185	0.0020	mg/Kg wet	0.0200		92.6	70-130	2.52	25	
Trichloroethylene	0.0190	0.0020	mg/Kg wet	0.0200		95.1	70-130	1.48	25	
Trichlorofluoromethane (Freon 11)	0.0175	0.010	mg/Kg wet	0.0200		87.7	70-130	0.341	25	
1,2,3-Trichloropropane	0.0214	0.0020	mg/Kg wet	0.0200		107	70-130	2.37	25	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.0168	0.010	mg/Kg wet	0.0200		83.9	70-130	6.90	25	
1,2,4-Trimethylbenzene	0.0182	0.0020	mg/Kg wet	0.0200		91.2	70-130	2.06	25	
1,3,5-Trimethylbenzene	0.0186	0.0020	mg/Kg wet	0.0200		93.2	70-130	4.00	25	
Vinyl Chloride	0.0170	0.010	mg/Kg wet	0.0200		85.1	40-130	5.15	25	†
m+p Xylene	0.0373	0.0040	mg/Kg wet	0.0400		93.3	70-130	0.214	25	
o-Xylene	0.0181	0.0020	mg/Kg wet	0.0200		90.7	70-130	2.07	25	
Surrogate: 1,2-Dichloroethane-d4	0.0476		mg/Kg wet	0.0500		95.3	70-130			
Surrogate: Toluene-d8	0.0501		mg/Kg wet	0.0500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0495		mg/Kg wet	0.0500		98.9	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257789 - SW-846 3546

Blank (B257789-BLK1)

Prepared: 05/11/20 Analyzed: 05/12/20

Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Anthracene	ND	0.17	mg/Kg wet							
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Surrogate: Nitrobenzene-d5	2.72		mg/Kg wet	3.33		81.5	30-130			
Surrogate: 2-Fluorobiphenyl	2.87		mg/Kg wet	3.33		86.2	30-130			
Surrogate: p-Terphenyl-d14	3.25		mg/Kg wet	3.33		97.5	30-130			

LCS (B257789-BS1)

Prepared: 05/11/20 Analyzed: 05/12/20

Acenaphthene	1.35	0.17	mg/Kg wet	1.67		81.3	40-140			
Acenaphthylene	1.27	0.17	mg/Kg wet	1.67		76.3	40-140			
Anthracene	1.39	0.17	mg/Kg wet	1.67		83.3	40-140			
Benzo(a)anthracene	1.40	0.17	mg/Kg wet	1.67		83.8	40-140			
Benzo(a)pyrene	1.42	0.17	mg/Kg wet	1.67		85.4	40-140			
Benzo(b)fluoranthene	1.40	0.17	mg/Kg wet	1.67		84.1	40-140			
Benzo(g,h,i)perylene	1.48	0.17	mg/Kg wet	1.67		89.1	40-140			
Benzo(k)fluoranthene	1.41	0.17	mg/Kg wet	1.67		84.6	40-140			
Chrysene	1.38	0.17	mg/Kg wet	1.67		83.1	40-140			
Dibenz(a,h)anthracene	1.51	0.17	mg/Kg wet	1.67		90.7	40-140			
Fluoranthene	1.39	0.17	mg/Kg wet	1.67		83.6	40-140			
Fluorene	1.39	0.17	mg/Kg wet	1.67		83.4	40-140			
Indeno(1,2,3-cd)pyrene	1.68	0.17	mg/Kg wet	1.67		101	40-140			
2-Methylnaphthalene	1.48	0.17	mg/Kg wet	1.67		88.8	40-140			
Naphthalene	1.28	0.17	mg/Kg wet	1.67		76.8	40-140			
Phenanthrene	1.39	0.17	mg/Kg wet	1.67		83.5	40-140			
Pyrene	1.42	0.17	mg/Kg wet	1.67		85.0	40-140			
Surrogate: Nitrobenzene-d5	2.78		mg/Kg wet	3.33		83.5	30-130			
Surrogate: 2-Fluorobiphenyl	2.83		mg/Kg wet	3.33		84.9	30-130			
Surrogate: p-Terphenyl-d14	3.10		mg/Kg wet	3.33		92.9	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257789 - SW-846 3546										
LCS Dup (B257789-BSD1)										
					Prepared: 05/11/20 Analyzed: 05/12/20					
Acenaphthene	1.37	0.17	mg/Kg wet	1.67		82.1	40-140	0.955	30	
Acenaphthylene	1.28	0.17	mg/Kg wet	1.67		76.6	40-140	0.314	30	
Anthracene	1.37	0.17	mg/Kg wet	1.67		82.5	40-140	0.965	30	
Benzo(a)anthracene	1.38	0.17	mg/Kg wet	1.67		82.6	40-140	1.47	30	
Benzo(a)pyrene	1.40	0.17	mg/Kg wet	1.67		84.0	40-140	1.58	30	
Benzo(b)fluoranthene	1.39	0.17	mg/Kg wet	1.67		83.5	40-140	0.763	30	
Benzo(g,h,i)perylene	1.46	0.17	mg/Kg wet	1.67		87.4	40-140	1.90	30	
Benzo(k)fluoranthene	1.38	0.17	mg/Kg wet	1.67		83.1	40-140	1.84	30	
Chrysene	1.35	0.17	mg/Kg wet	1.67		81.3	40-140	2.19	30	
Dibenz(a,h)anthracene	1.50	0.17	mg/Kg wet	1.67		89.8	40-140	0.975	30	
Fluoranthene	1.39	0.17	mg/Kg wet	1.67		83.6	40-140	0.0239	30	
Fluorene	1.39	0.17	mg/Kg wet	1.67		83.4	40-140	0.0480	30	
Indeno(1,2,3-cd)pyrene	1.65	0.17	mg/Kg wet	1.67		98.8	40-140	2.14	30	
2-Methylnaphthalene	1.48	0.17	mg/Kg wet	1.67		88.5	40-140	0.316	30	
Naphthalene	1.29	0.17	mg/Kg wet	1.67		77.3	40-140	0.597	30	
Phenanthrene	1.39	0.17	mg/Kg wet	1.67		83.4	40-140	0.192	30	
Pyrene	1.39	0.17	mg/Kg wet	1.67		83.5	40-140	1.78	30	
Surrogate: Nitrobenzene-d5	2.77		mg/Kg wet	3.33		83.0	30-130			
Surrogate: 2-Fluorobiphenyl	2.86		mg/Kg wet	3.33		85.8	30-130			
Surrogate: p-Terphenyl-d14	3.05		mg/Kg wet	3.33		91.4	30-130			

Batch B258013 - SW-846 3546

Blank (B258013-BLK1)										
					Prepared: 05/14/20 Analyzed: 05/15/20					
Acenaphthene	ND	0.17	mg/Kg wet							
Acenaphthylene	ND	0.17	mg/Kg wet							
Acetophenone	ND	0.34	mg/Kg wet							
Aniline	ND	0.34	mg/Kg wet							V-05
Anthracene	ND	0.17	mg/Kg wet							
Benzidine	ND	0.66	mg/Kg wet							V-04, V-05, V-35
Benzo(a)anthracene	ND	0.17	mg/Kg wet							
Benzo(a)pyrene	ND	0.17	mg/Kg wet							
Benzo(b)fluoranthene	ND	0.17	mg/Kg wet							
Benzo(g,h,i)perylene	ND	0.17	mg/Kg wet							
Benzo(k)fluoranthene	ND	0.17	mg/Kg wet							
Benzoic Acid	ND	1.0	mg/Kg wet							
Bis(2-chloroethoxy)methane	ND	0.34	mg/Kg wet							
Bis(2-chloroethyl)ether	ND	0.34	mg/Kg wet							
Bis(2-chloroisopropyl)ether	ND	0.34	mg/Kg wet							
Bis(2-Ethylhexyl)phthalate	ND	0.34	mg/Kg wet							
4-Bromophenylphenylether	ND	0.34	mg/Kg wet							
Butylbenzylphthalate	ND	0.34	mg/Kg wet							
Carbazole	ND	0.17	mg/Kg wet							
4-Chloroaniline	ND	0.66	mg/Kg wet							
4-Chloro-3-methylphenol	ND	0.66	mg/Kg wet							
2-Chloronaphthalene	ND	0.34	mg/Kg wet							
2-Chlorophenol	ND	0.34	mg/Kg wet							
4-Chlorophenylphenylether	ND	0.34	mg/Kg wet							
Chrysene	ND	0.17	mg/Kg wet							
Dibenz(a,h)anthracene	ND	0.17	mg/Kg wet							
Dibenzofuran	ND	0.34	mg/Kg wet							
Di-n-butylphthalate	ND	0.34	mg/Kg wet							
1,2-Dichlorobenzene	ND	0.34	mg/Kg wet							

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B258013 - SW-846 3546										
Blank (B258013-BLK1)										
					Prepared: 05/14/20 Analyzed: 05/15/20					
1,3-Dichlorobenzene	ND	0.34	mg/Kg wet							
1,4-Dichlorobenzene	ND	0.34	mg/Kg wet							
3,3-Dichlorobenzidine	ND	0.17	mg/Kg wet							
2,4-Dichlorophenol	ND	0.34	mg/Kg wet							
Diethylphthalate	ND	0.34	mg/Kg wet							
2,4-Dimethylphenol	ND	0.34	mg/Kg wet							
Dimethylphthalate	ND	0.34	mg/Kg wet							
4,6-Dinitro-2-methylphenol	ND	0.34	mg/Kg wet							
2,4-Dinitrophenol	ND	0.66	mg/Kg wet							V-04, V-06
2,4-Dinitrotoluene	ND	0.34	mg/Kg wet							
2,6-Dinitrotoluene	ND	0.34	mg/Kg wet							
Di-n-octylphthalate	ND	0.34	mg/Kg wet							
1,2-Diphenylhydrazine/Azobenzene	ND	0.34	mg/Kg wet							
Fluoranthene	ND	0.17	mg/Kg wet							
Fluorene	ND	0.17	mg/Kg wet							
Hexachlorobenzene	ND	0.34	mg/Kg wet							
Hexachlorobutadiene	ND	0.34	mg/Kg wet							
Hexachlorocyclopentadiene	ND	0.34	mg/Kg wet							
Hexachloroethane	ND	0.34	mg/Kg wet							
Indeno(1,2,3-cd)pyrene	ND	0.17	mg/Kg wet							
Isophorone	ND	0.34	mg/Kg wet							
1-Methylnaphthalene	ND	0.17	mg/Kg wet							
2-Methylnaphthalene	ND	0.17	mg/Kg wet							
2-Methylphenol	ND	0.34	mg/Kg wet							
3/4-Methylphenol	ND	0.34	mg/Kg wet							
Naphthalene	ND	0.17	mg/Kg wet							
2-Nitroaniline	ND	0.34	mg/Kg wet							V-35
3-Nitroaniline	ND	0.34	mg/Kg wet							
4-Nitroaniline	ND	0.34	mg/Kg wet							
Nitrobenzene	ND	0.34	mg/Kg wet							
2-Nitrophenol	ND	0.34	mg/Kg wet							V-06
4-Nitrophenol	ND	0.66	mg/Kg wet							
N-Nitrosodimethylamine	ND	0.34	mg/Kg wet							
N-Nitrosodiphenylamine/Diphenylamine	ND	0.34	mg/Kg wet							
N-Nitrosodi-n-propylamine	ND	0.34	mg/Kg wet							
Pentachloronitrobenzene	ND	0.34	mg/Kg wet							
Pentachlorophenol	ND	0.34	mg/Kg wet							
Phenanthrene	ND	0.17	mg/Kg wet							
Phenol	ND	0.34	mg/Kg wet							
Pyrene	ND	0.17	mg/Kg wet							
Pyridine	ND	0.34	mg/Kg wet							
1,2,4,5-Tetrachlorobenzene	ND	0.34	mg/Kg wet							
1,2,4-Trichlorobenzene	ND	0.34	mg/Kg wet							
2,4,5-Trichlorophenol	ND	0.34	mg/Kg wet							
2,4,6-Trichlorophenol	ND	0.34	mg/Kg wet							
Surrogate: 2-Fluorophenol	4.27		mg/Kg wet	6.67		64.0	30-130			
Surrogate: Phenol-d6	4.34		mg/Kg wet	6.67		65.1	30-130			
Surrogate: Nitrobenzene-d5	2.19		mg/Kg wet	3.33		65.6	30-130			
Surrogate: 2-Fluorobiphenyl	2.25		mg/Kg wet	3.33		67.5	30-130			
Surrogate: 2,4,6-Tribromophenol	5.70		mg/Kg wet	6.67		85.6	30-130			
Surrogate: p-Terphenyl-d14	2.85		mg/Kg wet	3.33		85.6	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B258013 - SW-846 3546										
LCS (B258013-BS1)										
					Prepared: 05/14/20 Analyzed: 05/15/20					
Acenaphthene	1.19	0.17	mg/Kg wet	1.67		71.5	40-140			
Acenaphthylene	1.14	0.17	mg/Kg wet	1.67		68.5	40-140			
Acetophenone	1.19	0.34	mg/Kg wet	1.67		71.3	40-140			
Aniline	0.888	0.34	mg/Kg wet	1.67		53.3	10-140			V-05 †
Anthracene	1.26	0.17	mg/Kg wet	1.67		75.5	40-140			
Benidine	1.21	0.66	mg/Kg wet	1.67		72.5	40-140			V-04, V-05, V-35
Benzo(a)anthracene	1.26	0.17	mg/Kg wet	1.67		75.7	40-140			
Benzo(a)pyrene	1.26	0.17	mg/Kg wet	1.67		75.8	40-140			
Benzo(b)fluoranthene	1.19	0.17	mg/Kg wet	1.67		71.2	40-140			
Benzo(g,h,i)perylene	1.35	0.17	mg/Kg wet	1.67		81.1	40-140			
Benzo(k)fluoranthene	1.21	0.17	mg/Kg wet	1.67		72.7	40-140			
Benzoic Acid	0.523	1.0	mg/Kg wet	1.67		31.4	30-130			
Bis(2-chloroethoxy)methane	1.27	0.34	mg/Kg wet	1.67		76.1	40-140			
Bis(2-chloroethyl)ether	1.16	0.34	mg/Kg wet	1.67		69.7	40-140			
Bis(2-chloroisopropyl)ether	1.27	0.34	mg/Kg wet	1.67		76.1	40-140			
Bis(2-Ethylhexyl)phthalate	1.45	0.34	mg/Kg wet	1.67		87.2	40-140			
4-Bromophenylphenylether	1.39	0.34	mg/Kg wet	1.67		83.3	40-140			
Butylbenzylphthalate	1.43	0.34	mg/Kg wet	1.67		85.8	40-140			
Carbazole	1.19	0.17	mg/Kg wet	1.67		71.6	40-140			
4-Chloroaniline	0.937	0.66	mg/Kg wet	1.67		56.2	10-140			†
4-Chloro-3-methylphenol	1.26	0.66	mg/Kg wet	1.67		75.3	30-130			
2-Chloronaphthalene	1.08	0.34	mg/Kg wet	1.67		64.9	40-140			
2-Chlorophenol	1.20	0.34	mg/Kg wet	1.67		71.8	30-130			
4-Chlorophenylphenylether	1.26	0.34	mg/Kg wet	1.67		75.6	40-140			
Chrysene	1.26	0.17	mg/Kg wet	1.67		75.6	40-140			
Dibenz(a,h)anthracene	1.40	0.17	mg/Kg wet	1.67		84.3	40-140			
Dibenzofuran	1.24	0.34	mg/Kg wet	1.67		74.7	40-140			
Di-n-butylphthalate	1.28	0.34	mg/Kg wet	1.67		76.7	40-140			
1,2-Dichlorobenzene	1.06	0.34	mg/Kg wet	1.67		63.6	40-140			
1,3-Dichlorobenzene	1.03	0.34	mg/Kg wet	1.67		61.7	40-140			
1,4-Dichlorobenzene	1.04	0.34	mg/Kg wet	1.67		62.4	40-140			
3,3-Dichlorobenzidine	1.28	0.17	mg/Kg wet	1.67		76.6	20-140			†
2,4-Dichlorophenol	1.25	0.34	mg/Kg wet	1.67		75.2	30-130			
Diethylphthalate	1.22	0.34	mg/Kg wet	1.67		73.0	40-140			
2,4-Dimethylphenol	1.04	0.34	mg/Kg wet	1.67		62.4	30-130			
Dimethylphthalate	1.23	0.34	mg/Kg wet	1.67		73.9	40-140			
4,6-Dinitro-2-methylphenol	1.44	0.34	mg/Kg wet	1.67		86.2	30-130			
2,4-Dinitrophenol	0.936	0.66	mg/Kg wet	1.67		56.2	30-130			V-04, V-06
2,4-Dinitrotoluene	1.31	0.34	mg/Kg wet	1.67		78.7	40-140			
2,6-Dinitrotoluene	1.37	0.34	mg/Kg wet	1.67		82.2	40-140			
Di-n-octylphthalate	1.27	0.34	mg/Kg wet	1.67		76.2	40-140			
1,2-Diphenylhydrazine/Azobenzene	1.25	0.34	mg/Kg wet	1.67		74.9	40-140			
Fluoranthene	1.21	0.17	mg/Kg wet	1.67		72.9	40-140			
Fluorene	1.21	0.17	mg/Kg wet	1.67		72.8	40-140			
Hexachlorobenzene	1.30	0.34	mg/Kg wet	1.67		78.2	40-140			
Hexachlorobutadiene	1.13	0.34	mg/Kg wet	1.67		67.6	40-140			
Hexachlorocyclopentadiene	1.20	0.34	mg/Kg wet	1.67		71.8	40-140			
Hexachloroethane	1.09	0.34	mg/Kg wet	1.67		65.7	40-140			
Indeno(1,2,3-cd)pyrene	1.52	0.17	mg/Kg wet	1.67		91.2	40-140			
Isophorone	1.21	0.34	mg/Kg wet	1.67		72.6	40-140			
1-Methylnaphthalene	1.12	0.17	mg/Kg wet	1.67		67.1	40-140			
2-Methylnaphthalene	1.32	0.17	mg/Kg wet	1.67		79.3	40-140			

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B258013 - SW-846 3546

LCS (B258013-BS1)

Prepared: 05/14/20 Analyzed: 05/15/20

2-Methylphenol	1.19	0.34	mg/Kg wet	1.67		71.2	30-130			
3/4-Methylphenol	1.20	0.34	mg/Kg wet	1.67		71.7	30-130			
Naphthalene	1.16	0.17	mg/Kg wet	1.67		69.8	40-140			
2-Nitroaniline	1.61	0.34	mg/Kg wet	1.67		96.4	40-140			V-35
3-Nitroaniline	1.26	0.34	mg/Kg wet	1.67		75.7	30-140			†
4-Nitroaniline	1.31	0.34	mg/Kg wet	1.67		78.4	40-140			
Nitrobenzene	1.17	0.34	mg/Kg wet	1.67		70.1	40-140			
2-Nitrophenol	1.50	0.34	mg/Kg wet	1.67		90.0	30-130			V-06
4-Nitrophenol	1.18	0.66	mg/Kg wet	1.67		71.0	30-130			
N-Nitrosodimethylamine	1.10	0.34	mg/Kg wet	1.67		65.9	40-140			
N-Nitrosodiphenylamine/Diphenylamine	1.43	0.34	mg/Kg wet	1.67		85.7	40-140			
N-Nitrosodi-n-propylamine	1.20	0.34	mg/Kg wet	1.67		71.9	40-140			
Pentachloronitrobenzene	1.45	0.34	mg/Kg wet	1.67		87.1	40-140			
Pentachlorophenol	1.08	0.34	mg/Kg wet	1.67		64.9	30-130			
Phenanthrene	1.26	0.17	mg/Kg wet	1.67		75.6	40-140			
Phenol	1.14	0.34	mg/Kg wet	1.67		68.7	30-130			
Pyrene	1.29	0.17	mg/Kg wet	1.67		77.7	40-140			
Pyridine	0.863	0.34	mg/Kg wet	1.67		51.8	30-140			†
1,2,4,5-Tetrachlorobenzene	1.25	0.34	mg/Kg wet	1.67		75.1	40-140			
1,2,4-Trichlorobenzene	1.15	0.34	mg/Kg wet	1.67		69.1	40-140			
2,4,5-Trichlorophenol	1.30	0.34	mg/Kg wet	1.67		78.2	30-130			
2,4,6-Trichlorophenol	1.29	0.34	mg/Kg wet	1.67		77.6	30-130			
Surrogate: 2-Fluorophenol	4.78		mg/Kg wet	6.67		71.8	30-130			
Surrogate: Phenol-d6	4.79		mg/Kg wet	6.67		71.9	30-130			
Surrogate: Nitrobenzene-d5	2.48		mg/Kg wet	3.33		74.5	30-130			
Surrogate: 2-Fluorobiphenyl	2.56		mg/Kg wet	3.33		76.7	30-130			
Surrogate: 2,4,6-Tribromophenol	5.78		mg/Kg wet	6.67		86.6	30-130			
Surrogate: p-Terphenyl-d14	2.85		mg/Kg wet	3.33		85.6	30-130			

LCS Dup (B258013-BS1)

Prepared: 05/14/20 Analyzed: 05/15/20

Acenaphthene	1.25	0.17	mg/Kg wet	1.67		74.9	40-140	4.59	30	
Acenaphthylene	1.19	0.17	mg/Kg wet	1.67		71.3	40-140	4.04	30	
Acetophenone	1.21	0.34	mg/Kg wet	1.67		72.4	40-140	1.53	30	
Aniline	0.938	0.34	mg/Kg wet	1.67		56.3	10-140	5.51	50	V-05 † ‡
Anthracene	1.34	0.17	mg/Kg wet	1.67		80.1	40-140	5.94	30	
Benzidine	1.43	0.66	mg/Kg wet	1.67		85.9	40-140	16.9	30	V-05, V-35, V-04
Benzo(a)anthracene	1.33	0.17	mg/Kg wet	1.67		80.0	40-140	5.47	30	
Benzo(a)pyrene	1.33	0.17	mg/Kg wet	1.67		79.8	40-140	5.24	30	
Benzo(b)fluoranthene	1.26	0.17	mg/Kg wet	1.67		75.9	40-140	6.34	30	
Benzo(g,h,i)perylene	1.38	0.17	mg/Kg wet	1.67		82.6	40-140	1.78	30	
Benzo(k)fluoranthene	1.29	0.17	mg/Kg wet	1.67		77.3	40-140	6.08	30	
Benzoic Acid	0.672	1.0	mg/Kg wet	1.67		40.3	30-130	24.8	50	‡
Bis(2-chloroethoxy)methane	1.28	0.34	mg/Kg wet	1.67		77.0	40-140	1.18	30	
Bis(2-chloroethyl)ether	1.16	0.34	mg/Kg wet	1.67		69.8	40-140	0.143	30	
Bis(2-chloroisopropyl)ether	1.26	0.34	mg/Kg wet	1.67		75.4	40-140	0.898	30	
Bis(2-Ethylhexyl)phthalate	1.52	0.34	mg/Kg wet	1.67		91.1	40-140	4.33	30	
4-Bromophenylphenylether	1.45	0.34	mg/Kg wet	1.67		87.0	40-140	4.32	30	
Butylbenzylphthalate	1.48	0.34	mg/Kg wet	1.67		88.9	40-140	3.59	30	
Carbazole	1.27	0.17	mg/Kg wet	1.67		76.1	40-140	6.15	30	
4-Chloroaniline	1.02	0.66	mg/Kg wet	1.67		61.1	10-140	8.28	30	†
4-Chloro-3-methylphenol	1.29	0.66	mg/Kg wet	1.67		77.1	30-130	2.36	30	
2-Chloronaphthalene	1.13	0.34	mg/Kg wet	1.67		68.0	40-140	4.76	30	

QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B258013 - SW-846 3546										
LCS Dup (B258013-BSD1)										
					Prepared: 05/14/20 Analyzed: 05/15/20					
2-Chlorophenol	1.21	0.34	mg/Kg wet	1.67		72.4	30-130	0.887	30	
4-Chlorophenylphenylether	1.31	0.34	mg/Kg wet	1.67		78.6	40-140	3.89	30	
Chrysene	1.33	0.17	mg/Kg wet	1.67		79.9	40-140	5.51	30	
Dibenz(a,h)anthracene	1.45	0.17	mg/Kg wet	1.67		87.2	40-140	3.43	30	
Dibenzofuran	1.29	0.34	mg/Kg wet	1.67		77.5	40-140	3.68	30	
Di-n-butylphthalate	1.34	0.34	mg/Kg wet	1.67		80.6	40-140	4.96	30	
1,2-Dichlorobenzene	1.07	0.34	mg/Kg wet	1.67		64.5	40-140	1.34	30	
1,3-Dichlorobenzene	1.04	0.34	mg/Kg wet	1.67		62.3	40-140	0.935	30	
1,4-Dichlorobenzene	1.05	0.34	mg/Kg wet	1.67		63.0	40-140	0.925	30	
3,3-Dichlorobenzidine	1.45	0.17	mg/Kg wet	1.67		87.1	20-140	12.9	50	† ‡
2,4-Dichlorophenol	1.29	0.34	mg/Kg wet	1.67		77.6	30-130	3.04	30	
Diethylphthalate	1.28	0.34	mg/Kg wet	1.67		76.6	40-140	4.73	30	
2,4-Dimethylphenol	1.08	0.34	mg/Kg wet	1.67		64.6	30-130	3.47	30	
Dimethylphthalate	1.28	0.34	mg/Kg wet	1.67		77.0	40-140	4.11	30	
4,6-Dinitro-2-methylphenol	1.57	0.34	mg/Kg wet	1.67		94.2	30-130	8.96	30	
2,4-Dinitrophenol	1.20	0.66	mg/Kg wet	1.67		71.7	30-130	24.3	30	V-04, V-06
2,4-Dinitrotoluene	1.37	0.34	mg/Kg wet	1.67		82.4	40-140	4.62	30	
2,6-Dinitrotoluene	1.43	0.34	mg/Kg wet	1.67		85.9	40-140	4.47	30	
Di-n-octylphthalate	1.34	0.34	mg/Kg wet	1.67		80.3	40-140	5.26	30	
1,2-Diphenylhydrazine/Azobenzene	1.28	0.34	mg/Kg wet	1.67		77.0	40-140	2.87	30	
Fluoranthene	1.28	0.17	mg/Kg wet	1.67		76.9	40-140	5.45	30	
Fluorene	1.27	0.17	mg/Kg wet	1.67		76.0	40-140	4.19	30	
Hexachlorobenzene	1.39	0.34	mg/Kg wet	1.67		83.2	40-140	6.22	30	
Hexachlorobutadiene	1.16	0.34	mg/Kg wet	1.67		69.3	40-140	2.48	30	
Hexachlorocyclopentadiene	1.26	0.34	mg/Kg wet	1.67		75.6	40-140	5.16	30	
Hexachloroethane	1.11	0.34	mg/Kg wet	1.67		66.5	40-140	1.24	30	
Indeno(1,2,3-cd)pyrene	1.59	0.17	mg/Kg wet	1.67		95.5	40-140	4.61	30	
Isophorone	1.22	0.34	mg/Kg wet	1.67		73.4	40-140	1.07	30	
1-Methylnaphthalene	1.14	0.17	mg/Kg wet	1.67		68.5	40-140	2.12	30	
2-Methylnaphthalene	1.34	0.17	mg/Kg wet	1.67		80.1	40-140	1.00	30	
2-Methylphenol	1.19	0.34	mg/Kg wet	1.67		71.5	30-130	0.308	30	
3/4-Methylphenol	1.21	0.34	mg/Kg wet	1.67		72.4	30-130	0.916	30	
Naphthalene	1.18	0.17	mg/Kg wet	1.67		70.7	40-140	1.25	30	
2-Nitroaniline	1.65	0.34	mg/Kg wet	1.67		98.8	40-140	2.48	30	V-35
3-Nitroaniline	1.36	0.34	mg/Kg wet	1.67		81.9	30-140	7.87	30	†
4-Nitroaniline	1.38	0.34	mg/Kg wet	1.67		82.5	40-140	5.05	30	
Nitrobenzene	1.17	0.34	mg/Kg wet	1.67		70.4	40-140	0.342	30	
2-Nitrophenol	1.54	0.34	mg/Kg wet	1.67		92.6	30-130	2.87	30	V-06
4-Nitrophenol	1.24	0.66	mg/Kg wet	1.67		74.5	30-130	4.81	50	‡
N-Nitrosodimethylamine	1.08	0.34	mg/Kg wet	1.67		65.0	40-140	1.34	30	
N-Nitrosodiphenylamine/Diphenylamine	1.49	0.34	mg/Kg wet	1.67		89.4	40-140	4.32	30	
N-Nitrosodi-n-propylamine	1.20	0.34	mg/Kg wet	1.67		71.9	40-140	0.0557	30	
Pentachloronitrobenzene	1.57	0.34	mg/Kg wet	1.67		94.0	40-140	7.62	30	
Pentachlorophenol	1.17	0.34	mg/Kg wet	1.67		70.5	30-130	8.28	30	
Phenanthrene	1.33	0.17	mg/Kg wet	1.67		79.7	40-140	5.33	30	
Phenol	1.16	0.34	mg/Kg wet	1.67		69.6	30-130	1.33	30	
Pyrene	1.35	0.17	mg/Kg wet	1.67		81.0	40-140	4.26	30	
Pyridine	0.856	0.34	mg/Kg wet	1.67		51.4	30-140	0.737	30	†
1,2,4,5-Tetrachlorobenzene	1.30	0.34	mg/Kg wet	1.67		77.8	40-140	3.58	30	
1,2,4-Trichlorobenzene	1.17	0.34	mg/Kg wet	1.67		70.5	40-140	2.04	30	
2,4,5-Trichlorophenol	1.36	0.34	mg/Kg wet	1.67		81.7	30-130	4.43	30	
2,4,6-Trichlorophenol	1.37	0.34	mg/Kg wet	1.67		82.1	30-130	5.54	30	

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B258013 - SW-846 3546

LCS Dup (B258013-BSD1)

Prepared: 05/14/20 Analyzed: 05/15/20

Surrogate: 2-Fluorophenol	4.72		mg/Kg wet	6.67		70.9	30-130			
Surrogate: Phenol-d6	4.75		mg/Kg wet	6.67		71.3	30-130			
Surrogate: Nitrobenzene-d5	2.44		mg/Kg wet	3.33		73.3	30-130			
Surrogate: 2-Fluorobiphenyl	2.58		mg/Kg wet	3.33		77.4	30-130			
Surrogate: 2,4,6-Tribromophenol	6.00		mg/Kg wet	6.67		90.1	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/Kg wet	3.33		88.3	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257751 - SW-846 3540C										
Blank (B257751-BLK1)										
Prepared: 05/11/20 Analyzed: 05/14/20										
Aroclor-1016	ND	0.020	mg/Kg wet							
Aroclor-1016 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1221	ND	0.020	mg/Kg wet							
Aroclor-1221 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1232	ND	0.020	mg/Kg wet							
Aroclor-1232 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1242	ND	0.020	mg/Kg wet							
Aroclor-1242 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1248	ND	0.020	mg/Kg wet							
Aroclor-1248 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1254	ND	0.020	mg/Kg wet							
Aroclor-1254 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1260	ND	0.020	mg/Kg wet							
Aroclor-1260 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1262	ND	0.020	mg/Kg wet							
Aroclor-1262 [2C]	ND	0.020	mg/Kg wet							
Aroclor-1268	ND	0.020	mg/Kg wet							
Aroclor-1268 [2C]	ND	0.020	mg/Kg wet							
Surrogate: Decachlorobiphenyl	0.188		mg/Kg wet	0.196		95.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.182		mg/Kg wet	0.196		92.7	30-150			
Surrogate: Tetrachloro-m-xylene	0.198		mg/Kg wet	0.196		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.176		mg/Kg wet	0.196		89.8	30-150			
LCS (B257751-BS1)										
Prepared: 05/11/20 Analyzed: 05/15/20										
Aroclor-1016	0.21	0.020	mg/Kg wet	0.200		107	40-140			
Aroclor-1016 [2C]	0.18	0.020	mg/Kg wet	0.200		89.7	40-140			
Aroclor-1260	0.21	0.020	mg/Kg wet	0.200		104	40-140			
Aroclor-1260 [2C]	0.19	0.020	mg/Kg wet	0.200		93.7	40-140			
Surrogate: Decachlorobiphenyl	0.215		mg/Kg wet	0.200		108	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.211		mg/Kg wet	0.200		106	30-150			
Surrogate: Tetrachloro-m-xylene	0.224		mg/Kg wet	0.200		112	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.198		mg/Kg wet	0.200		99.1	30-150			
LCS Dup (B257751-BS1)										
Prepared: 05/11/20 Analyzed: 05/14/20										
Aroclor-1016	0.20	0.020	mg/Kg wet	0.200		98.2	40-140	8.32	30	
Aroclor-1016 [2C]	0.17	0.020	mg/Kg wet	0.200		83.2	40-140	7.50	30	
Aroclor-1260	0.19	0.020	mg/Kg wet	0.200		94.4	40-140	10.0	30	
Aroclor-1260 [2C]	0.17	0.020	mg/Kg wet	0.200		85.1	40-140	9.57	30	
Surrogate: Decachlorobiphenyl	0.187		mg/Kg wet	0.200		93.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.181		mg/Kg wet	0.200		90.6	30-150			
Surrogate: Tetrachloro-m-xylene	0.205		mg/Kg wet	0.200		102	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.183		mg/Kg wet	0.200		91.6	30-150			

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QUALITY CONTROL

Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B257751 - SW-846 3540C

Matrix Spike (B257751-MS1)

Source: 20E0343-01

Prepared: 05/11/20 Analyzed: 05/14/20

Aroclor-1016	0.36	0.12	mg/Kg dry	0.296	ND	122	40-140			
Aroclor-1016 [2C]	0.39	0.12	mg/Kg dry	0.296	ND	130	40-140			
Aroclor-1260	0.44	0.12	mg/Kg dry	0.296	0.11	112	40-140			
Aroclor-1260 [2C]	0.39	0.12	mg/Kg dry	0.296	0.11	95.6	40-140			
Surrogate: Decachlorobiphenyl	0.275		mg/Kg dry	0.296		92.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.277		mg/Kg dry	0.296		93.5	30-150			
Surrogate: Tetrachloro-m-xylene	0.303		mg/Kg dry	0.296		102	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.277		mg/Kg dry	0.296		93.6	30-150			

Matrix Spike Dup (B257751-MSD1)

Source: 20E0343-01

Prepared: 05/11/20 Analyzed: 05/14/20

Aroclor-1016	0.35	0.12	mg/Kg dry	0.296	ND	118	40-140	3.16	50	
Aroclor-1016 [2C]	0.36	0.12	mg/Kg dry	0.296	ND	121	40-140	7.28	50	
Aroclor-1260	0.49	0.12	mg/Kg dry	0.296	0.11	130	40-140	11.2	50	
Aroclor-1260 [2C]	0.46	0.12	mg/Kg dry	0.296	0.11	118	40-140	15.6	50	
Surrogate: Decachlorobiphenyl	0.265		mg/Kg dry	0.296		89.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.264		mg/Kg dry	0.296		89.1	30-150			
Surrogate: Tetrachloro-m-xylene	0.297		mg/Kg dry	0.296		100	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.273		mg/Kg dry	0.296		92.1	30-150			

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QUALITY CONTROL

Petroleum Hydrocarbons Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B258014 - SW-846 3546										
Blank (B258014-BLK1)										
Prepared: 05/14/20 Analyzed: 05/18/20										
TPH (C9-C36)	ND	8.3	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	2.76		mg/Kg wet	3.33		82.7	40-140			
LCS (B258014-BS1)										
Prepared: 05/14/20 Analyzed: 05/18/20										
TPH (C9-C36)	30.6	8.3	mg/Kg wet	33.3		91.9	40-140			
Surrogate: 2-Fluorobiphenyl	2.71		mg/Kg wet	3.33		81.4	40-140			
LCS Dup (B258014-BSD1)										
Prepared: 05/14/20 Analyzed: 05/18/20										
TPH (C9-C36)	30.5	8.3	mg/Kg wet	33.3		91.6	40-140	0.285	30	
Surrogate: 2-Fluorobiphenyl	2.70		mg/Kg wet	3.33		80.9	40-140			
Matrix Spike (B258014-MS1)										
Source: 20E0343-01 Prepared: 05/14/20 Analyzed: 05/18/20										
TPH (C9-C36)	2730	130	mg/Kg dry	50.5	2850	-245 *	40-140			MS-07A
Surrogate: 2-Fluorobiphenyl	2.27		mg/Kg dry	5.05		44.9	40-140			
Matrix Spike Dup (B258014-MSD1)										
Source: 20E0343-01 Prepared: 05/14/20 Analyzed: 05/18/20										
TPH (C9-C36)	2850	130	mg/Kg dry	50.5	2850	1.54 *	40-140	4.47	30	MS-07A
Surrogate: 2-Fluorobiphenyl	2.26		mg/Kg dry	5.05		44.8	40-140			
Batch B258243 - SW-846 3546										
Blank (B258243-BLK1)										
Prepared: 05/18/20 Analyzed: 05/19/20										
TPH (C9-C36)	ND	8.3	mg/Kg wet							
Surrogate: 2-Fluorobiphenyl	3.04		mg/Kg wet	3.31		91.9	40-140			
LCS (B258243-BS1)										
Prepared: 05/18/20 Analyzed: 05/19/20										
TPH (C9-C36)	28.1	8.2	mg/Kg wet	32.9		85.4	40-140			
Surrogate: 2-Fluorobiphenyl	2.70		mg/Kg wet	3.29		82.1	40-140			
LCS Dup (B258243-BSD1)										
Prepared: 05/18/20 Analyzed: 05/19/20										
TPH (C9-C36)	29.1	8.1	mg/Kg wet	32.5		89.5	40-140	3.37	30	
Surrogate: 2-Fluorobiphenyl	2.88		mg/Kg wet	3.25		88.8	40-140			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257720 - SW-846 7471										
Blank (B257720-BLK1) Prepared: 05/11/20 Analyzed: 05/12/20										
Mercury	ND	0.025	mg/Kg wet							
LCS (B257720-BS1) Prepared: 05/11/20 Analyzed: 05/12/20										
Mercury	7.92	0.38	mg/Kg wet	7.61		104	72.7-127.3			
LCS Dup (B257720-BSD1) Prepared: 05/11/20 Analyzed: 05/12/20										
Mercury	6.92	0.37	mg/Kg wet	7.61		90.9	72.7-127.3	13.5	20	
Duplicate (B257720-DUP1) Source: 20E0343-08 Prepared: 05/11/20 Analyzed: 05/12/20										
Mercury	ND	0.027	mg/Kg dry		ND			NC	20	
Matrix Spike (B257720-MS1) Source: 20E0343-08 Prepared: 05/11/20 Analyzed: 05/12/20										
Mercury	0.392	0.027	mg/Kg dry	0.367	0.0158	103	80-120			
Batch B257823 - SW-846 3050B										
Blank (B257823-BLK1) Prepared & Analyzed: 05/12/20										
Arsenic	ND	3.3	mg/Kg wet							
Barium	ND	1.7	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.67	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							
LCS (B257823-BS1) Prepared & Analyzed: 05/12/20										
Arsenic	147	10	mg/Kg wet	143		103	83.2-117.5			
Barium	438	5.0	mg/Kg wet	415		106	82.7-117.6			
Cadmium	54.1	1.0	mg/Kg wet	56.2		96.2	82.9-117.3			
Chromium	101	2.0	mg/Kg wet	101		99.8	82.4-116.8			
Lead	127	1.5	mg/Kg wet	125		102	82.4-116.8			
Selenium	75.1	10	mg/Kg wet	77.9		96.4	79.3-120.7			
Silver	36.7	1.0	mg/Kg wet	34.3		107	81-119.2			
LCS Dup (B257823-BSD1) Prepared & Analyzed: 05/12/20										
Arsenic	143	10	mg/Kg wet	143		99.7	83.2-117.5	2.88	30	
Barium	426	5.0	mg/Kg wet	415		103	82.7-117.6	2.71	20	
Cadmium	53.3	1.0	mg/Kg wet	56.2		94.8	82.9-117.3	1.42	20	
Chromium	98.5	2.0	mg/Kg wet	101		97.5	82.4-116.8	2.32	30	
Lead	125	1.5	mg/Kg wet	125		100	82.4-116.8	1.67	30	
Selenium	75.0	10	mg/Kg wet	77.9		96.3	79.3-120.7	0.0673	30	
Silver	36.0	1.0	mg/Kg wet	34.3		105	81-119.2	1.93	30	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257823 - SW-846 3050B										
Duplicate (B257823-DUP1)		Source: 20E0343-06			Prepared & Analyzed: 05/12/20					
Arsenic	5.94	3.7	mg/Kg dry		5.85			1.48	35	
Barium	30.6	1.8	mg/Kg dry		29.3			4.18	35	
Cadmium	ND	0.37	mg/Kg dry		ND			NC	35	
Chromium	13.5	0.73	mg/Kg dry		12.5			7.52	35	
Lead	7.96	0.55	mg/Kg dry		7.80			1.97	35	
Selenium	ND	3.7	mg/Kg dry		ND			NC	35	
Silver	ND	0.37	mg/Kg dry		ND			NC	35	
Matrix Spike (B257823-MS1)		Source: 20E0343-06			Prepared & Analyzed: 05/12/20					
Arsenic	22.8	3.7	mg/Kg dry	18.6	5.85	91.5	75-125			
Barium	48.0	1.9	mg/Kg dry	18.6	29.3	100	75-125			
Cadmium	17.7	0.37	mg/Kg dry	18.6	ND	95.1	75-125			
Chromium	31.2	0.74	mg/Kg dry	18.6	12.5	101	75-125			
Lead	26.0	0.56	mg/Kg dry	18.6	7.80	97.8	75-125			
Selenium	16.0	3.7	mg/Kg dry	18.6	ND	85.9	75-125			
Silver	19.5	0.37	mg/Kg dry	18.6	ND	105	75-125			
Reference (B257823-SRM1)		Prepared & Analyzed: 05/12/20								
Lead	0.481	0.53	mg/Kg wet	0.527		91.3	80-120			
Batch B258205 - SW-846 7471										
Blank (B258205-BLK1)		Prepared: 05/18/20 Analyzed: 05/20/20								
Mercury	ND	0.025	mg/Kg wet							
LCS (B258205-BS1)		Prepared: 05/18/20 Analyzed: 05/20/20								
Mercury	7.36	0.38	mg/Kg wet	7.61		96.8	72.7-127.3			
LCS Dup (B258205-BSD1)		Prepared: 05/18/20 Analyzed: 05/20/20								
Mercury	6.81	0.37	mg/Kg wet	7.61		89.4	72.7-127.3	7.88	20	
Batch B258216 - SW-846 3050B										
Blank (B258216-BLK1)		Prepared: 05/18/20 Analyzed: 05/19/20								
Arsenic	ND	3.3	mg/Kg wet							
Barium	ND	1.7	mg/Kg wet							
Cadmium	ND	0.33	mg/Kg wet							
Chromium	ND	0.67	mg/Kg wet							
Lead	ND	0.50	mg/Kg wet							
Selenium	ND	3.3	mg/Kg wet							
Silver	ND	0.33	mg/Kg wet							
Vanadium	ND	0.67	mg/Kg wet							

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B258216 - SW-846 3050B										
LCS (B258216-BS1)										
					Prepared: 05/18/20 Analyzed: 05/19/20					
Arsenic	137	10	mg/Kg wet	143		96.0	83.2-117.5			
Barium	414	5.0	mg/Kg wet	415		99.8	82.7-117.6			
Cadmium	54.7	1.0	mg/Kg wet	56.2		97.3	82.9-117.3			
Chromium	96.6	2.0	mg/Kg wet	101		95.7	82.4-116.8			
Lead	123	1.5	mg/Kg wet	125		98.4	82.4-116.8			
Selenium	73.0	10	mg/Kg wet	77.9		93.7	79.3-120.7			
Silver	35.4	1.0	mg/Kg wet	34.3		103	81-119.2			
Vanadium	80.2	2.0	mg/Kg wet	83.7		95.9	79.8-120.7			
LCS Dup (B258216-BSD1)										
					Prepared: 05/18/20 Analyzed: 05/19/20					
Arsenic	138	9.9	mg/Kg wet	143		96.6	83.2-117.5	0.638	30	
Barium	440	5.0	mg/Kg wet	415		106	82.7-117.6	6.07	20	
Cadmium	57.3	0.99	mg/Kg wet	56.2		102	82.9-117.3	4.72	20	
Chromium	99.5	2.0	mg/Kg wet	101		98.5	82.4-116.8	2.92	30	
Lead	124	1.5	mg/Kg wet	125		98.9	82.4-116.8	0.596	30	
Selenium	73.3	9.9	mg/Kg wet	77.9		94.1	79.3-120.7	0.409	30	
Silver	36.3	0.99	mg/Kg wet	34.3		106	81-119.2	2.60	30	
Vanadium	81.8	2.0	mg/Kg wet	83.7		97.8	79.8-120.7	1.97	30	
Reference (B258216-SRM1)										
					Prepared: 05/18/20 Analyzed: 05/19/20					
Lead	0.482	0.48	mg/Kg wet	0.477		101	80-120			

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257696 - SW-846 9045C										
LCS (B257696-BS1)				Prepared & Analyzed: 05/08/20						
pH	6.01		pH Units	6.00		100	90-110			
LCS (B257696-BS2)				Prepared & Analyzed: 05/08/20						
pH	6.02		pH Units	6.00		100	90-110			
Batch B257718 - % Solids										
Duplicate (B257718-DUP1)		Source: 20E0343-01			Prepared & Analyzed: 05/11/20					
% Solids	63.9		% Wt			65.5		2.57	20	
Batch B258130 - SW-846 9014										
Blank (B258130-BLK1)				Prepared: 05/15/20 Analyzed: 05/16/20						
Reactive Cyanide	ND	0.40	mg/Kg							
LCS (B258130-BS1)				Prepared: 05/15/20 Analyzed: 05/16/20						
Reactive Cyanide	11	0.40	mg/Kg	10.0		107	83.2-115			
Batch B258131 - SW-846 9030A										
Blank (B258131-BLK1)				Prepared: 05/15/20 Analyzed: 05/16/20						
Reactive Sulfide	ND	2.0	mg/Kg							
LCS (B258131-BS1)				Prepared: 05/15/20 Analyzed: 05/16/20						
Reactive Sulfide	14	2.0	mg/Kg	14.8		94.6	71.6-120			

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QUALITY CONTROL

TCLP - Metals Analyses - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B257838 - SW-846 7470A Prep										
Blank (B257838-BLK1)				Prepared: 05/12/20 Analyzed: 05/13/20						
Mercury	ND	0.00010	mg/L							
LCS (B257838-BS1)				Prepared: 05/12/20 Analyzed: 05/13/20						
Mercury	0.00385	0.00010	mg/L	0.00400		96.2	80-120			
LCS Dup (B257838-BSD1)				Prepared: 05/12/20 Analyzed: 05/13/20						
Mercury	0.00390	0.00010	mg/L	0.00400		97.6	80-120	1.39	20	
Matrix Spike (B257838-MS1)				Source: 20E0343-01		Prepared: 05/12/20 Analyzed: 05/13/20				
Mercury	0.00380	0.00010	mg/L	0.00400	ND	94.9	75-125			
Batch B257841 - SW-846 3010A										
Blank (B257841-BLK1)				Prepared & Analyzed: 05/12/20						
Arsenic	ND	0.050	mg/L							
Vanadium	ND	0.010	mg/L							
Barium	ND	0.50	mg/L							
Cadmium	ND	0.010	mg/L							
Chromium	ND	0.050	mg/L							
Lead	ND	0.10	mg/L							
Selenium	ND	0.050	mg/L							
Silver	ND	0.050	mg/L							
LCS (B257841-BS1)				Prepared & Analyzed: 05/12/20						
Arsenic	0.548	0.050	mg/L	0.500		110	80-120			
Vanadium	0.525	0.010	mg/L	0.500		105	80-120			
Barium	0.513	0.50	mg/L	0.500		103	80-120			
Cadmium	0.525	0.010	mg/L	0.500		105	80-120			
Chromium	0.511	0.050	mg/L	0.500		102	80-120			
Lead	0.540	0.10	mg/L	0.500		108	80-120			
Selenium	0.602	0.050	mg/L	0.500		120	80-120			
Silver	0.571	0.050	mg/L	0.500		114	80-120			
LCS Dup (B257841-BSD1)				Prepared & Analyzed: 05/12/20						
Arsenic	0.527	0.050	mg/L	0.500		105	80-120	4.03	20	
Vanadium	0.516	0.010	mg/L	0.500		103	80-120	1.60	20	
Barium	0.503	0.50	mg/L	0.500		101	80-120	1.89	20	
Cadmium	0.517	0.010	mg/L	0.500		103	80-120	1.47	20	
Chromium	0.502	0.050	mg/L	0.500		100	80-120	1.77	20	
Lead	0.523	0.10	mg/L	0.500		105	80-120	3.11	20	
Selenium	0.621	0.050	mg/L	0.500		124 *	80-120	3.09	20	L-07
Silver	0.587	0.050	mg/L	0.500		117	80-120	2.67	20	

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**

LF-1

SW-846 8082A

Lab Sample ID: 20E0343-01 Date(s) Analyzed: 05/14/2020 05/14/2020

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): ID: _____ (mm) GC Column (2): ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	-0.030	0.030	0.38	
	2	0.000	-0.030	0.030	0.35	8.2

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
SW-846 8082A

LF-2

Lab Sample ID: 20E0343-02 Date(s) Analyzed: 05/14/2020 05/14/2020

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	-0.030	0.030	0.45	
	2	0.000	-0.030	0.030	0.47	4.4
Aroclor-1260	1	0.000	-0.030	0.030	0.20	
	2	0.000	-0.030	0.030	0.18	10.5

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
SW-846 8082A

LF-3

Lab Sample ID: 20E0343-03 Date(s) Analyzed: 05/14/2020 05/14/2020

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	-0.030	0.030	0.33	
	2	0.000	-0.030	0.030	0.38	14.1
Aroclor-1260	1	0.000	-0.030	0.030	0.18	
	2	0.000	-0.030	0.030	0.16	11.8

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
SW-846 8082A

LF-4

Lab Sample ID: 20E0343-04 Date(s) Analyzed: 05/14/2020 05/14/2020

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	-0.030	0.030	0.33	
	2	0.000	-0.030	0.030	0.38	14.1
Aroclor-1260	1	0.000	-0.030	0.030	0.19	
	2	0.000	-0.030	0.030	0.16	17.1

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES**
SW-846 8082A

Duplicate

Lab Sample ID: 20E0343-05 Date(s) Analyzed: 05/14/2020 05/14/2020

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1254	1	0.000	-0.030	0.030	0.67	
	2	0.000	-0.030	0.030	0.67	0.0
Aroclor-1260	1	0.000	-0.030	0.030	0.56	
	2	0.000	-0.030	0.030	0.47	17.5

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
L-02	Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
MS-07A	Matrix spike and spike duplicate recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possibility of matrix effects that lead to low bias or non-homogeneous sample aliquot cannot be eliminated.
PR-03	Sample preserved in the laboratory, not in the field as required by the method.
RL-12	Elevated reporting limit due to matrix interference.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.
V-06	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-34	Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
V-35	Initial calibration verification (ICV) did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 1030 in Soil	
Ignitability	NY,NH,CT,NC,ME,VA
SW-846 6010D in Soil	
Arsenic	CT,NH,NY,ME,VA,NC
Barium	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,AIHA,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
Vanadium	CT,NH,NY,ME,VA,NC
SW-846 6010D in Water	
Arsenic	NY,CT,NC,ME,NH,VA
Vanadium	CT,ME,NC,NH,NY,VA
Barium	NY,CT,ME,NC,NH,VA
Cadmium	NY,CT,ME,NC,NH,VA
Chromium	NY,CT,ME,NC,NH,VA
Lead	NY,CT,ME,NC,NH,VA
Selenium	CT,ME,NC,NH,NY,VA
Silver	CT,ME,NC,NH,NY,VA
SW-846 7470A in Water	
Mercury	CT,ME,NC,NH,NY,VA
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 8082A in Soil	
Aroclor-1016	CT,NH,NY,ME,NC,VA,PA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221	CT,NH,NY,ME,NC,VA,PA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232	CT,NH,NY,ME,NC,VA,PA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242	CT,NH,NY,ME,NC,VA,PA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248	CT,NH,NY,ME,NC,VA,PA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254	CT,NH,NY,ME,NC,VA,PA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260	CT,NH,NY,ME,NC,VA,PA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA,PA
Aroclor-1262	NY,NC,VA,PA
Aroclor-1262 [2C]	NY,NC,VA,PA
Aroclor-1268	NY,NC,VA,PA
Aroclor-1268 [2C]	NY,NC,VA,PA
SW-846 8260C-D in Soil	
Acetone	CT,NH,NY,ME,VA
Acetone	CT,NH,NY,ME,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C-D in Soil</i>	
Acrylonitrile	CT,NH,NY,ME,VA
Acrylonitrile	CT,NH,NY,ME,VA
Benzene	CT,NH,NY,ME,VA
Benzene	CT,NH,NY,ME,VA
Bromobenzene	NH,NY,ME,VA
Bromobenzene	NH,NY,ME,VA
Bromochloromethane	NH,NY,ME,VA
Bromochloromethane	NH,NY,ME,VA
Bromodichloromethane	CT,NH,NY,ME,VA
Bromodichloromethane	CT,NH,NY,ME,VA
Bromoform	CT,NH,NY,ME,VA
Bromoform	CT,NH,NY,ME,VA
Bromomethane	CT,NH,NY,ME,VA
Bromomethane	CT,NH,NY,ME,VA
2-Butanone (MEK)	CT,NH,NY,ME,VA
2-Butanone (MEK)	CT,NH,NY,ME,VA
tert-Butyl Alcohol (TBA)	NY,ME
n-Butylbenzene	CT,NH,NY,ME,VA
n-Butylbenzene	CT,NH,NY,ME,VA
sec-Butylbenzene	CT,NH,NY,ME,VA
sec-Butylbenzene	CT,NH,NY,ME,VA
tert-Butylbenzene	CT,NH,NY,ME,VA
tert-Butylbenzene	CT,NH,NY,ME,VA
Carbon Disulfide	CT,NH,NY,ME,VA
Carbon Disulfide	CT,NH,NY,ME,VA
Carbon Tetrachloride	CT,NH,NY,ME,VA
Carbon Tetrachloride	CT,NH,NY,ME,VA
Chlorobenzene	CT,NH,NY,ME,VA
Chlorobenzene	CT,NH,NY,ME,VA
Chlorodibromomethane	CT,NH,NY,ME,VA
Chlorodibromomethane	CT,NH,NY,ME,VA
Chloroethane	CT,NH,NY,ME,VA
Chloroethane	CT,NH,NY,ME,VA
Chloroform	CT,NH,NY,ME,VA
Chloroform	CT,NH,NY,ME,VA
Chloromethane	CT,NH,NY,ME,VA
Chloromethane	CT,NH,NY,ME,VA
2-Chlorotoluene	CT,NH,NY,ME,VA
2-Chlorotoluene	CT,NH,NY,ME,VA
4-Chlorotoluene	CT,NH,NY,ME,VA
4-Chlorotoluene	CT,NH,NY,ME,VA
1,2-Dibromo-3-chloropropane (DBCP)	NY,ME
1,2-Dibromo-3-chloropropane (DBCP)	NY
1,2-Dibromoethane (EDB)	NH,NY
1,2-Dibromoethane (EDB)	NH,NY
Dibromomethane	NH,NY,ME,VA
Dibromomethane	NH,NY,ME,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C-D in Soil</i>	
1,2-Dichlorobenzene	CT,NH,NY,ME,VA
1,2-Dichlorobenzene	CT,NH,NY,ME,VA
1,3-Dichlorobenzene	CT,NH,NY,ME,VA
1,3-Dichlorobenzene	CT,NH,NY,ME,VA
1,4-Dichlorobenzene	CT,NH,NY,ME,VA
1,4-Dichlorobenzene	CT,NH,NY,ME,VA
trans-1,4-Dichloro-2-butene	NY,ME
Dichlorodifluoromethane (Freon 12)	NH,NY,ME,VA
Dichlorodifluoromethane (Freon 12)	NY,ME,VA
1,1-Dichloroethane	CT,NH,NY,ME,VA
1,1-Dichloroethane	CT,NH,NY,ME,VA
1,2-Dichloroethane	CT,NH,NY,ME,VA
1,2-Dichloroethane	CT,NH,NY,ME,VA
1,1-Dichloroethylene	CT,NH,NY,ME,VA
1,1-Dichloroethylene	CT,NH,NY,ME,VA
cis-1,2-Dichloroethylene	CT,NH,NY,ME,VA
cis-1,2-Dichloroethylene	CT,NH,NY,ME,VA
trans-1,2-Dichloroethylene	CT,NH,NY,ME,VA
trans-1,2-Dichloroethylene	CT,NH,NY,ME,VA
1,2-Dichloropropane	CT,NH,NY,ME,VA
1,2-Dichloropropane	CT,NH,NY,ME,VA
1,3-Dichloropropane	NH,NY,ME,VA
1,3-Dichloropropane	NH,NY,ME,VA
2,2-Dichloropropane	NH,NY,ME,VA
2,2-Dichloropropane	NH,NY,ME,VA
1,1-Dichloropropene	NH,NY,ME,VA
1,1-Dichloropropene	NH,NY,ME,VA
cis-1,3-Dichloropropene	CT,NH,NY,ME,VA
cis-1,3-Dichloropropene	CT,NH,NY,ME,VA
trans-1,3-Dichloropropene	CT,NH,NY,ME,VA
trans-1,3-Dichloropropene	CT,NH,NY,ME,VA
Diethyl Ether	ME
1,4-Dioxane	NY,ME
Ethylbenzene	CT,NH,NY,ME,VA
Ethylbenzene	CT,NH,NY,ME,VA
Hexachlorobutadiene	NH,NY,ME,VA
Hexachlorobutadiene	NH,NY,ME,VA
2-Hexanone (MBK)	CT,NH,NY,ME,VA
2-Hexanone (MBK)	CT,NH,NY,ME,VA
Isopropylbenzene (Cumene)	CT,NH,NY,ME,VA
Isopropylbenzene (Cumene)	CT,NH,NY,ME,VA
p-Isopropyltoluene (p-Cymene)	NH,NY
p-Isopropyltoluene (p-Cymene)	NH,NY
Methyl Acetate	NY,ME
Methyl tert-Butyl Ether (MTBE)	NY,VA
Methyl tert-Butyl Ether (MTBE)	NY,ME,VA
Methyl Cyclohexane	NY

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8260C-D in Soil</i>	
Methylene Chloride	CT,NH,NY,ME,VA
Methylene Chloride	CT,NH,NY,ME,VA
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,ME,VA
4-Methyl-2-pentanone (MIBK)	CT,NH,NY,VA
Naphthalene	NH,NY,ME,VA
Naphthalene	NH,NY,ME,VA
n-Propylbenzene	NH,NY
n-Propylbenzene	NH,NY,ME
Styrene	CT,NH,NY,ME,VA
Styrene	CT,NH,NY,ME,VA
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,1,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME,VA
1,1,2,2-Tetrachloroethane	CT,NH,NY,ME,VA
Tetrachloroethylene	CT,NH,NY,ME,VA
Tetrachloroethylene	CT,NH,NY,ME,VA
Toluene	CT,NH,NY,ME,VA
Toluene	CT,NH,NY,ME,VA
1,2,3-Trichlorobenzene	NY,ME
1,2,4-Trichlorobenzene	NH,NY,ME,VA
1,2,4-Trichlorobenzene	NH,NY,ME,VA
1,3,5-Trichlorobenzene	ME
1,1,1-Trichloroethane	CT,NH,NY,ME,VA
1,1,1-Trichloroethane	CT,NH,NY,ME,VA
1,1,2-Trichloroethane	CT,NH,NY,ME,VA
1,1,2-Trichloroethane	CT,NH,NY,ME,VA
Trichloroethylene	CT,NH,NY,ME,VA
Trichloroethylene	CT,NH,NY,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NH,NY,ME,VA
Trichlorofluoromethane (Freon 11)	CT,NH,NY,VA
1,2,3-Trichloropropane	NH,NY,ME,VA
1,2,3-Trichloropropane	NH,NY,ME,VA
1,2,4-Trimethylbenzene	CT,NH,NY,ME,VA
1,2,4-Trimethylbenzene	CT,NH,NY,ME,VA
1,3,5-Trimethylbenzene	CT,NH,NY,ME,VA
1,3,5-Trimethylbenzene	CT,NH,NY,ME,VA
Vinyl Chloride	CT,NH,NY,ME,VA
Vinyl Chloride	CT,NH,NY,ME,VA
m+p Xylene	CT,NH,NY,ME,VA
m+p Xylene	CT,NH,NY,ME,VA
o-Xylene	CT,NH,NY,ME,VA
o-Xylene	CT,NH,NY,ME,VA
<i>SW-846 8270D-E in Soil</i>	
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthene	CT,NY,NH,ME,NC,VA
Acenaphthylene	CT,NY,NH,ME,NC,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D-E in Soil</i>	
Acenaphthylene	CT,NY,NH,ME,NC,VA
Acetophenone	NY,NH,ME,NC,VA
Aniline	NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Anthracene	CT,NY,NH,ME,NC,VA
Benzidine	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)anthracene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(a)pyrene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(b)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(g,h,i)perylene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Benzo(k)fluoranthene	CT,NY,NH,ME,NC,VA
Benzoic Acid	NY,NH,ME,NC,VA
Bis(2-chloroethoxy)methane	CT,NY,NH,ME,NC,VA
Bis(2-chloroethyl)ether	CT,NY,NH,ME,NC,VA
Bis(2-chloroisopropyl)ether	CT,NY,NH,ME,NC,VA
Bis(2-Ethylhexyl)phthalate	CT,NY,NH,ME,NC,VA
4-Bromophenylphenylether	CT,NY,NH,ME,NC,VA
Butylbenzylphthalate	CT,NY,NH,ME,NC,VA
Carbazole	NC
4-Chloroaniline	CT,NY,NH,ME,NC,VA
4-Chloro-3-methylphenol	CT,NY,NH,ME,NC,VA
2-Chloronaphthalene	CT,NY,NH,NC,VA
2-Chlorophenol	CT,NY,NH,ME,NC,VA
4-Chlorophenylphenylether	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Chrysene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Dibenz(a,h)anthracene	CT,NY,NH,ME,NC,VA
Dibenzofuran	CT,NY,NH,ME,NC,VA
Di-n-butylphthalate	CT,NY,NH,ME,NC,VA
1,2-Dichlorobenzene	NY,NH,ME,NC,VA
1,3-Dichlorobenzene	NY,NH,ME,NC,VA
1,4-Dichlorobenzene	NY,NH,ME,NC,VA
3,3-Dichlorobenzidine	CT,NY,NH,ME,NC,VA
2,4-Dichlorophenol	CT,NY,NH,ME,NC,VA
Diethylphthalate	CT,NY,NH,ME,NC,VA
2,4-Dimethylphenol	CT,NY,NH,ME,NC,VA
Dimethylphthalate	CT,NY,NH,ME,NC,VA
4,6-Dinitro-2-methylphenol	CT,NY,NH,ME,NC,VA
2,4-Dinitrophenol	CT,NY,NH,ME,NC,VA
2,4-Dinitrotoluene	CT,NY,NH,ME,NC,VA
2,6-Dinitrotoluene	CT,NY,NH,ME,NC,VA

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8270D-E in Soil</i>	
Di-n-octylphthalate	CT,NY,NH,ME,NC,VA
1,2-Diphenylhydrazine/Azobenzene	NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluoranthene	CT,NY,NH,ME,NC,VA
Fluorene	NY,NH,ME,NC,VA
Fluorene	CT,NY,NH,ME,NC,VA
Hexachlorobenzene	CT,NY,NH,ME,NC,VA
Hexachlorobutadiene	CT,NY,NH,ME,NC,VA
Hexachlorocyclopentadiene	CT,NY,NH,ME,NC,VA
Hexachloroethane	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
Indeno(1,2,3-cd)pyrene	CT,NY,NH,ME,NC,VA
Isophorone	CT,NY,NH,ME,NC,VA
1-Methylnaphthalene	NC
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
2-Methylnaphthalene	CT,NY,NH,ME,NC,VA
2-Methylphenol	CT,NY,NH,ME,NC,VA
3/4-Methylphenol	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
Naphthalene	CT,NY,NH,ME,NC,VA
2-Nitroaniline	CT,NY,NH,ME,NC,VA
3-Nitroaniline	CT,NY,NH,ME,NC,VA
4-Nitroaniline	CT,NY,NH,ME,NC,VA
Nitrobenzene	CT,NY,NH,ME,NC,VA
2-Nitrophenol	CT,NY,NH,ME,NC,VA
4-Nitrophenol	CT,NY,NH,ME,NC,VA
N-Nitrosodimethylamine	CT,NY,NH,ME,NC,VA
N-Nitrosodi-n-propylamine	CT,NY,NH,ME,NC,VA
Pentachloronitrobenzene	NY,NC
Pentachlorophenol	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Phenanthrene	CT,NY,NH,ME,NC,VA
Phenol	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA
Pyrene	CT,NY,NH,ME,NC,VA
Pyridine	CT,NY,NH,ME,NC,VA
1,2,4,5-Tetrachlorobenzene	NY,NC
1,2,4-Trichlorobenzene	CT,NY,NH,ME,NC,VA
2,4,5-Trichlorophenol	CT,NY,NH,ME,NC,VA
2,4,6-Trichlorophenol	CT,NY,NH,ME,NC,VA
2-Fluorophenol	NC

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Public Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2021
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2021
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021

20E0343



Phone: 413-525-2332
 Fax: 413-525-6405
 Email: info@contestlabs.com

Address: **21 N. Main St. #1 Waterbury VT**
 Phone: **(802) 919-2001**
 Project Location: **Long Falls Paperboard**
161 Wellington St. Burlington VT
18-122

Project Manager: **Alan Lipstak**
 Con-Test Quote Name/Number: **ALON B-20191126**
 Invoice Recipient: **ALON BIPSTAK**
 Sampled By: **ALON BIPSTAK**

http://www.contestlabs.com
 CHAIN OF CUSTODY RECORD
 39 Spruce Street
 East Longmeadow, MA 01028
 Doc # 381 Rev 2_06262019

Page 2 of 2

ANALYSIS REQUESTED

Requested Method	7-Day PFAS 10-Day (std)	10-Day Due Date	Field Filtered	Lab to Filter	Orthophosphate Samples	Field Filtered	Lab to Filter	Matrix Code	COMP/GRAB	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	Preservation Code	Total Number Of: <small>Calculated Use Only</small>
LF-5	<input checked="" type="checkbox"/>	0915	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S	G	3	F					VIALS GLASS PLASTIC BACTERIA ENCORE
LF-6	<input checked="" type="checkbox"/>	0945	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S	G	3	I					
LF-7	<input checked="" type="checkbox"/>	1020	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S	G	3	I					

VOCs M8260
 PAH M8070
 PCBs M8080 Soxhlet
 RCRA Metals 6020

Format: PDF EXCEL
 Other:
 CLP Like Data Pkg Required:
 Email To: **USEPA Brownfields JV**
 Fax To #:

Total metals only (No TcP)

Relinquished by (signature): **[Signature]** Date/Time: 5/8/20
 Received by (signature): **[Signature]** Date/Time: 5/8/20 12:45
 Relinquished by (signature): **[Signature]** Date/Time: 7/8/20
 Received by (signature): **[Signature]** Date/Time: 7/8/20 14:30
 Relinquished by (signature): **[Signature]** Date/Time: 11/30
 Received by (signature): **[Signature]** Date/Time: 11/30
 Relinquished by (signature): **[Signature]** Date/Time: 11/30
 Received by (signature): **[Signature]** Date/Time: 11/30

MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DM Required
 Project Entity: **Vermont**
 Government Federal City
 Municipality 21 J Brownfield
 MWRA School MBTA
 WRTA
 Other: Chromatogram AHA-LAP, LLC

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)

Glassware in the fridge? Y/N
 Glassware in freezer? Y/N
 Prepackaged Cooler? Y/N
 *Contest is not responsible for missing samples from prepackaged coolers

PCB ONLY
 Soxhlet
 Non Soxhlet

Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test[®]
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client LE Environmental
 Received By SA Date 5/8 Time 1430

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 4.8, 2.8
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? T Who was notified? David

Is there enough Volume? T
 Is there Headspace where applicable? F MS/MSD? F
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? F
 Do all samples have the proper pH? Acid NA Base NA

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb. 20
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear 8
Meoh-	3	250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-	6	Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:



Your Project #: 20E0343
Your C.O.C. #: n/a

Attention: Raymond McCarthy

Con-Test Analytical Laboratory
39 Spruce Street
East Longmeadow, MA
USA 01028

Report Date: 2020/07/16
Report #: R6248703
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: COB6931

Received: 2020/05/13, 12:27

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Moisture	5	N/A	2020/05/16	CAM SOP-00445	Carter 2nd ed 51.2 m
PFAS in soil by SPE/LCMS (1)	5	2020/05/19	2020/05/20	CAM SOP-00894	ASTM D7968-17a m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Per- and polyfluoroalkyl substances (PFAS) identified as surrogates on the certificate of analysis represent the extracted internal standard.

U = Undetected at the limit of quantitation.

J = Estimated concentration between the EDL & RDL.

B = Blank Contamination.

Q = One or more quality control criteria failed.

E = Analyte concentration exceeds the maximum concentration level.

K = Estimated maximum possible concentration due to ion abundance ratio failure.



Your Project #: 20E0343
Your C.O.C. #: n/a

Attention: Raymond McCarthy

Con-Test Analytical Laboratory
39 Spruce Street
East Longmeadow, MA
USA 01028

Report Date: 2020/07/16
Report #: R6248703
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BV LABS JOB #: C0B6931

Received: 2020/05/13, 12:27

Encryption Key

Stephanie Pollen
Project Manager
16 Jul 2020 12:25:38

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Stephanie Pollen, Project Manager
Email: Stephanie.Pollen@bvlabs.com
Phone# (905)817-5830

=====
BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU
VERITAS

BV Labs Job #: COB6931
Report Date: 2020/07/16

Con-Test Analytical Laboratory
Client Project #: 20E0343

RESULTS OF ANALYSES OF SOIL

BV Labs ID		MPW687	MPW688	MPW689	MPW690	MPW691			
Sampling Date		2020/05/08 11:35	2020/05/08 11:15	2020/05/08 11:00	2020/05/08 10:45	2020/05/08 11:15			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	20E0343-01	20E0343-02	20E0343-03	20E0343-04	20E0343-05	RDL	MDL	QC Batch
Inorganics									
Moisture	%	34	34	42	46	33	1.0	0.50	6729165
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

BUREAU
VERITASBV Labs Job #: COB6931
Report Date: 2020/07/16Con-Test Analytical Laboratory
Client Project #: 20E0343

PERFLUOROALKYL SUBSTANCES (SOIL)

BV Labs ID		MPW687			MPW688			MPW689			
Sampling Date		2020/05/08 11:35			2020/05/08 11:15			2020/05/08 11:00			
COC Number		n/a			n/a			n/a			
	UNITS	20E0343-01	RDL	MDL	20E0343-02	RDL	MDL	20E0343-03	RDL	MDL	QC Batch
Perfluorinated Compounds											
Perfluorobutanoic acid (PFBA)	ug/kg	0.24 U	2.0	0.24	0.24 U	2.0	0.24	0.24 U	2.0	0.24	6729912
Perfluoropentanoic acid (PFPeA)	ug/kg	0.74 J	2.0	0.20	0.91 J	2.0	0.20	0.86 J	2.0	0.20	6729912
Perfluorohexanoic acid (PFHxA)	ug/kg	0.70 J	2.0	0.28	1.8 J	2.0	0.28	1.8 J	2.0	0.28	6729912
Perfluoroheptanoic acid (PFHpA)	ug/kg	2.8	2.0	0.36	8.3	2.0	0.36	4.9	2.0	0.36	6729912
Perfluorooctanoic acid (PFOA)	ug/kg	46	2.0	0.32	68 (1)	20	3.2	52	2.0	0.32	6729912
Perfluorononanoic acid (PFNA)	ug/kg	21	2.0	0.30	15	2.0	0.30	15	2.0	0.30	6729912
Perfluorodecanoic acid (PFDA)	ug/kg	67 (1)	20	6.2	63	2.0	0.62	67	2.0	0.62	6729912
Perfluoroundecanoic acid (PFUnA)	ug/kg	8.3	2.0	0.30	6.8	2.0	0.30	7.6	2.0	0.30	6729912
Perfluorododecanoic acid (PFDoA)	ug/kg	19	2.0	0.38	18	2.0	0.38	20	2.0	0.38	6729912
Perfluorotridecanoic acid (PFTRDA)	ug/kg	2.7	2.0	0.34	2.4	2.0	0.34	2.9	2.0	0.34	6729912
Perfluorotetradecanoic acid (PFTEDA)	ug/kg	5.1	2.0	0.30	4.4	2.0	0.30	5.6	2.0	0.30	6729912
Perfluorobutanesulfonic acid (PFBS)	ug/kg	0.28 U	2.0	0.28	0.28 U	2.0	0.28	0.28 U	2.0	0.28	6729912
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	0.40 U	2.0	0.40	0.40 U	2.0	0.40	0.40 U	2.0	0.40	6729912
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	0.28 U	2.0	0.28	0.28 U	2.0	0.28	0.28 U	2.0	0.28	6729912
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	0.17 U	2.0	0.17	0.17 U	2.0	0.17	0.17 U	2.0	0.17	6729912
Perfluorooctanesulfonic acid (PFOS)	ug/kg	27	2.0	0.42	19	2.0	0.42	24	2.0	0.42	6729912
Perfluorononanesulfonic acid (PFNS)	ug/kg	0.46 U	2.0	0.46	0.46 U	2.0	0.46	0.46 U	2.0	0.46	6729912
Perfluorodecanesulfonic acid (PFDS)	ug/kg	0.54 U	2.0	0.54	0.54 U	2.0	0.54	0.54 U	2.0	0.54	6729912
Perfluorooctane Sulfonamide (PFOSA)	ug/kg	6.5	2.0	0.38	3.5	2.0	0.38	3.0	2.0	0.38	6729912
EtFOSA	ug/kg	0.62 U	2.0	0.62	0.62 U	2.0	0.62	0.62 U	2.0	0.62	6729912
MeFOSA	ug/kg	0.56 U	2.0	0.56	0.56 U	2.0	0.56	0.56 U	2.0	0.56	6729912
EtFOSE	ug/kg	0.98 J	2.0	0.54	0.65 J	2.0	0.54	1.3 J	2.0	0.54	6729912
MeFOSE	ug/kg	0.34 U	2.0	0.34	0.34 U	2.0	0.34	0.34 U	2.0	0.34	6729912
EtFOSAA	ug/kg	56	2.0	0.64	64	2.0	0.64	70 (1)	20	6.4	6729912
MeFOSAA	ug/kg	5.8	2.0	0.60	6.5	2.0	0.60	8.6	2.0	0.60	6729912
4:2 Fluorotelomer sulfonic acid	ug/kg	0.44 U	2.0	0.44	0.44 U	2.0	0.44	0.44 U	2.0	0.44	6729912
6:2 Fluorotelomer sulfonic acid	ug/kg	0.26 U	2.0	0.26	0.26 U	2.0	0.26	0.26 U	2.0	0.26	6729912
8:2 Fluorotelomer sulfonic acid	ug/kg	0.66 U	2.0	0.66	0.66 U	2.0	0.66	0.66 U	2.0	0.66	6729912
Hexafluoropropyleneoxide dimer acid	ug/kg	0.66 U	2.0	0.66	0.66 U	2.0	0.66	0.66 U	2.0	0.66	6729912
4,8-Dioxo-3H-perfluorononanoic acid	ug/kg	0.40 U	2.0	0.40	0.40 U	2.0	0.40	0.40 U	2.0	0.40	6729912
9Cl-PF3ONS (F-53B Major)	ug/kg	0.38 U	2.0	0.38	0.38 U	2.0	0.38	0.38 U	2.0	0.38	6729912
11Cl-PF3OUdS (F-53B Minor)	ug/kg	0.40 U	2.0	0.40	0.40 U	2.0	0.40	0.40 U	2.0	0.40	6729912
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											
(1) Due to high concentration of the target analyte, sample required dilution. Detection limit was adjusted accordingly.											



BV Labs Job #: COB6931
Report Date: 2020/07/16

Con-Test Analytical Laboratory
Client Project #: 20E0343

PERFLUOROALKYL SUBSTANCES (SOIL)

BV Labs ID		MPW687			MPW688			MPW689			
Sampling Date		2020/05/08 11:35			2020/05/08 11:15			2020/05/08 11:00			
COC Number		n/a			n/a			n/a			
	UNITS	20E0343-01	RDL	MDL	20E0343-02	RDL	MDL	20E0343-03	RDL	MDL	QC Batch

Surrogate Recovery (%)

13C2-4:2-Fluorotelomersulfonic Acid	%	99	N/A	N/A	102	N/A	N/A	95	N/A	N/A	6729912
13C2-6:2-Fluorotelomersulfonic Acid	%	111	N/A	N/A	114	N/A	N/A	114	N/A	N/A	6729912
13C2-8:2-Fluorotelomersulfonic Acid	%	112	N/A	N/A	112	N/A	N/A	116	N/A	N/A	6729912
13C2-Perfluorodecanoic acid	%	110	N/A	N/A	105	N/A	N/A	104	N/A	N/A	6729912
13C2-Perfluorododecanoic acid	%	93	N/A	N/A	97	N/A	N/A	96	N/A	N/A	6729912
13C2-Perfluorohexanoic acid	%	105	N/A	N/A	111	N/A	N/A	106	N/A	N/A	6729912
13C2-perfluorotetradecanoic acid	%	70	N/A	N/A	66	N/A	N/A	58	N/A	N/A	6729912
13C2-Perfluoroundecanoic acid	%	102	N/A	N/A	108	N/A	N/A	106	N/A	N/A	6729912
13C3-HFPO-DA	%	87	N/A	N/A	82	N/A	N/A	85	N/A	N/A	6729912
13C3-Perfluorobutanesulfonic acid	%	90	N/A	N/A	93	N/A	N/A	90	N/A	N/A	6729912
13C4-Perfluorobutanoic acid	%	89	N/A	N/A	94	N/A	N/A	94	N/A	N/A	6729912
13C4-Perfluoroheptanoic acid	%	109	N/A	N/A	111	N/A	N/A	109	N/A	N/A	6729912
13C4-Perfluorooctanesulfonic acid	%	93	N/A	N/A	95	N/A	N/A	93	N/A	N/A	6729912
13C4-Perfluorooctanoic acid	%	104	N/A	N/A	116	N/A	N/A	110	N/A	N/A	6729912
13C5-Perfluorononanoic acid	%	103	N/A	N/A	110	N/A	N/A	111	N/A	N/A	6729912
13C5-Perfluoropentanoic acid	%	95	N/A	N/A	102	N/A	N/A	100	N/A	N/A	6729912
13C8-Perfluorooctane Sulfonamide	%	103	N/A	N/A	107	N/A	N/A	108	N/A	N/A	6729912
18O2-Perfluorohexanesulfonic acid	%	90	N/A	N/A	94	N/A	N/A	90	N/A	N/A	6729912
D3-MeFOSA	%	58	N/A	N/A	56	N/A	N/A	51	N/A	N/A	6729912
D3-MeFOSAA	%	89	N/A	N/A	97	N/A	N/A	97	N/A	N/A	6729912
D5-EtFOSA	%	49 (1)	N/A	N/A	45 (1)	N/A	N/A	42 (1)	N/A	N/A	6729912
D5-EtFOSAA	%	91	N/A	N/A	98	N/A	N/A	105	N/A	N/A	6729912
D7-MeFOSE	%	47 (2)	N/A	N/A	46 (2)	N/A	N/A	39 (2)	N/A	N/A	6729912
D9-EtFOSE	%	37 (3)	N/A	N/A	35 (3)	N/A	N/A	29 (3)	N/A	N/A	6729912

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (EtFOSA).

(2) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (MeFOSE).

(3) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (EtFOSE).



BUREAU

VERITAS

BV Labs Job #: COB6931

Report Date: 2020/07/16

Con-Test Analytical Laboratory

Client Project #: 20E0343

PERFLUOROALKYL SUBSTANCES (SOIL)

BV Labs ID		MPW690			MPW691			
Sampling Date		2020/05/08 10:45			2020/05/08 11:15			
COC Number		n/a			n/a			
	UNITS	20E0343-04	RDL	MDL	20E0343-05	RDL	MDL	QC Batch
Perfluorinated Compounds								
Perfluorobutanoic acid (PFBA)	ug/kg	0.24 U	2.0	0.24	0.24 U	2.0	0.24	6729912
Perfluoropentanoic acid (PFPeA)	ug/kg	2.4	2.0	0.20	0.74 J	2.0	0.20	6729912
Perfluorohexanoic acid (PFHxA)	ug/kg	5.1	2.0	0.28	1.4 J	2.0	0.28	6729912
Perfluoroheptanoic acid (PFHpA)	ug/kg	13	2.0	0.36	6.3	2.0	0.36	6729912
Perfluorooctanoic acid (PFOA)	ug/kg	73 (1)	20	3.2	61 (1)	20	3.2	6729912
Perfluorononanoic acid (PFNA)	ug/kg	27	2.0	0.30	13	2.0	0.30	6729912
Perfluorodecanoic acid (PFDA)	ug/kg	85 (1)	20	6.2	54	2.0	0.62	6729912
Perfluoroundecanoic acid (PFUnA)	ug/kg	15	2.0	0.30	6.2	2.0	0.30	6729912
Perfluorododecanoic acid (PFDoA)	ug/kg	35	2.0	0.38	16	2.0	0.38	6729912
Perfluorotridecanoic acid (PFTRDA)	ug/kg	6.4	2.0	0.34	2.3	2.0	0.34	6729912
Perfluorotetradecanoic acid (PFTEDA)	ug/kg	10	2.0	0.30	4.2	2.0	0.30	6729912
Perfluorobutanesulfonic acid (PFBS)	ug/kg	0.28 U	2.0	0.28	0.28 U	2.0	0.28	6729912
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	0.40 U	2.0	0.40	0.40 U	2.0	0.40	6729912
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	0.28 U	2.0	0.28	0.28 U	2.0	0.28	6729912
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	0.17 U	2.0	0.17	0.17 U	2.0	0.17	6729912
Perfluorooctanesulfonic acid (PFOS)	ug/kg	39	2.0	0.42	16	2.0	0.42	6729912
Perfluorononanesulfonic acid (PFNS)	ug/kg	0.46 U	2.0	0.46	0.46 U	2.0	0.46	6729912
Perfluorodecanesulfonic acid (PFDS)	ug/kg	0.54 U	2.0	0.54	0.54 U	2.0	0.54	6729912
Perfluorooctane Sulfonamide (PFOSA)	ug/kg	11	2.0	0.38	3.3	2.0	0.38	6729912
EtFOSA	ug/kg	0.62 U	2.0	0.62	0.62 U	2.0	0.62	6729912
MeFOSA	ug/kg	0.56 U	2.0	0.56	0.56 U	2.0	0.56	6729912
EtFOSE	ug/kg	5.1	2.0	0.54	0.56 J	2.0	0.54	6729912
MeFOSE	ug/kg	0.34 U	2.0	0.34	0.34 U	2.0	0.34	6729912
EtFOSAA	ug/kg	80	2.0	0.64	57	2.0	0.64	6729912
MeFOSAA	ug/kg	11	2.0	0.60	5.5	2.0	0.60	6729912
4:2 Fluorotelomer sulfonic acid	ug/kg	0.44 U	2.0	0.44	0.44 U	2.0	0.44	6729912
6:2 Fluorotelomer sulfonic acid	ug/kg	0.26 U	2.0	0.26	0.26 U	2.0	0.26	6729912
8:2 Fluorotelomer sulfonic acid	ug/kg	0.66 U	2.0	0.66	0.66 U	2.0	0.66	6729912
Hexafluoropropyleneoxide dimer acid	ug/kg	0.66 U	2.0	0.66	0.66 U	2.0	0.66	6729912
4,8-Dioxa-3H-perfluorononanoic acid	ug/kg	0.40 U	2.0	0.40	0.40 U	2.0	0.40	6729912
9Cl-PF3ONS (F-53B Major)	ug/kg	0.38 U	2.0	0.38	0.38 U	2.0	0.38	6729912
11Cl-PF3OUdS (F-53B Minor)	ug/kg	0.40 U	2.0	0.40	0.40 U	2.0	0.40	6729912
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
(1) Due to high concentration of the target analyte, sample required dilution. Detection limit was adjusted accordingly.								



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VERITAS

BV Labs Job #: COB6931

Report Date: 2020/07/16

Con-Test Analytical Laboratory

Client Project #: 20E0343

PERFLUOROALKYL SUBSTANCES (SOIL)

BV Labs ID		MPW690			MPW691			
Sampling Date		2020/05/08 10:45			2020/05/08 11:15			
COC Number		n/a			n/a			
	UNITS	20E0343-04	RDL	MDL	20E0343-05	RDL	MDL	QC Batch
Surrogate Recovery (%)								
13C2-4:2-Fluorotelomersulfonic Acid	%	92	N/A	N/A	104	N/A	N/A	6729912
13C2-6:2-Fluorotelomersulfonic Acid	%	109	N/A	N/A	122	N/A	N/A	6729912
13C2-8:2-Fluorotelomersulfonic Acid	%	109	N/A	N/A	123	N/A	N/A	6729912
13C2-Perfluorodecanoic acid	%	112	N/A	N/A	113	N/A	N/A	6729912
13C2-Perfluorododecanoic acid	%	89	N/A	N/A	108	N/A	N/A	6729912
13C2-Perfluorohexanoic acid	%	91	N/A	N/A	116	N/A	N/A	6729912
13C2-perfluorotetradecanoic acid	%	54	N/A	N/A	72	N/A	N/A	6729912
13C2-Perfluoroundecanoic acid	%	103	N/A	N/A	117	N/A	N/A	6729912
13C3-HFPO-DA	%	78	N/A	N/A	88	N/A	N/A	6729912
13C3-Perfluorobutanesulfonic acid	%	84	N/A	N/A	97	N/A	N/A	6729912
13C4-Perfluorobutanoic acid	%	77	N/A	N/A	98	N/A	N/A	6729912
13C4-Perfluoroheptanoic acid	%	102	N/A	N/A	114	N/A	N/A	6729912
13C4-Perfluorooctanesulfonic acid	%	90	N/A	N/A	99	N/A	N/A	6729912
13C4-Perfluorooctanoic acid	%	118	N/A	N/A	117	N/A	N/A	6729912
13C5-Perfluorononanoic acid	%	104	N/A	N/A	117	N/A	N/A	6729912
13C5-Perfluoropentanoic acid	%	83	N/A	N/A	105	N/A	N/A	6729912
13C8-Perfluorooctane Sulfonamide	%	100	N/A	N/A	108	N/A	N/A	6729912
18O2-Perfluorohexanesulfonic acid	%	86	N/A	N/A	97	N/A	N/A	6729912
D3-MeFOSA	%	47 (1)	N/A	N/A	52	N/A	N/A	6729912
D3-MeFOSAA	%	92	N/A	N/A	103	N/A	N/A	6729912
D5-EtFOSA	%	40 (2)	N/A	N/A	41 (2)	N/A	N/A	6729912
D5-EtFOSAA	%	91	N/A	N/A	101	N/A	N/A	6729912
D7-MeFOSE	%	38 (3)	N/A	N/A	42 (3)	N/A	N/A	6729912
D9-EtFOSE	%	27 (4)	N/A	N/A	32 (4)	N/A	N/A	6729912
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (MeFOSA). (2) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (EtFOSA). (3) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (MeFOSE). (4) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (EtFOSE).								



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VERITAS

BV Labs Job #: COB6931
Report Date: 2020/07/16

Con-Test Analytical Laboratory
Client Project #: 20E0343

TEST SUMMARY

BV Labs ID: MPW687
Sample ID: 20E0343-01
Matrix: Soil

Collected: 2020/05/08
Shipped:
Received: 2020/05/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6729165	N/A	2020/05/16	Chun Yan
PFAS in soil by SPE/LCMS	LCMS	6729912	2020/05/19	2020/05/20	Xinhe Xing (Helena)

BV Labs ID: MPW688
Sample ID: 20E0343-02
Matrix: Soil

Collected: 2020/05/08
Shipped:
Received: 2020/05/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6729165	N/A	2020/05/16	Chun Yan
PFAS in soil by SPE/LCMS	LCMS	6729912	2020/05/19	2020/05/20	Xinhe Xing (Helena)

BV Labs ID: MPW689
Sample ID: 20E0343-03
Matrix: Soil

Collected: 2020/05/08
Shipped:
Received: 2020/05/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6729165	N/A	2020/05/16	Chun Yan
PFAS in soil by SPE/LCMS	LCMS	6729912	2020/05/19	2020/05/20	Xinhe Xing (Helena)

BV Labs ID: MPW690
Sample ID: 20E0343-04
Matrix: Soil

Collected: 2020/05/08
Shipped:
Received: 2020/05/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6729165	N/A	2020/05/16	Chun Yan
PFAS in soil by SPE/LCMS	LCMS	6729912	2020/05/19	2020/05/20	Xinhe Xing (Helena)

BV Labs ID: MPW691
Sample ID: 20E0343-05
Matrix: Soil

Collected: 2020/05/08
Shipped:
Received: 2020/05/13

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	6729165	N/A	2020/05/16	Chun Yan
PFAS in soil by SPE/LCMS	LCMS	6729912	2020/05/19	2020/05/20	Xinhe Xing (Helena)

BUREAU
VERITASBV Labs Job #: COB6931
Report Date: 2020/07/16Con-Test Analytical Laboratory
Client Project #: 20E0343**GENERAL COMMENTS**

Revised Report (2020/07/16): Additional parameters added as per client request.

Sample MPW687 [20E0343-01] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.

Sample MPW688 [20E0343-02] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.

Sample MPW689 [20E0343-03] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.

Sample MPW690 [20E0343-04] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.

Sample MPW691 [20E0343-05] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

BUREAU
VERITASBV Labs Job #: COB6931
Report Date: 2020/07/16Con-Test Analytical Laboratory
Client Project #: 20E0343

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
6729165	MYG	RPD - Sample/Sample Dup	Moisture	2020/05/16	2.5		%	20
6729912	XIN	Matrix Spike	13C2-4:2-Fluorotelomersulfonic Acid	2020/05/20		99	%	50 - 150
			13C2-6:2-Fluorotelomersulfonic Acid	2020/05/20		98	%	50 - 150
			13C2-8:2-Fluorotelomersulfonic Acid	2020/05/20		90	%	50 - 150
			13C2-Perfluorodecanoic acid	2020/05/20		95	%	50 - 150
			13C2-Perfluorododecanoic acid	2020/05/20		88	%	50 - 150
			13C2-Perfluorohexanoic acid	2020/05/20		95	%	50 - 150
			13C2-perfluorotetradecanoic acid	2020/05/20		81	%	50 - 150
			13C2-Perfluoroundecanoic acid	2020/05/20		94	%	50 - 150
			13C3-HFPO-DA	2020/05/20		92	%	50 - 150
			13C3-Perfluorobutanesulfonic acid	2020/05/20		91	%	50 - 150
			13C4-Perfluorobutanoic acid	2020/05/20		96	%	50 - 150
			13C4-Perfluoroheptanoic acid	2020/05/20		95	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2020/05/20		90	%	50 - 150
			13C4-Perfluorooctanoic acid	2020/05/20		95	%	50 - 150
			13C5-Perfluorononanoic acid	2020/05/20		95	%	50 - 150
			13C5-Perfluoropentanoic acid	2020/05/20		94	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2020/05/20		91	%	50 - 150
			18O2-Perfluorohexanesulfonic acid	2020/05/20		93	%	50 - 150
			D3-MeFOSA	2020/05/20		56	%	50 - 150
			D3-MeFOSAA	2020/05/20		90	%	50 - 150
			D5-EtFOSA	2020/05/20		53	%	50 - 150
			D5-EtFOSAA	2020/05/20		81	%	50 - 150
			D7-MeFOSE	2020/05/20		73	%	50 - 150
			D9-EtFOSE	2020/05/20		67	%	50 - 150
			Perfluorobutanoic acid (PFBA)	2020/05/20		88	%	70 - 130
			Perfluoropentanoic acid (PFPeA)	2020/05/20		89	%	70 - 130
			Perfluorohexanoic acid (PFHxA)	2020/05/20		88	%	70 - 130
			Perfluoroheptanoic acid (PFHpA)	2020/05/20		90	%	70 - 130
			Perfluorooctanoic acid (PFOA)	2020/05/20		87	%	70 - 130
			Perfluorononanoic acid (PFNA)	2020/05/20		89	%	70 - 130
			Perfluorodecanoic acid (PFDA)	2020/05/20		90	%	70 - 130
			Perfluoroundecanoic acid (PFUnA)	2020/05/20		91	%	70 - 130
			Perfluorododecanoic acid (PFDoA)	2020/05/20		93	%	70 - 130
			Perfluorotridecanoic acid (PFTRDA)	2020/05/20		95	%	70 - 130
			Perfluorotetradecanoic acid (PFTEDA)	2020/05/20		85	%	70 - 130
			Perfluorobutanesulfonic acid (PFBS)	2020/05/20		87	%	70 - 130
			Perfluoropentanesulfonic acid (PFPS)	2020/05/20		89	%	70 - 130
			Perfluorohexanesulfonic acid (PFHxS)	2020/05/20		88	%	70 - 130
			Perfluoroheptanesulfonic acid (PFHpS)	2020/05/20		83	%	70 - 130
			Perfluorooctanesulfonic acid (PFOS)	2020/05/20		94	%	70 - 130
			Perfluorononanesulfonic acid (PFNS)	2020/05/20		83	%	70 - 130
			Perfluorodecanesulfonic acid (PFDS)	2020/05/20		81	%	70 - 130
			Perfluorooctane Sulfonamide (PFOSA)	2020/05/20		89	%	70 - 130
			EtFOSA	2020/05/20		96	%	70 - 130
			MeFOSA	2020/05/20		87	%	70 - 130
			EtFOSE	2020/05/20		91	%	70 - 130
			MeFOSE	2020/05/20		91	%	70 - 130
			EtFOSAA	2020/05/20		99	%	70 - 130
			MeFOSAA	2020/05/20		86	%	70 - 130
			4:2 Fluorotelomer sulfonic acid	2020/05/20		87	%	70 - 130
			6:2 Fluorotelomer sulfonic acid	2020/05/20		88	%	70 - 130
			8:2 Fluorotelomer sulfonic acid	2020/05/20		85	%	70 - 130



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VERITAS

BV Labs Job #: COB6931
Report Date: 2020/07/16

Con-Test Analytical Laboratory
Client Project #: 20E0343

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
6729912	XIN	Spiked Blank	Hexafluoropropyleneoxide dimer acid	2020/05/20		85	%	70 - 130
			4,8-Dioxa-3H-perfluorononanoic acid	2020/05/20		88	%	70 - 130
			9Cl-PF3ONS (F-53B Major)	2020/05/20		88	%	70 - 130
			11Cl-PF3OUdS (F-53B Minor)	2020/05/20		85	%	70 - 130
			13C2-4:2-Fluorotelomersulfonic Acid	2020/05/20		101	%	50 - 150
			13C2-6:2-Fluorotelomersulfonic Acid	2020/05/20		99	%	50 - 150
			13C2-8:2-Fluorotelomersulfonic Acid	2020/05/20		95	%	50 - 150
			13C2-Perfluorodecanoic acid	2020/05/20		96	%	50 - 150
			13C2-Perfluorododecanoic acid	2020/05/20		90	%	50 - 150
			13C2-Perfluorohexanoic acid	2020/05/20		97	%	50 - 150
			13C2-perfluorotetradecanoic acid	2020/05/20		83	%	50 - 150
			13C2-Perfluoroundecanoic acid	2020/05/20		97	%	50 - 150
			13C3-HFPO-DA	2020/05/20		90	%	50 - 150
			13C3-Perfluorobutanesulfonic acid	2020/05/20		93	%	50 - 150
			13C4-Perfluorobutanoic acid	2020/05/20		98	%	50 - 150
			13C4-Perfluoroheptanoic acid	2020/05/20		96	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2020/05/20		90	%	50 - 150
			13C4-Perfluorooctanoic acid	2020/05/20		96	%	50 - 150
			13C5-Perfluorononanoic acid	2020/05/20		95	%	50 - 150
			13C5-Perfluoropentanoic acid	2020/05/20		97	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2020/05/20		91	%	50 - 150
			18O2-Perfluorohexanesulfonic acid	2020/05/20		90	%	50 - 150
			D3-MeFOSA	2020/05/20		58	%	50 - 150
			D3-MeFOSAA	2020/05/20		88	%	50 - 150
			D5-EtFOSA	2020/05/20		57	%	50 - 150
			D5-EtFOSAA	2020/05/20		84	%	50 - 150
			D7-MeFOSE	2020/05/20		79	%	50 - 150
			D9-EtFOSE	2020/05/20		74	%	50 - 150
			Perfluorobutanoic acid (PFBA)	2020/05/20		88	%	70 - 130
			Perfluoropentanoic acid (PFPeA)	2020/05/20		88	%	70 - 130
			Perfluorohexanoic acid (PFHxA)	2020/05/20		86	%	70 - 130
			Perfluoroheptanoic acid (PFHpA)	2020/05/20		90	%	70 - 130
			Perfluorooctanoic acid (PFOA)	2020/05/20		87	%	70 - 130
			Perfluorononanoic acid (PFNA)	2020/05/20		90	%	70 - 130
			Perfluorodecanoic acid (PFDA)	2020/05/20		90	%	70 - 130
			Perfluoroundecanoic acid (PFUnA)	2020/05/20		91	%	70 - 130
			Perfluorododecanoic acid (PFDoA)	2020/05/20		92	%	70 - 130
			Perfluorotridecanoic acid (PFTRDA)	2020/05/20		93	%	70 - 130
			Perfluorotetradecanoic acid(PFTEDA)	2020/05/20		85	%	70 - 130
			Perfluorobutanesulfonic acid (PFBS)	2020/05/20		86	%	70 - 130
Perfluoropentanesulfonic acid PFPes	2020/05/20		87	%	70 - 130			
Perfluorohexanesulfonic acid(PFHxS)	2020/05/20		90	%	70 - 130			
Perfluoroheptanesulfonic acid PFHpS	2020/05/20		80	%	70 - 130			
Perfluorooctanesulfonic acid (PFOS)	2020/05/20		93	%	70 - 130			
Perfluorononanesulfonic acid (PFNS)	2020/05/20		84	%	70 - 130			
Perfluorodecanesulfonic acid (PFDS)	2020/05/20		78	%	70 - 130			
Perfluorooctane Sulfonamide (PFOSA)	2020/05/20		89	%	70 - 130			
EtFOSA	2020/05/20		94	%	70 - 130			
MeFOSA	2020/05/20		88	%	70 - 130			
EtFOSE	2020/05/20		85	%	70 - 130			
MeFOSE	2020/05/20		90	%	70 - 130			
EtFOSAA	2020/05/20		93	%	70 - 130			
MeFOSAA	2020/05/20		88	%	70 - 130			

BUREAU
VERITASBV Labs Job #: COB6931
Report Date: 2020/07/16Con-Test Analytical Laboratory
Client Project #: 20E0343

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			4:2 Fluorotelomer sulfonic acid	2020/05/20		85	%	70 - 130
			6:2 Fluorotelomer sulfonic acid	2020/05/20		87	%	70 - 130
			8:2 Fluorotelomer sulfonic acid	2020/05/20		83	%	70 - 130
			Hexafluoropropyleneoxide dimer acid	2020/05/20		86	%	70 - 130
			4,8-Dioxa-3H-perfluorononanoic acid	2020/05/20		87	%	70 - 130
			9Cl-PF3ONS (F-53B Major)	2020/05/20		87	%	70 - 130
			11Cl-PF3OUdS (F-53B Minor)	2020/05/20		83	%	70 - 130
6729912	XIN	Method Blank	13C2-4:2-Fluorotelomersulfonic Acid	2020/05/20		103	%	50 - 150
			13C2-6:2-Fluorotelomersulfonic Acid	2020/05/20		100	%	50 - 150
			13C2-8:2-Fluorotelomersulfonic Acid	2020/05/20		89	%	50 - 150
			13C2-Perfluorodecanoic acid	2020/05/20		96	%	50 - 150
			13C2-Perfluorododecanoic acid	2020/05/20		88	%	50 - 150
			13C2-Perfluorohexanoic acid	2020/05/20		101	%	50 - 150
			13C2-perfluorotetradecanoic acid	2020/05/20		71	%	50 - 150
			13C2-Perfluoroundecanoic acid	2020/05/20		95	%	50 - 150
			13C3-HFPO-DA	2020/05/20		95	%	50 - 150
			13C3-Perfluorobutanesulfonic acid	2020/05/20		93	%	50 - 150
			13C4-Perfluorobutanoic acid	2020/05/20		98	%	50 - 150
			13C4-Perfluoroheptanoic acid	2020/05/20		97	%	50 - 150
			13C4-Perfluorooctanesulfonic acid	2020/05/20		91	%	50 - 150
			13C4-Perfluorooctanoic acid	2020/05/20		96	%	50 - 150
			13C5-Perfluorononanoic acid	2020/05/20		94	%	50 - 150
			13C5-Perfluoropentanoic acid	2020/05/20		96	%	50 - 150
			13C8-Perfluorooctane Sulfonamide	2020/05/20		83	%	50 - 150
			18O2-Perfluorohexanesulfonic acid	2020/05/20		89	%	50 - 150
			D3-MeFOSA	2020/05/20		50	%	50 - 150
			D3-MeFOSAA	2020/05/20		84	%	50 - 150
			D5-EtFOSA	2020/05/20		48 (1)	%	50 - 150
			D5-EtFOSAA	2020/05/20		80	%	50 - 150
			D7-MeFOSE	2020/05/20		68	%	50 - 150
			D9-EtFOSE	2020/05/20		64	%	50 - 150
			Perfluorobutanoic acid (PFBA)	2020/05/20	0.12 U, MDL=0.12		ug/kg	
			Perfluoropentanoic acid (PFPeA)	2020/05/20	0.10 U, MDL=0.10		ug/kg	
			Perfluorohexanoic acid (PFHxA)	2020/05/20	0.14 U, MDL=0.14		ug/kg	
			Perfluoroheptanoic acid (PFHpA)	2020/05/20	0.18 U, MDL=0.18		ug/kg	
			Perfluorooctanoic acid (PFOA)	2020/05/20	0.16 U, MDL=0.16		ug/kg	
			Perfluorononanoic acid (PFNA)	2020/05/20	0.15 U, MDL=0.15		ug/kg	
			Perfluorodecanoic acid (PFDA)	2020/05/20	0.31 U, MDL=0.31		ug/kg	
			Perfluoroundecanoic acid (PFUnA)	2020/05/20	0.15 U, MDL=0.15		ug/kg	
			Perfluorododecanoic acid (PFDoA)	2020/05/20	0.19 U, MDL=0.19		ug/kg	
			Perfluorotridecanoic acid (PFTRDA)	2020/05/20	0.17 U, MDL=0.17		ug/kg	
			Perfluorotetradecanoic acid(PFTEDA)	2020/05/20	0.15 U, MDL=0.15		ug/kg	

BUREAU
VERITASBV Labs Job #: COB6931
Report Date: 2020/07/16Con-Test Analytical Laboratory
Client Project #: 20E0343

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Perfluorobutanesulfonic acid (PFBS)	2020/05/20	0.14 U, MDL=0.14		ug/kg	
			Perfluoropentanesulfonic acid PFPes	2020/05/20	0.20 U, MDL=0.20		ug/kg	
			Perfluorohexanesulfonic acid(PFHxS)	2020/05/20	0.14 U, MDL=0.14		ug/kg	
			Perfluoroheptanesulfonic acid PFHpS	2020/05/20	0.087 U, MDL=0.087		ug/kg	
			Perfluorooctanesulfonic acid (PFOS)	2020/05/20	0.21 U, MDL=0.21		ug/kg	
			Perfluorononanesulfonic acid (PFNS)	2020/05/20	0.23 U, MDL=0.23		ug/kg	
			Perfluorodecanesulfonic acid (PFDS)	2020/05/20	0.27 U, MDL=0.27		ug/kg	
			Perfluorooctane Sulfonamide (PFOSA)	2020/05/20	0.19 U, MDL=0.19		ug/kg	
			EtFOSA	2020/05/20	0.31 U, MDL=0.31		ug/kg	
			MeFOSA	2020/05/20	0.28 U, MDL=0.28		ug/kg	
			EtFOSE	2020/05/20	0.27 U, MDL=0.27		ug/kg	
			MeFOSE	2020/05/20	0.17 U, MDL=0.17		ug/kg	
			EtFOSAA	2020/05/20	0.32 U, MDL=0.32		ug/kg	
			MeFOSAA	2020/05/20	0.30 U, MDL=0.30		ug/kg	
			4:2 Fluorotelomer sulfonic acid	2020/05/20	0.22 U, MDL=0.22		ug/kg	
			6:2 Fluorotelomer sulfonic acid	2020/05/20	0.13 U, MDL=0.13		ug/kg	
			8:2 Fluorotelomer sulfonic acid	2020/05/20	0.33 U, MDL=0.33		ug/kg	
			Hexafluoropropyleneoxide dimer acid	2020/05/20	0.33 U, MDL=0.33		ug/kg	
			4,8-Dioxa-3H-perfluorononanoic acid	2020/05/20	0.20 U, MDL=0.20		ug/kg	
			9Cl-PF3ONS (F-53B Major)	2020/05/20	0.19 U, MDL=0.19		ug/kg	
			11Cl-PF3OUds (F-53B Minor)	2020/05/20	0.20 U, MDL=0.20		ug/kg	
6729912	XIN	RPD - Sample/Sample Dup	Perfluorobutanoic acid (PFBA)	2020/05/20	NC		%	30
			Perfluoropentanoic acid (PFPeA)	2020/05/20	NC		%	30
			Perfluorohexanoic acid (PFHxA)	2020/05/20	NC		%	30
			Perfluoroheptanoic acid (PFHpA)	2020/05/20	NC		%	30
			Perfluorooctanoic acid (PFOA)	2020/05/20	NC		%	30
			Perfluorononanoic acid (PFNA)	2020/05/20	NC		%	30
			Perfluorodecanoic acid (PFDA)	2020/05/20	NC		%	30
			Perfluoroundecanoic acid (PFUnA)	2020/05/20	NC		%	30
			Perfluorododecanoic acid (PFDoA)	2020/05/20	NC		%	30
			Perfluorotridecanoic acid (PFTRDA)	2020/05/20	NC		%	30
			Perfluorotetradecanoic acid(PFTEDA)	2020/05/20	NC		%	30
			Perfluorobutanesulfonic acid (PFBS)	2020/05/20	NC		%	30



BUREAU

VERITAS

BV Labs Job #: COB6931

Report Date: 2020/07/16

Con-Test Analytical Laboratory

Client Project #: 20E0343

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	% Recovery	UNITS	QC Limits
			Perfluoropentanesulfonic acid PFPes	2020/05/20	NC		%	30
			Perfluorohexanesulfonic acid(PFHxS)	2020/05/20	NC		%	30
			Perfluoroheptanesulfonic acid PFHpS	2020/05/20	NC		%	30
			Perfluorooctanesulfonic acid (PFOS)	2020/05/20	NC		%	30
			Perfluorononanesulfonic acid (PFNS)	2020/05/20	NC		%	30
			Perfluorodecanesulfonic acid (PFDS)	2020/05/20	NC		%	30
			Perfluorooctane Sulfonamide (PFOSA)	2020/05/20	NC		%	25
			EtFOSA	2020/05/20	NC		%	30
			MeFOSA	2020/05/20	NC		%	30
			EtFOSE	2020/05/20	NC		%	30
			MeFOSE	2020/05/20	NC		%	30
			EtFOSAA	2020/05/20	NC		%	30
			MeFOSAA	2020/05/20	NC		%	30
			4:2 Fluorotelomer sulfonic acid	2020/05/20	NC		%	30
			6:2 Fluorotelomer sulfonic acid	2020/05/20	NC		%	30
			8:2 Fluorotelomer sulfonic acid	2020/05/20	NC		%	30

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Extracted internal standard analyte recovery was below the defined lower control limit (LCL) which may result in increased variability of the associated native analyte result (EtFOSA).

BUREAU
VERITASBV Labs Job #: COB6931
Report Date: 2020/07/16Con-Test Analytical Laboratory
Client Project #: 20E0343**VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in black ink, appearing to read 'A. Robinson', written above a horizontal line.

Adam Robinson, Supervisor, LC/MS/MS

A handwritten signature in black ink, appearing to read 'B. Newman', written above a horizontal line.

Brad Newman, Scientific Service Specialist

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Eastern Analytical, Inc.

professional laboratory and drilling services

Alan Liptak
LE Environmental LLC
21 North Main Street #1
Waterbury , VT 05676



Subject: Laboratory Report

Eastern Analytical, Inc. ID: 210103
Client Identification: Long Falls Paperboard / 18-122
Date Received: 5/11/2020

Dear Mr. Liptak :

Enclosed please find the report of analysis for the above identified project.
As discussed, analyses were subcontracted and are listed as follows:

Analysis: Subcontract - Dioxin Furans 8290 17 Congeners ALSTX

Subcontractor Lab: ALS Environmental

A complete copy of the report is attached. This report may not be reproduced except in full, without the written approval of the laboratory.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,



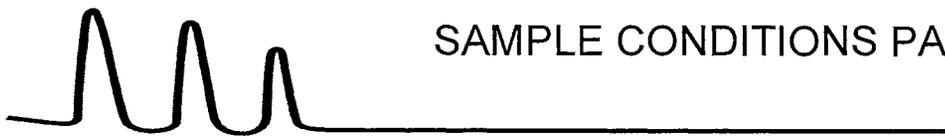
Lorraine Olashaw, Lab Director

6.25.20

Date

74

of pages (excluding cover letter)



SAMPLE CONDITIONS PAGE

EAI ID#: 210103

Client: **LE Environmental LLC**
 Client Designation: **Long Falls Paperboard / 18-122**

Temperature upon receipt (°C): 2.1

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
210103.01	LF-5	5/11/20	5/8/20	soil		Adheres to Sample Acceptance Policy
210103.02	LF-6	5/11/20	5/8/20	soil		Adheres to Sample Acceptance Policy
210103.03	LF-7	5/11/20	5/8/20	soil		Adheres to Sample Acceptance Policy
210103.04	LF-1	5/11/20	5/8/20	sludge		Adheres to Sample Acceptance Policy
210103.05	LF-2	5/11/20	5/8/20	sludge		Adheres to Sample Acceptance Policy
210103.06	LF-3	5/11/20	5/8/20	sludge		Adheres to Sample Acceptance Policy
210103.07	LF-4	5/11/20	5/8/20	sludge		Adheres to Sample Acceptance Policy
210103.08	Duplicate	5/11/20	5/8/20	sludge		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis. Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd Edition or noted Revision year.
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 4th edition, 1992



June 23, 2020

Service Request No:E2000432

Alison Blay
Eastern Analytical, Inc.
25 Chenell Drive
Concord, NH 03301

Laboratory Results for: 210103

Dear Alison,

Enclosed are the results of the sample(s) submitted to our laboratory May 15, 2020
For your reference, these analyses have been assigned our service request number **E2000432**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Corey Grandits
Project Manager

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281-530 5887
ALS Group USA, Corp.
dba ALS Environmental



Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client: EAI
Project: 210103
Sample Matrix: S

Service Request No.: E2000432
Date Received: 05/15/20

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eight samples were received for analysis at ALS Environmental in Houston on 05/15/20.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2000193: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. 1,2,3,4,6,7,8-HpCDF & 2,3,7,8-TCDF recoveries were above the upper control limits in the LCS, DLCS recoveries passed. OCDF was below lower control limit in the LCS, DLCS recovery passes.

B flags – Method Blanks

The Method Blank EQ2000193-01 contained low levels of dioxin and furan compounds above the EDL however below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with 'B' flags where the sample result is less than ten times the level detected in the method blank.

Y flags – Labeled Standards

Select labeled standards has low recoveries (all recoveries > 20%). Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with 'Y' flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

K flags

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The TEQ Summary results for each sample have been calculated by ALS/Houston to include:

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- 2378-TCDF from the DB-225 column, when confirmation required
- Non-detected compounds are not included in the 'Total'

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Eastern Analytical, Inc.
Project: 210103

Service Request: E2000432

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2000432-001	LF-5	5/8/2020	0915
E2000432-002	LF-6	5/8/2020	0945
E2000432-003	LF-7	5/8/2020	1030
E2000432-004	LF-1	5/8/2020	1135
E2000432-005	LF-2	5/8/2020	1115
E2000432-006	LF-3	5/8/2020	1110
E2000432-007	LF-4	5/8/2020	1045
E2000432-008	Duplicate	5/8/2020	1115

Service Request Summary

Folder #: E2000432
Client Name: Eastern Analytical, Inc.
Project Name: 210103
Project Number:

Project Chemist: Corey Grandtis
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/15/20
Internal Due Date: 6/5/2020

8 4 oz-Glass Jar VM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 3B
Pressure Gas:

Report To: Alison Blay
 Eastern Analytical, Inc.
 25 Chenell Drive
 Concord, NH 03301
 USA

QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y

Phone Number: 800-287-0525
Cell Number:
Fax Number: 603-228-4591
E-mail: alisonb@ealabs.com

Report to MDL?: Y
P.O. Number: 52491
EDD: No EDD Specified

Lab Samp No.	Client Samp No	Matrix	Collected	PCDD PCDF/8290	HOUSTON
E2000432-001	LF-5	Soil	05/08/20 0915		
E2000432-002	LF-6	Soil	05/08/20 0945		
E2000432-003	LF-7	Soil	05/08/20 1030		
E2000432-004	LF-1	Soil	05/08/20 1135		
E2000432-005	LF-2	Soil	05/08/20 1115		
E2000432-006	LF-3	Soil	05/08/20 1110		
E2000432-007	LF-4	Soil	05/08/20 1045		
E2000432-008	Duplicate	Soil	05/08/20 1115		
				Total Solids/ALS SOP	

Service Request Summary

Folder #: E2000432
Client Name: Eastern Analytical, Inc.
Project Name: 210103
Project Number:
Report To: Alison Blay
Eastern Analytical, Inc.
25 Chenell Drive
Concord, NH 03301
USA
Phone Number: 800-287-0525
Cell Number:
Fax Number: 603-228-4591
E-mail: alisonb@ealabs.com

Project Chemist: Corey Grandits
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 05/15/20
Internal Due Date: 6/5/2020
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: N, Y
Report to MDL?: Y
P.O. Number: 52491
EDD: No EDD Specified

8 4 oz-Glass Jar VM CLEAR Teflon Liner Unpreserved
Location: EHRMS-WIC 3B
Pressure Gas:

Data Qualifiers

HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
- i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCetration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
American Association for Laboratory Accreditation	2897.01 2020	11/30/2021
Arkansas Department of Environmental Quality	20-030-0	3/26/2021
Department of Defense	A2LA 2897.01	11/30/2021
Florida Department of Health	E87611	6/30/2020
Hawaii Department of Health	2020	4/30/2021
Illinois Environmental Protection Agency	2000322020-4	5/9/2021
Kansas Department of Health and Environment	E-10352	7/31/2020
Louisiana Department of Environmental Quality	03087	6/30/2020
Louisiana Department of Health and Hospitals	LA028-2020	12/31/2020
Maine Department of Health and Human Services	2020016	6/5/2022
Maryland Department of the Environment	343	6/30/2020
Minnesota Department of Health	1785988	12/31/2020
Nebraska Department of Health and Human Services	NE-OS-25-13 (2020)	4/30/2021
Nevada Department of Conservation and Natural Resources	TX026932019-1	7/31/2020
New Hampshire Environmental Laboratory Accreditation Program	209420	4/24/2021
New Jersey Department of Environmental Protection	NLC190001	6/30/2020
New York Department of Health	11707	3/31/2021
Oklahoma Department of Environmental Quality	2019-067	8/31/2020
Pennsylvania Department of Environmental Protection	68-03441-013	6/30/2020
Tennessee Department of Environment and Conservation	04016-2020	4/30/2021
Texas Commission on Environmental Quality	T104704231-20-26	4/30/2021
United States Department of Agriculture	P330-19-00299	10/10/2022
Utah Department of Health Environmental Laboratory Certification	TX026932019-9	7/31/2020
Washington Department of Health	C819	11/14/2020
West Virginia Department of Environmental Protection	347	6/30/2020

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E2000432

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:	Analyst:	Samples:
06/15/20	LKI	001, 002

Second Level - Data Review – to be filled by person doing peer review

Date:	Analyst:	Samples:
06/15/20	LKI	001, 002

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID

E2000432

DB-5MSUI

SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date:

06/10/20

Analyst:

JC

Samples:

003-008

Second Level - Data Review - to be filled by person doing peer review

Date:

06/10/20

Analyst:

VW

Samples:

003-008



Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

CHAIN-OF-CUSTODY RECORD



EAID# 210103

Page 1

Sample ID Date Sampled Matrix aParameters

Sample Notes

LF-5 | 5/8/2020 | soil | Subcontract - Dioxin Furans Method 8290 17 Congeners
 | 9:15

LF-6 | 5/8/2020 | soil | Subcontract - Dioxin Furans Method 8290 17 Congeners
 | 9:45

LF-7 | 5/8/2020 | soil | Subcontract - Dioxin Furans Method 8290 17 Congeners
 | 10:30

LF-1 | 5/8/2020 | sludge | Subcontract - Dioxin Furans Method 8290 17 Congeners
 | 11:35

EAID# 210103

Project State: VT

Results Needed: Preferred Date: Standard

RUSH Due Date: _____

Project ID: _____

QC Deliverables

A A+ B B+ C MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

PO #: 52491

EAID# 210103

Data Deliverable (circle)

Excel NH EMD EQUIS ME EGAD

Call prior to analyzing, if RUSH charges will be applied.

Samples collected by:

Steve 5/14/20 Bob UPS

Relinquished by

Date/Time 5/15/20 08:45 J. Wagoner

Relinquished by

Date/Time

Received by

Company ALS Environmental - Houston
 Address 10450 Stancilff Road, Suite
 Houston, TX 77099
 Account #
 Phone # 1 281-530-5656

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603)228-0525

1-800-287-0525

customerservice@easternanalytical.com

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

CHAIN-OF-CUSTODY RECORD

EAI ID# 210103

Page 2

Sample ID _____ Date Sampled _____ Matrix _____ aParameters _____

Sample Notes

LF-2 | 5/8/2020 | 11:15 | sludge | Subcontract - Dioxin Furans Method 8290 17 Congeners

LF-3 | 5/8/2020 | 11:10 | sludge | Subcontract - Dioxin Furans Method 8290 17 Congeners

LF-4 | 5/8/2020 | 10:45 | sludge | Subcontract - Dioxin Furans Method 8290 17 Congeners

Duplicate | 5/8/2020 | 11:15 | sludge | Subcontract - Dioxin Furans Method 8290 17 Congeners

EAI ID# 210103 Project State: VT

Project ID:

Company ALS Environmental - Houston
Address 10450 Stancliff Road, Suite
Address Houston, TX 77099
Account #
Phone # 1 281-530-5656

Results Needed: Preferred Date: Standard

RUSH Due Date: _____

QC Deliverables
 A A+ B B+ C MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

PO #: 52491

EAI ID# 210103

Data Deliverable (circle)
Excel NH EMD EQUIS ME EGAD

Call prior to analyzing, if RUSH charges will be applied.

Samples collected by:

Relinquished by: *[Signature]* Date/Time: 5/14/20 1500 WPS
Received by: *[Signature]* Date/Time: 5/15/20 08:45 J. Wimmer

Relinquished by _____ Date/Time _____ Received by _____

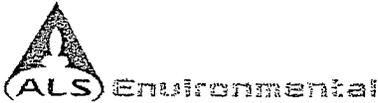
Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603)228-0525

1-800-287-0525

customerservice@easternanalytical.com

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees



Cooler Receipt Form

Project Chemist en

Client/Project EAI Thermometer ID 5M04 / R11

Date/Time Received: 5/14/20 Initials: en Date/Time Logged in: 5/14/20 Initials en

1. Method of delivery: US Mail Fed Ex UPS DHL Courier Client

2. Samples received in: Cooler Box Envelope Other _____

3. Were custody seals on coolers? Yes No
 Were they intact? Yes No N/A
 Were they signed and dated? Yes No N/A
 If yes, how many and where?

4. Packing Material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Sleeves Other _____

5. Foreign or Regulated Soil? Yes No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		5/14/20	0845	JM	3.2	<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

- 6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes No
- 7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes No
- 8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes No
- 9. Were appropriate bottles/containers and volumes received for the requested tests? Yes No
- 10. Did sample labels and tags agree with custody documents? Yes No

Notes, Discrepancies, & Resolutions:

Service request Label:



10450 Stancliff Rd., Suite 210
Houston, TX 77099
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F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 358679
 Team: Semiova GCMS/DBOTROS

Prep Workflow: OrgExtdioxS(30)
 Prep Method: Method

Status: Prepped
 Prep Date/Time: 5/19/20 09:00

#	Lab Code	Client ID	B#	Method /Test	pH	CI	Matrix	Amt. Ext.	Sample Description
1	E2000401-001	SMS 1.5-LOD1 - 1613	.01	8290A/PCDD PCDF			Soil	10.604g	@ 75 ul MDL
2	E2000401-002	SMS 3.0-LOD2 - 1613	.01	8290A/PCDD PCDF			Soil	10.288g	@ 150 ul MDL
3	E2000401-003	SMS 5-LOQ - 1613	.03	8290A/PCDD PCDF			Soil	10.714g	@ 250 ul MDL
4	E2000432-001	LF-5	.01	8290/PCDD PCDF			Soil	10.031g	brown soil
5	E2000432-002	LF-6	.01	8290/PCDD PCDF			Soil	10.807g	brown soil
6	E2000432-003	LF-7	.01	8290/PCDD PCDF			Soil	10.016g	brown soil
7	E2000432-004	LF-1	.01	8290/PCDD PCDF			Soil	10.559g	brown soil
8	E2000432-005	LF-2	.01	8290/PCDD PCDF			Soil	10.607g	brown soil
9	E2000432-006	LF-3	.01	8290/PCDD PCDF			Soil	10.196g	brown soil
10	E2000432-007	LF-4	.01	8290/PCDD PCDF			Soil	10.070g	brown soil
11	E2000432-008	Duplicate	.01	8290/PCDD PCDF			Soil	10.079g	brown soil
12	E2000433-001	2000643	.02	8290A/PCDD PCDF			Solid	10.194g	browna soil
13	EQ2000193-01	MB		8290A/PCDD PCDF			Solid	10.129g	
14	EQ2000193-02	LCS		8290A/PCDD PCDF			Solid	10.180g	
15	EQ2000193-03	DLCS		8290A/PCDD PCDF			Solid	10.181g	
16	EQ2000193-04	SMS 5-LOQ - 1613 DUP	.03	8290A/PCDD PCDF			Solid	10.571g	

Spiking Solutions

Name:	1613B/23/TO-9A MDL Native Solution	Inventory ID	207721	Logbook Ref:	207721 db 031020	Expires On:	09/01/2020
E2000401-001	75.00µL	E2000401-002	150.00µL	E2000401-003	250.00µL	EQ2000193-04	250.00µL
Name:	8290/1613B Cleanup Working Standard	Inventory ID	209499	Logbook Ref:	209499tw 05/12/20 8ng/ml	Expires On:	09/07/2020

E2000401-001	100.00µL	E2000401-002	100.00µL	E2000401-003	100.00µL	E2000432-001	100.00µL	E2000432-002	100.00µL	E2000432-003	100.00µL
E2000432-004	100.00µL	E2000432-005	100.00µL	E2000432-006	100.00µL	E2000432-007	100.00µL	E2000432-008	100.00µL	E2000433-001	100.00µL
EQ2000193-01	100.00µL	EQ2000193-01	100.00µL	EQ2000193-02	100.00µL	EQ2000193-02	100.00µL	EQ2000193-03	100.00µL	EQ2000193-03	100.00µL
EQ2000193-04	100.00µL										
Name:	1613B Matrix Working Standard	Inventory ID	209545	Logbook Ref:	209545 db 051420 2-20ng/ml	Expires On:	11/10/2020				
EQ2000193-02	100.00µL	EQ2000193-02	100.00µL	EQ2000193-03	100.00µL						

Name:	1613B Labeled Working Standard	Inventory ID	209602	Logbook Ref:	209602 db 051820 2/4ng/ml	Expires On:	07/31/2020				
E2000401-001	1,000.00µL	E2000401-002	1,000.00µL	E2000401-003	1,000.00µL	E2000432-001	1,000.00µL	E2000432-002	1,000.00µL	E2000432-003	1,000.00µL
E2000432-004	1,000.00µL	E2000432-005	1,000.00µL	E2000432-006	1,000.00µL	E2000432-007	1,000.00µL	E2000432-008	1,000.00µL	E2000433-001	1,000.00µL

Preparation Information Benchsheet

Prep Run#: 358679

Team: Semivoa GCMS/DBOTROS

EQ2000193-01 1,000.00µL
EQ2000193-04 1,000.00µL

Prep Workflow: OrgExtdioxS(30)
Prep Method: Method

EQ2000193-02 1,000.00µL
EQ2000193-03 1,000.00µL
EQ2000193-04 1,000.00µL

Status: Prepped
Prep Date/Time: 5/19/20 09:00

Preparation Materials

Carbon, High Purity	carbon 2/24/20 (207277)	Ethyl Acetate 99.9% Minimum	tw 10/28/19 (204198)	Glass Wool	JG 8/1/19 (201624)
Diachloromethane (Methylene Chloride) 99.9% MeCl2	JG 7/19/19 (201263)	EIOAc	Sodium Sulfate Anhydrous	sodium sulfate (207909)	Silica Gel
sulfuric acid	tw sulfuric acid 10/1 (203771)	Reagent Grade Na2SO4	Hexanes 95%	hexane db 042820 (209090)	toluene db 042820 (209089)
Sodium Hydroxide 1N NaOH	sodium hydroxide 1n (202287)	Tridecane (n-Tridecane)	041420 db Tridecane (208711)		

Preparation Steps

Step: Extraction	Started: 5/19/20 09:00	Step: Acid Clean	Started: 5/20/20 10:00	Step: Silica Gel Clean	Started: 5/20/20 11:00	Step: Final Volume	Started: 5/21/20 09:00
Finished: 5/20/20 08:00	By: DBOTROS	Finished: 5/20/20 11:00	By: DBOTROS	Finished: 5/20/20 14:00	By: DBOTROS	Finished: 5/21/20 12:00	By: DBOTROS
Comments:		Comments:		Comments:		Comments:	

Comments:

Reviewed By: _____ **Date:** _____

Chain of Custody

Relinquished By: _____	Date: _____				
Received By: _____	Date: _____				
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Extracts Examined</td> <td style="width: 50%;"></td> </tr> <tr> <td style="text-align: center;">Yes</td> <td style="text-align: center;">No</td> </tr> </table>		Extracts Examined		Yes	No
Extracts Examined					
Yes	No				



Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil
 Sample Name: LF-5
 Lab Code: E2000432-001

Service Request: E2000432
 Date Collected: 05/08/20 09:15
 Date Received: 05/15/20 08:45
 Units: ng/Kg
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.031g
 Data File Name: P528144
 ICAL Date: 05/18/20

Date Analyzed: 06/10/20 20:17
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528139

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.221	0.561			1
1,2,3,7,8-PeCDD	ND	U	0.105	2.81			1
1,2,3,4,7,8-HxCDD	ND	U	0.124	2.81			1
1,2,3,6,7,8-HxCDD	ND	U	0.115	2.81			1
1,2,3,7,8,9-HxCDD	0.185	BJK	0.114	2.81	1.51	1.006	1
1,2,3,4,6,7,8-HpCDD	5.30		0.143	2.81	1.03	1.000	1
OCDD	66.4		0.127	5.61	0.89	1.000	1
2,3,7,8-TCDF	ND	U	0.152	0.561			1
1,2,3,7,8-PeCDF	0.180	BJK	0.123	2.81	1.22	1.002	1
2,3,4,7,8-PeCDF	ND	U	0.121	2.81			1
1,2,3,4,7,8-HxCDF	0.162	BJ	0.121	2.81	1.14	1.000	1
1,2,3,6,7,8-HxCDF	0.165	BJ	0.111	2.81	1.19	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.164	2.81			1
2,3,4,6,7,8-HxCDF	0.326	BJ	0.128	2.81	1.34	1.001	1
1,2,3,4,6,7,8-HpCDF	1.96	J	0.0593	2.81	0.96	1.000	1
1,2,3,4,7,8,9-HpCDF	0.136	BJK	0.0842	2.81	2.01	1.000	1
OCDF	5.77		0.221	5.61	0.90	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-5
Lab Code: E2000432-001

Service Request: E2000432
Date Collected: 05/08/20 09:15
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.031g
Data File Name: P528144
ICAL Date: 05/18/20

Date Analyzed: 06/10/20 20:17
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528139

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.221	0.561			1
Total Penta-Dioxins	0.380J		0.105	2.81	1.40		1
Total Hexa-Dioxins	ND	U	0.117	2.81			1
Total Hepta-Dioxins	11.3		0.143	2.81	1.02		1
Total Tetra-Furans	1.77		0.152	0.561	0.67		1
Total Penta-Furans	ND	U	0.122	2.81			1
Total Hexa-Furans	1.83J		0.128	2.81	1.19		1
Total Hepta-Furans	4.57		0.0704	2.81	0.96		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-5
Lab Code: E2000432-001

Service Request: E2000432
Date Collected: 05/08/20 09:15
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.031g
Data File Name: P528144
ICAL Date: 05/18/20

Date Analyzed: 06/10/20 20:17
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528139

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1447.809	72		40-135	0.79	1.021
13C-1,2,3,7,8-PeCDD	2000	1613.320	81		40-135	1.57	1.192
13C-1,2,3,6,7,8-HxCDD	2000	1534.118	77		40-135	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1143.616	57		40-135	1.08	1.066
13C-OCDD	4000	1556.858	39	Y	40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	1283.032	64		40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1582.217	79		40-135	1.58	1.148
13C-1,2,3,4,7,8-HxCDF	2000	1453.135	73		40-135	0.52	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	1082.951	54		40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	525.352	66		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-5
Lab Code: E2000432-001

Service Request: E2000432
Date Collected: 05/08/20 09:15
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.221	0.561	1	1	
1,2,3,7,8-PeCDD	ND	0.105	2.81	1	1	
1,2,3,4,7,8-HxCDD	ND	0.124	2.81	1	0.1	
1,2,3,6,7,8-HxCDD	ND	0.115	2.81	1	0.1	
1,2,3,7,8,9-HxCDD	0.185	0.114	2.81	1	0.1	0.0185
1,2,3,4,6,7,8-HpCDD	5.30	0.143	2.81	1	0.01	0.0530
OCDD	66.4	0.127	5.61	1	0.0003	0.0199
2,3,7,8-TCDF	ND	0.152	0.561	1	0.1	
1,2,3,7,8-PeCDF	0.180	0.123	2.81	1	0.03	0.00540
2,3,4,7,8-PeCDF	ND	0.121	2.81	1	0.3	
1,2,3,4,7,8-HxCDF	0.162	0.121	2.81	1	0.1	0.0162
1,2,3,6,7,8-HxCDF	0.165	0.111	2.81	1	0.1	0.0165
1,2,3,7,8,9-HxCDF	ND	0.164	2.81	1	0.1	
2,3,4,6,7,8-HxCDF	0.326	0.128	2.81	1	0.1	0.0326
1,2,3,4,6,7,8-HpCDF	1.96	0.0593	2.81	1	0.01	0.0196
1,2,3,4,7,8,9-HpCDF	0.136	0.0842	2.81	1	0.01	0.00136
OCDF	5.77	0.221	5.61	1	0.0003	0.00173
Total TEQ						0.185

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil
 Sample Name: LF-5
 Lab Code: E2000432-001

Service Request: E2000432
 Date Collected: 05/08/20 09:15
 Date Received: 05/15/20 08:45
 Units: Percent
 Basis: As Received

Total Solids

Analysis Method: ALS SOP
 5.568g

Date Analyzed: 05/20/20 13:45
 NA
 E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	88.8		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-6
Lab Code: E2000432-002

Service Request: E2000432
Date Collected: 05/08/20 09:45
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.807g
Data File Name: P528145
ICAL Date: 05/18/20

Date Analyzed: 06/10/20 21:05
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528139

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.317	0.525			1
1,2,3,7,8-PeCDD	ND	U	0.103	2.63			1
1,2,3,4,7,8-HxCDD	0.134	BJK	0.103	2.63	1.52	1.001	1
1,2,3,6,7,8-HxCDD	0.405	BJK	0.0964	2.63	0.90	1.000	1
1,2,3,7,8,9-HxCDD	0.235	BJ	0.0950	2.63	1.39	1.007	1
1,2,3,4,6,7,8-HpCDD	12.7		0.133	2.63	0.99	1.000	1
OCDD	94.8		0.142	5.25	0.85	1.000	1
2,3,7,8-TCDF	ND	U	0.208	0.525			1
1,2,3,7,8-PeCDF	ND	U	0.159	2.63			1
2,3,4,7,8-PeCDF	ND	U	0.154	2.63			1
1,2,3,4,7,8-HxCDF	0.170	BJK	0.121	2.63	1.52	1.000	1
1,2,3,6,7,8-HxCDF	ND	U	0.109	2.63			1
1,2,3,7,8,9-HxCDF	ND	U	0.172	2.63			1
2,3,4,6,7,8-HxCDF	ND	U	0.131	2.63			1
1,2,3,4,6,7,8-HpCDF	2.49	J	0.116	2.63	0.95	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.171	2.63			1
OCDF	9.89		0.189	5.25	0.80	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-6
Lab Code: E2000432-002

Service Request: E2000432
Date Collected: 05/08/20 09:45
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.807g
Data File Name: P528145
ICAL Date: 05/18/20

Date Analyzed: 06/10/20 21:05
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528139

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.317	0.525			1
Total Penta-Dioxins	0.173J		0.103	2.63	1.71		1
Total Hexa-Dioxins	0.235J		0.0978	2.63	1.39		1
Total Hepta-Dioxins	21.2		0.133	2.63	1.01		1
Total Tetra-Furans	ND	U	0.208	0.525			1
Total Penta-Furans	ND	U	0.156	2.63			1
Total Hexa-Furans	1.13J		0.130	2.63	1.41		1
Total Hepta-Furans	9.29		0.140	2.63	0.95		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-6
Lab Code: E2000432-002

Service Request: E2000432
Date Collected: 05/08/20 09:45
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.807g
Data File Name: P528145
ICAL Date: 05/18/20

Date Analyzed: 06/10/20 21:05
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528139

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1203.566	60		40-135	0.77	1.021
13C-1,2,3,7,8-PeCDD	2000	1446.477	72		40-135	1.60	1.192
13C-1,2,3,6,7,8-HxCDD	2000	1415.585	71		40-135	1.28	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1245.531	62		40-135	1.03	1.066
13C-OCDD	4000	2006.247	50		40-135	0.91	1.139
13C-2,3,7,8-TCDF	2000	1062.234	53		40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1376.082	69		40-135	1.59	1.148
13C-1,2,3,4,7,8-HxCDF	2000	1360.618	68		40-135	0.49	0.970
13C-1,2,3,4,6,7,8-HpCDF	2000	1182.801	59		40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	429.618	54		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-6
Lab Code: E2000432-002

Service Request: E2000432
Date Collected: 05/08/20 09:45
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.317	0.525	1	1	
1,2,3,7,8-PeCDD	ND	0.103	2.63	1	1	
1,2,3,4,7,8-HxCDD	0.134	0.103	2.63	1	0.1	0.0134
1,2,3,6,7,8-HxCDD	0.405	0.0964	2.63	1	0.1	0.0405
1,2,3,7,8,9-HxCDD	0.235	0.0950	2.63	1	0.1	0.0235
1,2,3,4,6,7,8-HpCDD	12.7	0.133	2.63	1	0.01	0.127
OCDD	94.8	0.142	5.25	1	0.0003	0.0284
2,3,7,8-TCDF	ND	0.208	0.525	1	0.1	
1,2,3,7,8-PeCDF	ND	0.159	2.63	1	0.03	
2,3,4,7,8-PeCDF	ND	0.154	2.63	1	0.3	
1,2,3,4,7,8-HxCDF	0.170	0.121	2.63	1	0.1	0.0170
1,2,3,6,7,8-HxCDF	ND	0.109	2.63	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.172	2.63	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.131	2.63	1	0.1	
1,2,3,4,6,7,8-HpCDF	2.49	0.116	2.63	1	0.01	0.0249
1,2,3,4,7,8,9-HpCDF	ND	0.171	2.63	1	0.01	
OCDF	9.89	0.189	5.25	1	0.0003	0.00297
Total TEQ						0.278

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-6
Lab Code: E2000432-002

Service Request: E2000432
Date Collected: 05/08/20 09:45
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
5.734g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Solids	88.1		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-7
Lab Code: E2000432-003

Service Request: E2000432
Date Collected: 05/08/20 10:30
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.016g
Data File Name: P528191
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 13:07
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.285	0.544			1
1,2,3,7,8-PeCDD	0.348	BJ	0.0953	2.72	1.52	1.001	1
1,2,3,4,7,8-HxCDD	0.254	BJK	0.0973	2.72	1.44	1.000	1
1,2,3,6,7,8-HxCDD	0.693	JK	0.0898	2.72	0.99	1.001	1
1,2,3,7,8,9-HxCDD	0.535	BJ	0.0892	2.72	1.25	1.007	1
1,2,3,4,6,7,8-HpCDD	12.2		0.167	2.72	1.04	1.000	1
OCDD	105		0.0905	5.44	0.89	1.000	1
2,3,7,8-TCDF	ND	U	0.155	0.544			1
1,2,3,7,8-PeCDF	ND	U	0.146	2.72			1
2,3,4,7,8-PeCDF	0.351	JK	0.140	2.72	1.21	1.001	1
1,2,3,4,7,8-HxCDF	0.325	BJ	0.132	2.72	1.28	1.001	1
1,2,3,6,7,8-HxCDF	0.170	BJK	0.122	2.72	0.74	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.170	2.72			1
2,3,4,6,7,8-HxCDF	0.198	BJ	0.145	2.72	1.40	1.000	1
1,2,3,4,6,7,8-HpCDF	2.33	J	0.0507	2.72	1.04	1.000	1
1,2,3,4,7,8,9-HpCDF	0.163	BJK	0.0669	2.72	1.64	1.000	1
OCDF	6.87	K	0.219	5.44	0.72	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-7
Lab Code: E2000432-003

Service Request: E2000432
Date Collected: 05/08/20 10:30
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.016g
Data File Name: P528191
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 13:07
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.285	0.544			1
Total Penta-Dioxins	1.14J		0.0953	2.72	1.73		1
Total Hexa-Dioxins	3.05		0.0918	2.72	1.28		1
Total Hepta-Dioxins	25.1		0.167	2.72	1.07		1
Total Tetra-Furans	ND	U	0.155	0.544			1
Total Penta-Furans	1.37J		0.0681	2.72	1.42		1
Total Hexa-Furans	3.57		0.140	2.72	1.14		1
Total Hepta-Furans	7.79		0.0581	2.72	1.04		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-7
Lab Code: E2000432-003

Service Request: E2000432
Date Collected: 05/08/20 10:30
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.016g
Data File Name: P528191
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 13:07
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1419.917	71		40-135	0.79	1.022
13C-1,2,3,7,8-PeCDD	2000	1438.221	72		40-135	1.55	1.193
13C-1,2,3,6,7,8-HxCDD	2000	1410.284	71		40-135	1.24	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1183.790	59		40-135	1.07	1.066
13C-OCDD	4000	1882.218	47		40-135	0.90	1.140
13C-2,3,7,8-TCDF	2000	1289.774	64		40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1392.367	70		40-135	1.58	1.149
13C-1,2,3,4,7,8-HxCDF	2000	1375.987	69		40-135	0.50	0.970
13C-1,2,3,4,6,7,8-HpCDF	2000	1077.189	54		40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	501.219	63		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-7
Lab Code: E2000432-003

Service Request: E2000432
Date Collected: 05/08/20 10:30
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.285	0.544	1	1	
1,2,3,7,8-PeCDD	0.348	0.0953	2.72	1	1	0.348
1,2,3,4,7,8-HxCDD	0.254	0.0973	2.72	1	0.1	0.0254
1,2,3,6,7,8-HxCDD	0.693	0.0898	2.72	1	0.1	0.0693
1,2,3,7,8,9-HxCDD	0.535	0.0892	2.72	1	0.1	0.0535
1,2,3,4,6,7,8-HpCDD	12.2	0.167	2.72	1	0.01	0.122
OCDD	105	0.0905	5.44	1	0.0003	0.0315
2,3,7,8-TCDF	ND	0.155	0.544	1	0.1	
1,2,3,7,8-PeCDF	ND	0.146	2.72	1	0.03	
2,3,4,7,8-PeCDF	0.351	0.140	2.72	1	0.3	0.105
1,2,3,4,7,8-HxCDF	0.325	0.132	2.72	1	0.1	0.0325
1,2,3,6,7,8-HxCDF	0.170	0.122	2.72	1	0.1	0.0170
1,2,3,7,8,9-HxCDF	ND	0.170	2.72	1	0.1	
2,3,4,6,7,8-HxCDF	0.198	0.145	2.72	1	0.1	0.0198
1,2,3,4,6,7,8-HpCDF	2.33	0.0507	2.72	1	0.01	0.0233
1,2,3,4,7,8,9-HpCDF	0.163	0.0669	2.72	1	0.01	0.00163
OCDF	6.87	0.219	5.44	1	0.0003	0.00206
Total TEQ						0.851

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-7
Lab Code: E2000432-003

Service Request: E2000432
Date Collected: 05/08/20 10:30
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
6.603g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Solids	91.8		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-1
Lab Code: E2000432-004

Service Request: E2000432
Date Collected: 05/08/20 11:35
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.559g
Data File Name: P528192
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 13:55
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	2.60K		0.331	0.703	0.97	1.001	1
1,2,3,7,8-PeCDD	0.743BJ		0.276	3.51	1.56	1.001	1
1,2,3,4,7,8-HxCDD	0.865JK		0.170	3.51	1.45	1.000	1
1,2,3,6,7,8-HxCDD	7.60		0.160	3.51	1.35	1.000	1
1,2,3,7,8,9-HxCDD	2.90J		0.158	3.51	1.10	1.007	1
1,2,3,4,6,7,8-HpCDD	193		0.649	3.51	1.06	1.000	1
OCDD	2800		0.507	7.03	0.89	1.000	1
2,3,7,8-TCDF	37.3		0.227	0.703	0.71	1.001	1
1,2,3,7,8-PeCDF	1.05BJK		0.541	3.51	1.09	1.000	1
2,3,4,7,8-PeCDF	1.55J		0.562	3.51	1.56	1.000	1
1,2,3,4,7,8-HxCDF	1.32BJ		0.491	3.51	1.37	1.000	1
1,2,3,6,7,8-HxCDF	0.699BJ		0.453	3.51	1.29	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.700	3.51			1
2,3,4,6,7,8-HxCDF	1.02BJ		0.509	3.51	1.30	1.000	1
1,2,3,4,6,7,8-HpCDF	34.0		0.369	3.51	0.95	1.000	1
1,2,3,4,7,8,9-HpCDF	1.35JK		0.730	3.51	0.87	1.000	1
OCDF	153		0.811	7.03	0.85	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-1
Lab Code: E2000432-004

Service Request: E2000432
Date Collected: 05/08/20 11:35
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.559g
Data File Name: P528192
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 13:55
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	4.05		0.331	0.703	0.89		1
Total Penta-Dioxins	5.69		0.276	3.51	1.46		1
Total Hexa-Dioxins	73.4		0.162	3.51	1.28		1
Total Hepta-Dioxins	484		0.649	3.51	1.03		1
Total Tetra-Furans	79.1		0.227	0.703	0.71		1
Total Penta-Furans	14.6		0.0880	3.51	1.46		1
Total Hexa-Furans	18.7		0.524	3.51	1.18		1
Total Hepta-Furans	89.6		0.500	3.51	0.95		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-1
Lab Code: E2000432-004

Service Request: E2000432
Date Collected: 05/08/20 11:35
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.559g
Data File Name: P528192
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 13:55
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1399.746	70		40-135	0.78	1.021
13C-1,2,3,7,8-PeCDD	2000	1234.928	62		40-135	1.55	1.191
13C-1,2,3,6,7,8-HxCDD	2000	1351.108	68		40-135	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1081.685	54		40-135	1.05	1.066
13C-OCDD	4000	1547.621	39	Y	40-135	0.92	1.140
13C-2,3,7,8-TCDF	2000	1289.193	64		40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1207.895	60		40-135	1.60	1.148
13C-1,2,3,4,7,8-HxCDF	2000	1347.491	67		40-135	0.51	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	986.461	49		40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	509.149	64		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-1
Lab Code: E2000432-004

Service Request: E2000432
Date Collected: 05/08/20 11:35
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	2.60	0.331	0.703	1	1	2.60
1,2,3,7,8-PeCDD	0.743	0.276	3.51	1	1	0.743
1,2,3,4,7,8-HxCDD	0.865	0.170	3.51	1	0.1	0.0865
1,2,3,6,7,8-HxCDD	7.60	0.160	3.51	1	0.1	0.760
1,2,3,7,8,9-HxCDD	2.90	0.158	3.51	1	0.1	0.290
1,2,3,4,6,7,8-HpCDD	193	0.649	3.51	1	0.01	1.93
OCDD	2800	0.507	7.03	1	0.0003	0.840
2,3,7,8-TCDF	37.3	0.227	0.703	1	0.1	3.73
1,2,3,7,8-PeCDF	1.05	0.541	3.51	1	0.03	0.0315
2,3,4,7,8-PeCDF	1.55	0.562	3.51	1	0.3	0.465
1,2,3,4,7,8-HxCDF	1.32	0.491	3.51	1	0.1	0.132
1,2,3,6,7,8-HxCDF	0.699	0.453	3.51	1	0.1	0.0699
1,2,3,7,8,9-HxCDF	ND	0.700	3.51	1	0.1	
2,3,4,6,7,8-HxCDF	1.02	0.509	3.51	1	0.1	0.102
1,2,3,4,6,7,8-HpCDF	34.0	0.369	3.51	1	0.01	0.340
1,2,3,4,7,8,9-HpCDF	1.35	0.730	3.51	1	0.01	0.0135
OCDF	153	0.811	7.03	1	0.0003	0.0459
Total TEQ						12.2

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-1
Lab Code: E2000432-004

Service Request: E2000432
Date Collected: 05/08/20 11:35
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
5.56g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Solids	67.4		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-2
Lab Code: E2000432-005

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.607g
Data File Name: P528193
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 14:43
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	4.17		0.411	0.729	0.82	1.001	1
1,2,3,7,8-PeCDD	1.78	BJK	0.424	3.64	1.12	1.001	1
1,2,3,4,7,8-HxCDD	10.2	K	0.341	3.64	1.00	1.000	1
1,2,3,6,7,8-HxCDD	12.8		0.308	3.64	1.34	1.000	1
1,2,3,7,8,9-HxCDD	7.66		0.309	3.64	1.05	1.007	1
1,2,3,4,6,7,8-HpCDD	340		1.73	3.64	1.03	1.000	1
OCDD	2930		1.33	7.29	0.87	1.000	1
2,3,7,8-TCDF	73.0		0.278	0.729	0.69	1.001	1
1,2,3,7,8-PeCDF	2.68	J	0.507	3.64	1.49	1.001	1
2,3,4,7,8-PeCDF	3.28	J	0.514	3.64	1.73	1.001	1
1,2,3,4,7,8-HxCDF	3.11	J	0.775	3.64	1.15	1.000	1
1,2,3,6,7,8-HxCDF	1.48	BJK	0.711	3.64	1.01	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	1.40	3.64			1
2,3,4,6,7,8-HxCDF	2.33	J	0.915	3.64	1.13	1.000	1
1,2,3,4,6,7,8-HpCDF	111		1.20	3.64	0.97	1.000	1
1,2,3,4,7,8,9-HpCDF	2.67	JK	2.22	3.64	0.78	1.000	1
OCDF	325		1.55	7.29	0.85	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-2
Lab Code: E2000432-005

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.607g
Data File Name: P528193
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 14:43
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	15.6		0.411	0.729	0.79		1
Total Penta-Dioxins	50.2		0.424	3.64	1.45		1
Total Hexa-Dioxins	278		0.318	3.64	1.25		1
Total Hepta-Dioxins	1010		1.73	3.64	1.02		1
Total Tetra-Furans	168		0.278	0.729	0.70		1
Total Penta-Furans	26.1		0.0913	3.64	1.64		1
Total Hexa-Furans	31.4		0.891	3.64	1.24		1
Total Hepta-Furans	196		1.59	3.64	0.97		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-2
Lab Code: E2000432-005

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.607g
Data File Name: P528193
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 14:43
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1406.992	70		40-135	0.78	1.022
13C-1,2,3,7,8-PeCDD	2000	1094.908	55		40-135	1.58	1.192
13C-1,2,3,6,7,8-HxCDD	2000	1317.267	66		40-135	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	950.497	48		40-135	1.03	1.066
13C-OCDD	4000	1206.864	30	Y	40-135	0.95	1.139
13C-2,3,7,8-TCDF	2000	1273.196	64		40-135	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1009.744	50		40-135	1.61	1.148
13C-1,2,3,4,7,8-HxCDF	2000	1433.537	72		40-135	0.51	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	829.056	41		40-135	0.41	1.042
37Cl-2,3,7,8-TCDD	800	520.377	65		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-2
Lab Code: E2000432-005

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	4.17	0.411	0.729	1	1	4.17
1,2,3,7,8-PeCDD	1.78	0.424	3.64	1	1	1.78
1,2,3,4,7,8-HxCDD	10.2	0.341	3.64	1	0.1	1.02
1,2,3,6,7,8-HxCDD	12.8	0.308	3.64	1	0.1	1.28
1,2,3,7,8,9-HxCDD	7.66	0.309	3.64	1	0.1	0.766
1,2,3,4,6,7,8-HpCDD	340	1.73	3.64	1	0.01	3.40
OCDD	2930	1.33	7.29	1	0.0003	0.879
2,3,7,8-TCDF	73.0	0.278	0.729	1	0.1	7.30
1,2,3,7,8-PeCDF	2.68	0.507	3.64	1	0.03	0.0804
2,3,4,7,8-PeCDF	3.28	0.514	3.64	1	0.3	0.984
1,2,3,4,7,8-HxCDF	3.11	0.775	3.64	1	0.1	0.311
1,2,3,6,7,8-HxCDF	1.48	0.711	3.64	1	0.1	0.148
1,2,3,7,8,9-HxCDF	ND	1.40	3.64	1	0.1	
2,3,4,6,7,8-HxCDF	2.33	0.915	3.64	1	0.1	0.233
1,2,3,4,6,7,8-HpCDF	111	1.20	3.64	1	0.01	1.11
1,2,3,4,7,8,9-HpCDF	2.67	2.22	3.64	1	0.01	0.0267
OCDF	325	1.55	7.29	1	0.0003	0.0975
Total TEQ						23.6

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-2
Lab Code: E2000432-005

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
6.361g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	64.7		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-3
Lab Code: E2000432-006

Service Request: E2000432
Date Collected: 05/08/20 11:10
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.196g
Data File Name: P528194
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 15:32
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3.41		0.307	0.869	0.80	1.001	1
1,2,3,7,8-PeCDD	1.09BJ		0.322	4.35	1.33	1.000	1
1,2,3,4,7,8-HxCDD	4.10J		0.223	4.35	1.23	1.000	1
1,2,3,6,7,8-HxCDD	7.50		0.201	4.35	1.39	1.000	1
1,2,3,7,8,9-HxCDD	3.60JK		0.202	4.35	1.67	1.006	1
1,2,3,4,6,7,8-HpCDD	167		0.656	4.35	1.05	1.000	1
OCDD	1870		0.619	8.69	0.89	1.000	1
2,3,7,8-TCDF	59.6		0.148	0.869	0.69	1.001	1
1,2,3,7,8-PeCDF	1.92BJ		0.259	4.35	1.43	1.001	1
2,3,4,7,8-PeCDF	2.07J		0.263	4.35	1.41	1.001	1
1,2,3,4,7,8-HxCDF	1.86BJ		0.163	4.35	1.11	1.000	1
1,2,3,6,7,8-HxCDF	0.811BJK		0.154	4.35	0.99	1.000	1
1,2,3,7,8,9-HxCDF	0.713BJ		0.284	4.35	1.25	1.001	1
2,3,4,6,7,8-HxCDF	1.16BJK		0.186	4.35	0.98	1.000	1
1,2,3,4,6,7,8-HpCDF	59.1		0.435	4.35	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	1.50JK		0.860	4.35	0.81	1.000	1
OCDF	218		0.853	8.69	0.81	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-3
Lab Code: E2000432-006

Service Request: E2000432
Date Collected: 05/08/20 11:10
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.196g
Data File Name: P528194
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 15:32
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	6.93		0.307	0.869	0.88		1
Total Penta-Dioxins	16.6		0.322	4.35	1.52		1
Total Hexa-Dioxins	119		0.208	4.35	1.25		1
Total Hepta-Dioxins	478		0.656	4.35	1.06		1
Total Tetra-Furans	132		0.148	0.869	0.71		1
Total Penta-Furans	24.1		0.109	4.35	1.52		1
Total Hexa-Furans	17.4		0.186	4.35	1.06		1
Total Hepta-Furans	112		0.591	4.35	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-3
Lab Code: E2000432-006

Service Request: E2000432
Date Collected: 05/08/20 11:10
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.196g
Data File Name: P528194
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 15:32
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1447.958	72		40-135	0.78	1.021
13C-1,2,3,7,8-PeCDD	2000	1205.904	60		40-135	1.61	1.192
13C-1,2,3,6,7,8-HxCDD	2000	1415.818	71		40-135	1.22	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	895.379	45		40-135	1.04	1.066
13C-OCDD	4000	1105.590	28	Y	40-135	0.89	1.140
13C-2,3,7,8-TCDF	2000	1318.708	66		40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	1166.069	58		40-135	1.54	1.148
13C-1,2,3,4,7,8-HxCDF	2000	1468.839	73		40-135	0.51	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	838.671	42		40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	502.204	63		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-3
Lab Code: E2000432-006

Service Request: E2000432
Date Collected: 05/08/20 11:10
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	3.41	0.307	0.869	1	1	3.41
1,2,3,7,8-PeCDD	1.09	0.322	4.35	1	1	1.09
1,2,3,4,7,8-HxCDD	4.10	0.223	4.35	1	0.1	0.410
1,2,3,6,7,8-HxCDD	7.50	0.201	4.35	1	0.1	0.750
1,2,3,7,8,9-HxCDD	3.60	0.202	4.35	1	0.1	0.360
1,2,3,4,6,7,8-HpCDD	167	0.656	4.35	1	0.01	1.67
OCDD	1870	0.619	8.69	1	0.0003	0.561
2,3,7,8-TCDF	59.6	0.148	0.869	1	0.1	5.96
1,2,3,7,8-PeCDF	1.92	0.259	4.35	1	0.03	0.0576
2,3,4,7,8-PeCDF	2.07	0.263	4.35	1	0.3	0.621
1,2,3,4,7,8-HxCDF	1.86	0.163	4.35	1	0.1	0.186
1,2,3,6,7,8-HxCDF	0.811	0.154	4.35	1	0.1	0.0811
1,2,3,7,8,9-HxCDF	0.713	0.284	4.35	1	0.1	0.0713
2,3,4,6,7,8-HxCDF	1.16	0.186	4.35	1	0.1	0.116
1,2,3,4,6,7,8-HpCDF	59.1	0.435	4.35	1	0.01	0.591
1,2,3,4,7,8,9-HpCDF	1.50	0.860	4.35	1	0.01	0.0150
OCDF	218	0.853	8.69	1	0.0003	0.0654
Total TEQ						16.0

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-3
Lab Code: E2000432-006

Service Request: E2000432
Date Collected: 05/08/20 11:10
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
6.794g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	56.4		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-4
Lab Code: E2000432-007

Service Request: E2000432
Date Collected: 05/08/20 10:45
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.070g
Data File Name: P528195
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 16:20
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	2.08		0.359	0.781	0.78	1.002	1
1,2,3,7,8-PeCDD	0.988BJ		0.271	3.90	1.49	1.001	1
1,2,3,4,7,8-HxCDD	1.89J		0.285	3.90	1.31	1.000	1
1,2,3,6,7,8-HxCDD	7.08		0.266	3.90	1.27	1.000	1
1,2,3,7,8,9-HxCDD	3.69JK		0.263	3.90	1.04	1.007	1
1,2,3,4,6,7,8-HpCDD	169		0.909	3.90	1.03	1.000	1
OCDD	1630		1.04	7.81	0.90	1.000	1
2,3,7,8-TCDF	37.9		0.207	0.781	0.71	1.001	1
1,2,3,7,8-PeCDF	1.23BJK		0.272	3.90	0.97	1.000	1
2,3,4,7,8-PeCDF	1.66J		0.264	3.90	1.71	1.001	1
1,2,3,4,7,8-HxCDF	1.36BJK		0.178	3.90	1.72	1.001	1
1,2,3,6,7,8-HxCDF	0.729BJK		0.174	3.90	0.97	1.000	1
1,2,3,7,8,9-HxCDF	0.548BJ		0.302	3.90	1.43	1.001	1
2,3,4,6,7,8-HxCDF	1.20BJ		0.203	3.90	1.07	1.000	1
1,2,3,4,6,7,8-HpCDF	25.4		0.305	3.90	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	1.30JK		0.524	3.90	0.71	1.000	1
OCDF	98.3		1.24	7.81	0.83	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-4
Lab Code: E2000432-007

Service Request: E2000432
Date Collected: 05/08/20 10:45
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.070g
Data File Name: P528195
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 16:20
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	5.63		0.359	0.781	0.72		1
Total Penta-Dioxins	8.16		0.271	3.90	1.39		1
Total Hexa-Dioxins	78.9		0.271	3.90	1.18		1
Total Hepta-Dioxins	357		0.909	3.90	1.03		1
Total Tetra-Furans	81.0		0.207	0.781	0.69		1
Total Penta-Furans	21.4		0.0978	3.90	1.76		1
Total Hexa-Furans	14.0		0.204	3.90	1.08		1
Total Hepta-Furans	47.6		0.394	3.90	1.00		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-4
Lab Code: E2000432-007

Service Request: E2000432
Date Collected: 05/08/20 10:45
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.070g
Data File Name: P528195
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 16:20
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1195.233	60		40-135	0.79	1.021
13C-1,2,3,7,8-PeCDD	2000	921.429	46		40-135	1.56	1.192
13C-1,2,3,6,7,8-HxCDD	2000	1153.422	58		40-135	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	704.107	35	Y	40-135	1.03	1.067
13C-OCDD	4000	947.882	24	Y	40-135	0.91	1.140
13C-2,3,7,8-TCDF	2000	1108.199	55		40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	899.850	45		40-135	1.60	1.149
13C-1,2,3,4,7,8-HxCDF	2000	1248.843	62		40-135	0.49	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	670.948	34	Y	40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	431.149	54		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-4
Lab Code: E2000432-007

Service Request: E2000432
Date Collected: 05/08/20 10:45
Date Received: 05/15/20 08:45
Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	2.08	0.359	0.781	1	1	2.08
1,2,3,7,8-PeCDD	0.988	0.271	3.90	1	1	0.988
1,2,3,4,7,8-HxCDD	1.89	0.285	3.90	1	0.1	0.189
1,2,3,6,7,8-HxCDD	7.08	0.266	3.90	1	0.1	0.708
1,2,3,7,8,9-HxCDD	3.69	0.263	3.90	1	0.1	0.369
1,2,3,4,6,7,8-HpCDD	169	0.909	3.90	1	0.01	1.69
OCDD	1630	1.04	7.81	1	0.0003	0.489
2,3,7,8-TCDF	37.9	0.207	0.781	1	0.1	3.79
1,2,3,7,8-PeCDF	1.23	0.272	3.90	1	0.03	0.0369
2,3,4,7,8-PeCDF	1.66	0.264	3.90	1	0.3	0.498
1,2,3,4,7,8-HxCDF	1.36	0.178	3.90	1	0.1	0.136
1,2,3,6,7,8-HxCDF	0.729	0.174	3.90	1	0.1	0.0729
1,2,3,7,8,9-HxCDF	0.548	0.302	3.90	1	0.1	0.0548
2,3,4,6,7,8-HxCDF	1.20	0.203	3.90	1	0.1	0.120
1,2,3,4,6,7,8-HpCDF	25.4	0.305	3.90	1	0.01	0.254
1,2,3,4,7,8,9-HpCDF	1.30	0.524	3.90	1	0.01	0.0130
OCDF	98.3	1.24	7.81	1	0.0003	0.0295
Total TEQ						11.5

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: LF-4
Lab Code: E2000432-007

Service Request: E2000432
Date Collected: 05/08/20 10:45
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
8.418g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	63.6		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil

Service Request: E2000432
 Date Collected: 05/08/20 11:15
 Date Received: 05/15/20 08:45

Sample Name: Duplicate
 Lab Code: E2000432-008

Units: ng/Kg
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.079g

Date Analyzed: 06/12/20 17:09
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528188

Data File Name: P528196
 ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	3.50K		0.313	0.751	0.90	1.001	1
1,2,3,7,8-PeCDD	0.927BJK		0.190	3.75	1.97	1.001	1
1,2,3,4,7,8-HxCDD	0.928J		0.343	3.75	1.35	1.000	1
1,2,3,6,7,8-HxCDD	7.97		0.327	3.75	1.19	1.000	1
1,2,3,7,8,9-HxCDD	3.98		0.320	3.75	1.21	1.007	1
1,2,3,4,6,7,8-HpCDD	122		0.466	3.75	1.14	1.000	1
OCDD	1940		1.16	7.51	0.86	1.000	1
2,3,7,8-TCDF	66.0		0.170	0.751	0.73	1.001	1
1,2,3,7,8-PeCDF	1.55BJK		0.297	3.75	1.14	1.000	1
2,3,4,7,8-PeCDF	2.70J		0.307	3.75	1.58	1.001	1
1,2,3,4,7,8-HxCDF	1.73BJK		0.346	3.75	0.94	1.000	1
1,2,3,6,7,8-HxCDF	0.959BJK		0.328	3.75	1.01	1.000	1
1,2,3,7,8,9-HxCDF	ND	U	0.648	3.75			1
2,3,4,6,7,8-HxCDF	1.23BJK		0.389	3.75	1.67	1.000	1
1,2,3,4,6,7,8-HpCDF	69.3		0.833	3.75	1.01	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	1.51	3.75			1
OCDF	300		1.20	7.51	0.83	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45

Sample Name: Duplicate
Lab Code: E2000432-008

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.079g

Date Analyzed: 06/12/20 17:09
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Data File Name: P528196
ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	4.55		0.313	0.751	0.82		1
Total Penta-Dioxins	3.75J		0.190	3.75	1.55		1
Total Hexa-Dioxins	68.0		0.329	3.75	1.12		1
Total Hepta-Dioxins	254		0.466	3.75	1.01		1
Total Tetra-Furans	140		0.170	0.751	0.69		1
Total Penta-Furans	25.0		0.0940	3.75	1.47		1
Total Hexa-Furans	7.52		0.399	3.75	1.20		1
Total Hepta-Furans	138		1.10	3.75	1.01		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: Duplicate
Lab Code: E2000432-008

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.079g
Data File Name: P528196
ICAL Date: 05/18/20

Date Analyzed: 06/12/20 17:09
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528188

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1336.494	67		40-135	0.79	1.021
13C-1,2,3,7,8-PeCDD	2000	947.813	47		40-135	1.56	1.191
13C-1,2,3,6,7,8-HxCDD	2000	1267.023	63		40-135	1.31	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	732.241	37	Y	40-135	1.03	1.067
13C-OCDD	4000	950.837	24	Y	40-135	0.89	1.140
13C-2,3,7,8-TCDF	2000	1245.749	62		40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	956.633	48		40-135	1.60	1.148
13C-1,2,3,4,7,8-HxCDF	2000	1394.208	70		40-135	0.50	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	688.025	34	Y	40-135	0.42	1.042
37Cl-2,3,7,8-TCDD	800	470.825	59		40-135	NA	1.022

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45

Sample Name: Duplicate
Lab Code: E2000432-008

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	3.50	0.313	0.751	1	1	3.50
1,2,3,7,8-PeCDD	0.927	0.190	3.75	1	1	0.927
1,2,3,4,7,8-HxCDD	0.928	0.343	3.75	1	0.1	0.0928
1,2,3,6,7,8-HxCDD	7.97	0.327	3.75	1	0.1	0.797
1,2,3,7,8,9-HxCDD	3.98	0.320	3.75	1	0.1	0.398
1,2,3,4,6,7,8-HpCDD	122	0.466	3.75	1	0.01	1.22
OCDD	1940	1.16	7.51	1	0.0003	0.582
2,3,7,8-TCDF	66.0	0.170	0.751	1	0.1	6.60
1,2,3,7,8-PeCDF	1.55	0.297	3.75	1	0.03	0.0465
2,3,4,7,8-PeCDF	2.70	0.307	3.75	1	0.3	0.810
1,2,3,4,7,8-HxCDF	1.73	0.346	3.75	1	0.1	0.173
1,2,3,6,7,8-HxCDF	0.959	0.328	3.75	1	0.1	0.0959
1,2,3,7,8,9-HxCDF	ND	0.648	3.75	1	0.1	
2,3,4,6,7,8-HxCDF	1.23	0.389	3.75	1	0.1	0.123
1,2,3,4,6,7,8-HpCDF	69.3	0.833	3.75	1	0.01	0.693
1,2,3,4,7,8,9-HpCDF	ND	1.51	3.75	1	0.01	
OCDF	300	1.20	7.51	1	0.0003	0.0900
Total TEQ						16.1

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil
Sample Name: Duplicate
Lab Code: E2000432-008

Service Request: E2000432
Date Collected: 05/08/20 11:15
Date Received: 05/15/20 08:45
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
5.996g

Date Analyzed: 05/20/20 13:45
NA
E-Balance-01

Native Analyte Results

<u>Analyte Name</u>	<u>Result</u>	<u>Q</u>	<u>EDL</u>	<u>MRL</u>	<u>Ion Ratio</u>	<u>RRT</u>	<u>Dilution Factor</u>
Total Solids	66.1		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil

Service Request: E2000432
 Date Collected: NA
 Date Received: NA

Sample Name: Method Blank
 Lab Code: EQ2000193-01

Units: ng/Kg
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.129g

Date Analyzed: 06/07/20 05:20
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528048

Data File Name: P528051
 ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.295	0.494			1
1,2,3,7,8-PeCDD	0.276JK		0.136	2.47	1.22	1.000	1
1,2,3,4,7,8-HxCDD	0.0615JK		0.0553	2.47	0.40	1.001	1
1,2,3,6,7,8-HxCDD	0.0647JK		0.0488	2.47	0.41	1.000	1
1,2,3,7,8,9-HxCDD	0.0956JK		0.0494	2.47	2.17	1.007	1
1,2,3,4,6,7,8-HpCDD	ND	U	0.0266	2.47			1
OCDD	0.457JK		0.0501	4.94	1.23	1.000	1
2,3,7,8-TCDF	ND	U	0.269	0.494			1
1,2,3,7,8-PeCDF	0.235JK		0.114	2.47	1.19	1.000	1
2,3,4,7,8-PeCDF	ND	U	0.105	2.47			1
1,2,3,4,7,8-HxCDF	0.188J		0.0187	2.47	1.15	1.000	1
1,2,3,6,7,8-HxCDF	0.149J		0.0171	2.47	1.35	1.000	1
1,2,3,7,8,9-HxCDF	0.260J		0.0293	2.47	1.14	1.000	1
2,3,4,6,7,8-HxCDF	0.131JK		0.0208	2.47	0.92	1.000	1
1,2,3,4,6,7,8-HpCDF	0.0767JK		0.0212	2.47	0.78	1.000	1
1,2,3,4,7,8,9-HpCDF	0.0839JK		0.0321	2.47	0.78	1.000	1
OCDF	0.257J		0.113	4.94	0.97	1.006	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil

Service Request: E2000432
 Date Collected: NA
 Date Received: NA

Sample Name: Method Blank
 Lab Code: EQ2000193-01

Units: ng/Kg
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.129g

Date Analyzed: 06/07/20 05:20
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528048

Data File Name: P528051
 ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.295	0.494			1
Total Penta-Dioxins	ND	U	0.136	2.47			1
Total Hexa-Dioxins	0.204J		0.0509	2.47	1.34		1
Total Hepta-Dioxins	ND	U	0.0266	2.47			1
Total Tetra-Furans	ND	U	0.269	0.494			1
Total Penta-Furans	ND	U	0.109	2.47			1
Total Hexa-Furans	0.597J		0.0207	2.47	1.15		1
Total Hepta-Furans	ND	U	0.0258	2.47			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: EQ2000193-01

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.129g

Date Analyzed: 06/07/20 05:20
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528048

Data File Name: P528051
ICAL Date: 05/18/20

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	993.487	50		40-135	0.78	1.020
13C-1,2,3,7,8-PeCDD	2000	1215.206	61		40-135	1.60	1.186
13C-1,2,3,6,7,8-HxCDD	2000	1597.234	80		40-135	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1279.001	64		40-135	1.02	1.066
13C-OCDD	4000	2129.851	53		40-135	0.91	1.140
13C-2,3,7,8-TCDF	2000	908.843	45		40-135	0.82	0.992
13C-1,2,3,7,8-PeCDF	2000	1160.756	58		40-135	1.63	1.144
13C-1,2,3,4,7,8-HxCDF	2000	1503.342	75		40-135	0.49	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	1239.753	62		40-135	0.43	1.042
37Cl-2,3,7,8-TCDD	800	360.397	45		40-135	NA	1.021



Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Analyzed: 06/07/20
Date Extracted: 05/19/20

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method

Units: ng/Kg
Basis: Dry
Analysis Lot: 683667

Lab Control Sample
EQ2000193-02

Duplicate Lab Control Sample
EQ2000193-03

Analyte Name	Lab Control Sample			Duplicate Lab Control Sample			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,3,4,6,7,8-HpCDD	93.4	98.2	95	97.6	98.2	99	70-130	4	25
1,2,3,4,7,8-HxCDD	107	98.2	109	108	98.2	110	70-130	2	25
1,2,3,6,7,8-HxCDD	96.9	98.2	99	99.1	98.2	101	70-130	2	25
1,2,3,7,8,9-HxCDD	96.9	98.2	99	101	98.2	103	70-130	4	25
1,2,3,7,8-PeCDD	106	98.2	108	108	98.2	110	70-130	1	25
2,3,7,8-TCDD	17.8	19.6	91	17.4	19.6	89	70-130	2	25
OCDD	202	196	103	202	196	103	70-130	<1	25
1,2,3,4,6,7,8-HpCDF	147	98.2	150 *	95.2	98.2	97	70-130	43 *	25
1,2,3,4,7,8,9-HpCDF	93.7	98.2	95	99.1	98.2	101	70-130	6	25
1,2,3,4,7,8-HxCDF	87.1	98.2	89	88.7	98.2	90	70-130	2	25
1,2,3,6,7,8-HxCDF	84.7	98.2	86	84.1	98.2	86	70-130	<1	25
1,2,3,7,8,9-HxCDF	91.8	98.2	93	92.2	98.2	94	70-130	<1	25
1,2,3,7,8-PeCDF	92.2	98.2	94	94.0	98.2	96	70-130	2	25
2,3,4,6,7,8-HxCDF	97.0	98.2	99	94.1	98.2	96	70-130	3	25
2,3,4,7,8-PeCDF	95.9	98.2	98	104	98.2	106	70-130	8	25
2,3,7,8-TCDF	30.7	19.6	156 *	18.1	19.6	92	70-130	52 *	25
OCDF	99.2	196	50 *	233	196	118	70-130	80 *	25

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil

Service Request: E2000432
 Date Collected: NA
 Date Received: NA

Sample Name: Lab Control Sample
 Lab Code: EQ2000193-02

Units: ng/Kg
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.180g
 Data File Name: P528058
 ICAL Date: 05/18/20

Date Analyzed: 06/07/20 10:59
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528048

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	17.8		0.118	0.491	0.77	1.001	1
1,2,3,7,8-PeCDD	106		0.0507	2.46	1.53	1.000	1
1,2,3,4,7,8-HxCDD	107		0.0485	2.46	1.25	1.000	1
1,2,3,6,7,8-HxCDD	96.9		0.0393	2.46	1.21	1.000	1
1,2,3,7,8,9-HxCDD	96.9		0.0412	2.46	1.21	1.007	1
1,2,3,4,6,7,8-HpCDD	93.4		0.164	2.46	1.07	1.000	1
OCDD	202		0.212	4.91	0.87	1.000	1
2,3,7,8-TCDF	30.7		0.0934	0.491	0.70	1.001	1
1,2,3,7,8-PeCDF	92.2		0.431	2.46	1.47	1.001	1
2,3,4,7,8-PeCDF	95.9		0.499	2.46	1.49	1.001	1
1,2,3,4,7,8-HxCDF	87.1		0.230	2.46	1.08	1.000	1
1,2,3,6,7,8-HxCDF	84.7		0.202	2.46	1.13	1.000	1
1,2,3,7,8,9-HxCDF	91.8		0.425	2.46	1.11	1.000	1
2,3,4,6,7,8-HxCDF	97.0		0.264	2.46	1.14	1.000	1
1,2,3,4,6,7,8-HpCDF	147		0.418	2.46	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	93.7		0.773	2.46	0.97	1.000	1
OCDF	99.2		0.201	4.91	0.84	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ2000193-02

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.180g

Date Analyzed: 06/07/20 10:59
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528048

Data File Name: P528058
ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	18.6		0.118	0.491	0.79		1
Total Penta-Dioxins	112		0.0507	2.46	1.63		1
Total Hexa-Dioxins	303		0.0425	2.46	1.32		1
Total Hepta-Dioxins	97.3		0.164	2.46	1.08		1
Total Tetra-Furans	44.3		0.0934	0.491	0.79		1
Total Penta-Furans	226		0.462	2.46	1.43		1
Total Hexa-Furans	396		0.259	2.46	1.20		1
Total Hepta-Furans	266		0.557	2.46	0.98		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Collected: NA
Date Received: NA

Sample Name: Lab Control Sample
Lab Code: EQ2000193-02

Units: Percent
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.180g

Date Analyzed: 06/07/20 10:59
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528048

Data File Name: P528058
ICAL Date: 05/18/20

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1078.310	54		40-135	0.77	1.021
13C-1,2,3,7,8-PeCDD	2000	1097.351	55		40-135	1.58	1.187
13C-1,2,3,6,7,8-HxCDD	2000	1216.195	61		40-135	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	709.101	35	Y	40-135	1.07	1.066
13C-OCDD	4000	806.829	20	Y	40-135	0.92	1.140
13C-2,3,7,8-TCDF	2000	1112.775	56		40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	1211.996	61		40-135	1.55	1.144
13C-1,2,3,4,7,8-HxCDF	2000	970.948	49		40-135	0.49	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	452.325	23	Y	40-135	0.41	1.042
37Cl-2,3,7,8-TCDD	800	431.773	54		40-135	NA	1.021

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil

Service Request: E2000432
 Date Collected: NA
 Date Received: NA

Sample Name: Duplicate Lab Control Sample
 Lab Code: EQ2000193-03

Units: ng/Kg
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.181g

Date Analyzed: 06/07/20 11:47
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528048

Data File Name: P528059
 ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	17.4		0.114	0.491	0.78	1.000	1
1,2,3,7,8-PeCDD	108		0.0277	2.46	1.56	1.001	1
1,2,3,4,7,8-HxCDD	108		0.0512	2.46	1.23	1.000	1
1,2,3,6,7,8-HxCDD	99.1		0.0441	2.46	1.29	1.000	1
1,2,3,7,8,9-HxCDD	101		0.0451	2.46	1.21	1.007	1
1,2,3,4,6,7,8-HpCDD	97.6		0.0166	2.46	1.10	1.000	1
OCDD	202		0.0479	4.91	0.88	1.000	1
2,3,7,8-TCDF	18.1		0.103	0.491	0.66	1.001	1
1,2,3,7,8-PeCDF	94.0		0.0667	2.46	1.43	1.001	1
2,3,4,7,8-PeCDF	104		0.0657	2.46	1.46	1.000	1
1,2,3,4,7,8-HxCDF	88.7		0.0267	2.46	1.14	1.000	1
1,2,3,6,7,8-HxCDF	84.1		0.0246	2.46	1.17	1.000	1
1,2,3,7,8,9-HxCDF	92.2		0.0404	2.46	1.17	1.000	1
2,3,4,6,7,8-HxCDF	94.1		0.0290	2.46	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	95.2		0.369	2.46	0.95	1.000	1
1,2,3,4,7,8,9-HpCDF	99.1		0.528	2.46	0.98	1.000	1
OCDF	233		0.0813	4.91	0.87	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
Project: 210103
Sample Matrix: Soil

Service Request: E2000432
Date Collected: NA
Date Received: NA

Sample Name: Duplicate Lab Control Sample
Lab Code: EQ2000193-03

Units: ng/Kg
Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
Prep Method: Method
Sample Amount: 10.181g

Date Analyzed: 06/07/20 11:47
Date Extracted: 5/19/20
Instrument Name: E-HRMS-07
GC Column: DB-5MSUI
Blank File Name: P528051
Cal Ver. File Name: P528048

Data File Name: P528059
ICAL Date: 05/18/20

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	17.4		0.114	0.491	0.78		1
Total Penta-Dioxins	108		0.0277	2.46	1.56		1
Total Hexa-Dioxins	308		0.0465	2.46	1.23		1
Total Hepta-Dioxins	97.6		0.0166	2.46	1.10		1
Total Tetra-Furans	18.1		0.103	0.491	0.74		1
Total Penta-Furans	199		0.0662	2.46	1.43		1
Total Hexa-Furans	359		0.0291	2.46	1.14		1
Total Hepta-Furans	194		0.439	2.46	0.95		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.
 Project: 210103
 Sample Matrix: Soil

Service Request: E2000432
 Date Collected: NA
 Date Received: NA

Sample Name: Duplicate Lab Control Sample
 Lab Code: EQ2000193-03

Units: Percent
 Basis: Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method: 8290
 Prep Method: Method
 Sample Amount: 10.181g

Date Analyzed: 06/07/20 11:47
 Date Extracted: 5/19/20
 Instrument Name: E-HRMS-07
 GC Column: DB-5MSUI
 Blank File Name: P528051
 Cal Ver. File Name: P528048

Data File Name: P528059
 ICAL Date: 05/18/20

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1239.916	62		40-135	0.77	1.021
13C-1,2,3,7,8-PeCDD	2000	1308.292	65		40-135	1.60	1.187
13C-1,2,3,6,7,8-HxCDD	2000	1620.635	81		40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1211.855	61		40-135	1.06	1.066
13C-OCDD	4000	1645.021	41		40-135	0.90	1.140
13C-2,3,7,8-TCDF	2000	1154.829	58		40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	1271.410	64		40-135	1.57	1.144
13C-1,2,3,4,7,8-HxCDF	2000	1504.932	75		40-135	0.50	0.971
13C-1,2,3,4,6,7,8-HpCDF	2000	1168.528	58		40-135	0.44	1.042
37Cl-2,3,7,8-TCDD	800	441.804	55		40-135	NA	1.021

June 22, 2020

Alan Liptak
LE Environmental
21 North Main Street #1
Waterbury, VT 05676

Project Location: 161 Wellington Rd, Brattleboro, VT
Client Job Number:
Project Number: 18-122
Laboratory Work Order Number: 20F0455

Enclosed are results of analyses for samples received by the laboratory on June 10, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "R. J. McCarthy". The signature is written in a cursive style with a large, prominent "M".

Raymond J. McCarthy
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

LE Environmental
 21 North Main Street #1
 Waterbury, VT 05676
 ATTN: Alan Liptak

REPORT DATE: 6/22/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 18-122

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20F0455

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 161 Wellington Rd, Brattleboro, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
IP-1	20F0455-01	Ground Water		SOP 434-PFAAS	
IP-2	20F0455-02	Ground Water		SOP 434-PFAAS	
IP-3	20F0455-03	Ground Water		SOP 434-PFAAS	
IP-4	20F0455-04	Ground Water		SOP 434-PFAAS	
IP-6	20F0455-05	Ground Water		SOP 434-PFAAS	
IP-7	20F0455-06	Ground Water		SOP 434-PFAAS	
IP-8	20F0455-07	Ground Water		SOP 434-PFAAS	
Duplicate	20F0455-08	Ground Water		SOP 434-PFAAS	
Trip Blank	20F0455-09	Trip Blank Water		SOP 434-PFAAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Technical Representative

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-1

Sampled: 6/9/2020 13:40

Sample ID: 20F0455-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	2.4	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluoropentanoic acid (PFPeA)	3.3	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorohexanoic acid (PFHxA)	3.9	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorooctanoic acid (PFOA)	8.0	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:56	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	74.5	70-130	6/21/20 21:56						
13C-PFDA	71.7	70-130	6/21/20 21:56						
d5-NEtFOSAA	76.3	70-130	6/21/20 21:56						

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-2

Sampled: 6/9/2020 10:15

Sample ID: 20F0455-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorooctanoic acid (PFOA)	2.6	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 22:18	BLM
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
13C-PFHxA		90.4	70-130					6/21/20 22:18	
13C-PFDA		82.1	70-130					6/21/20 22:18	
d5-NEtFOSAA		93.5	70-130					6/21/20 22:18	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-3

Sampled: 6/9/2020 15:37

Sample ID: 20F0455-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	2.8	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluoropentanoic acid (PFPeA)	2.1	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorohexanoic acid (PFHxA)	2.7	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorooctanoic acid (PFOA)	2.7	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:01	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	80.9	70-130	6/21/20 23:01						
13C-PFDA	86.1	70-130	6/21/20 23:01						
d5-NEtFOSAA	84.3	70-130	6/21/20 23:01						

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-4

Sampled: 6/9/2020 17:45

Sample ID: 20F0455-04

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.4	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluoropentanoic acid (PFPeA)	7.6	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorohexanoic acid (PFHxA)	2.7	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorooctanoic acid (PFOA)	2.8	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:22	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	85.1	70-130	6/21/20 23:22						
13C-PFDA	76.3	70-130	6/21/20 23:22						
d5-NEtFOSAA	78.6	70-130	6/21/20 23:22						

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-6

Sampled: 6/10/2020 08:45

Sample ID: 20F0455-05

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	18	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluoropentanoic acid (PFPeA)	87	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorohexanoic acid (PFHxA)	29	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluoroheptanoic acid (PFHpA)	4.0	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorooctanoic acid (PFOA)	3.7	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 23:44	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	83.7	70-130	6/21/20 23:44						
13C-PFDA	73.1	70-130	6/21/20 23:44						
d5-NEtFOSAA	74.4	70-130	6/21/20 23:44						

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-7

Sampled: 6/9/2020 11:56

Sample ID: 20F0455-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorooctanoic acid (PFOA)	2.2	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:06	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	90.1	70-130							
13C-PFDA	86.4	70-130							
d5-NEtFOSAA	89.5	70-130							

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: IP-8

Sampled: 6/10/2020 10:30

Sample ID: 20F0455-07

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.3	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluoropentanoic acid (PFPeA)	23	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorohexanoic acid (PFHxA)	12	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:27	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	81.6	70-130	6/22/20 0:27						
13C-PFDA	72.6	70-130	6/22/20 0:27						
d5-NEtFOSAA	85.9	70-130	6/22/20 0:27						

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: Duplicate

Sampled: 6/9/2020 13:40

Sample ID: 20F0455-08

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	2.7	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluoropentanoic acid (PFPeA)	3.7	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorohexanoic acid (PFHxA)	4.1	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorooctanoic acid (PFOA)	8.6	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/22/20 0:49	BLM
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C-PFHxA	85.4	70-130	6/22/20 0:49						
13C-PFDA	80.0	70-130	6/22/20 0:49						
d5-NEtFOSAA	85.7	70-130	6/22/20 0:49						

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 161 Wellington Rd, Brattleboro, V

Sample Description:

Work Order: 20F0455

Date Received: 6/10/2020

Field Sample #: Trip Blank

Sampled: 6/10/2020 00:00

Sample ID: 20F0455-09

Sample Matrix: Trip Blank Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
N-EtFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
N-MeFOSAA	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorotridecanoic acid (PFTTrDA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L	1		SOP 434-PFAAS	6/16/20	6/21/20 21:35	BLM
Surrogates		% Recovery	Recovery Limits		Flag/Qual				
13C-PFHxA		89.3	70-130					6/21/20 21:35	
13C-PFDA		83.0	70-130					6/21/20 21:35	
d5-NEtFOSAA		91.5	70-130					6/21/20 21:35	

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Sample Extraction Data

Prep Method: SOP 434-PFAAS Analytical Method: SOP 434-PFAAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20F0455-01 [IP-1]	B260133	250	1.00	06/16/20
20F0455-02 [IP-2]	B260133	250	1.00	06/16/20
20F0455-03 [IP-3]	B260133	250	1.00	06/16/20
20F0455-04 [IP-4]	B260133	250	1.00	06/16/20
20F0455-05 [IP-6]	B260133	250	1.00	06/16/20
20F0455-06 [IP-7]	B260133	250	1.00	06/16/20
20F0455-07 [IP-8]	B260133	250	1.00	06/16/20
20F0455-08 [Duplicate]	B260133	250	1.00	06/16/20
20F0455-09 [Trip Blank]	B260133	250	1.00	06/16/20

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B260133 - SOP 434-PFAAS

Blank (B260133-BLK1)

Prepared: 06/16/20 Analyzed: 06/21/20

Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Surrogate: 13C-PFHxA	29.0		ng/L	40.0		72.5	70-130			
Surrogate: 13C-PFDA	28.1		ng/L	40.0		70.2	70-130			
Surrogate: d5-NEtFOSAA	129		ng/L	160		80.7	70-130			

LCS (B260133-BS1)

Prepared: 06/16/20 Analyzed: 06/21/20

Perfluorobutanoic acid (PFBA)	7.52	2.0	ng/L	10.0		75.2	50-150			
Perfluorobutanesulfonic acid (PFBS)	8.73	2.0	ng/L	8.85		98.6	70-130			
Perfluoropentanoic acid (PFPeA)	8.50	2.0	ng/L	10.0		85.0	50-150			
Perfluorohexanoic acid (PFHxA)	9.13	2.0	ng/L	10.0		91.3	70-130			
Perfluorohexanesulfonic acid (PFHxS)	8.58	2.0	ng/L	9.10		94.3	70-130			
Perfluoroheptanoic acid (PFHpA)	7.97	2.0	ng/L	10.0		79.7	70-130			
Perfluoroheptanesulfonic acid (PFHpS)	9.48	2.0	ng/L	9.50		99.8	50-150			
Perfluorooctanoic acid (PFOA)	8.23	2.0	ng/L	10.0		82.3	70-130			
Perfluorooctanesulfonic acid (PFOS)	8.11	2.0	ng/L	9.25		87.7	70-130			
Perfluorooctanesulfonamide (FOSA)	6.93	2.0	ng/L	10.0		69.3	50-150			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	11.4	2.0	ng/L	9.50		120	50-150			
Perfluorononanoic acid (PFNA)	7.51	2.0	ng/L	10.0		75.1	70-130			
Perfluorodecanoic acid (PFDA)	7.66	2.0	ng/L	10.0		76.6	70-130			
Perfluorodecanesulfonic acid (PFDS)	8.33	2.0	ng/L	9.65		86.3	50-150			
N-EtFOSAA	8.98	2.0	ng/L	10.0		89.8	70-130			
8:2 Fluorotelomersulfonic acid (8:2FTS A)	6.80	2.0	ng/L	9.60		70.8	50-150			
Perfluoroundecanoic acid (PFUnA)	7.91	2.0	ng/L	10.0		79.1	70-130			
N-MeFOSAA	10.0	2.0	ng/L	10.0		100	70-130			
Perfluorododecanoic acid (PFDoA)	7.63	2.0	ng/L	10.0		76.3	70-130			
Perfluorotridecanoic acid (PFTrDA)	8.41	2.0	ng/L	10.0		84.1	70-130			
Perfluorotetradecanoic acid (PFTA)	8.74	2.0	ng/L	10.0		87.4	70-130			
Surrogate: 13C-PFHxA	32.0		ng/L	40.0		80.1	70-130			
Surrogate: 13C-PFDA	30.8		ng/L	40.0		76.9	70-130			
Surrogate: d5-NEtFOSAA	142		ng/L	160		89.0	70-130			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level

Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.

No results have been blank subtracted unless specified in the case narrative section.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SOP 434-PFAAS in Water</i>	
Perfluorobutanoic acid (PFBA)	NH-P
Perfluorobutanesulfonic acid (PFBS)	NH-P
Perfluoropentanoic acid (PFPeA)	NH-P
Perfluorohexanoic acid (PFHxA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluorononanoic acid (PFNA)	NH-P
Perfluorodecanoic acid (PFDA)	NH-P
N-EtFOSAA	NH-P
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
N-MeFOSAA	NH-P
Perfluorododecanoic acid (PFDoA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Public Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2021
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2021
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021

20F0453



Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

Address: 21 N. Main St. #1 Wetherby VT
Project Location: Lees Falls Paperboard
161 W. Main St. #1 Wetherby VT
Project Number: 18-122
Project Manager: Alan Lepiak
Con-Test Quote Name/Number: B-20191126
Invoice Recipient: A. Lepiak
Sampled By:

http://www.contestlabs.com
CHAIN OF CUSTODY RECORD
39 Spruce Street
East Longmeadow, MA 01028

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	IP-1	6/9/20 13:40	13:40	G	GW	L				2	
2	IP-2	6/9/20 10:15	10:15	G	GW	L				2	
3	IP-3	6/9/20 15:37	15:37	G	GW	L				2	
4	IP-4	6/9/20 17:45	17:45	G	GW	L				2	
5	IP-6	6/10/20 08:45	08:45	G	GW	L				2	
6	IP-7	6/9/20 11:56	11:56	G	GW	L				2	
7	IP-8	6/9/20 10:30	10:30	G	GW	L				2	
8	Duplicate	6/9/20 13:40	13:40	G	GW	L				2	
9	Tap Blank	Lab supplied								1	

PEA 537.1

Client Comments:

Relinquished by: (signature) Date/Time: 6/10/20 11:05
 Received by: (signature) Date/Time: 6/10/20 11:05
 Relinquished by: (signature) Date/Time: 6/10/20 11:05
 Received by: (signature) Date/Time: 6/10/20 15:50
 Relinquished by: (signature) Date/Time: 6/10/20 15:50
 Received by: (signature) Date/Time:
 Relinquished by: (signature) Date/Time:
 Received by: (signature) Date/Time:

Requested Analysis: 7-Day 10-Day Field Filtered EXCEL
 PFAS 10-Day (std) Due Date: Lab to Filter
 1-Day 3-Day Field Filtered
 2-Day 4-Day Lab to Filter

Format: PDF EXCEL
 Other:
 CLP Like Data Pkg Required:
 Email To:
 Fax To #:

Preservation Code: I = Iced H = HCL M = Methanol N = Nitric Acid S = Sulfuric Acid B = Sodium Bisulfate T = Sodium Thiosulfate O = Other (please define)

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 T = Sodium Thiosulfate
 O = Other (please define)

Total Number Of: VIALS, GLASS, PLASTIC, BACTERIA, ENCORE

Glassware in the fridge? Y/N
 Glassware in freezer? Y/N
 Prepackaged Cooler? Y/N
 *Contest is not responsible for missing samples from prepacked coolers

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)

2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 T = Sodium Thiosulfate
 O = Other (please define)

PCB ONLY
 Soxhlet
 Non Soxhlet

Other: Chromatogram AIHA-LAP, LLC

VT Groundwater Enforcement Snds+
 Project Entity: Government Federal City
 Municipality: 21 J
 City: Brownfield

MA MCP Required
 MA State DW Required
 MA Certification Form Required
 CT RCP Required
 RCP Certification Form Required

Disclaimers: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine who analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples _____



con-test
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client LE Environmental

Received By [Signature] Date 6/11/20 Time 1550

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 5.7
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? n/a Were Samples Tampered with? n/a
Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? F

Is there enough Volume? T

Is there Headspace where applicable? n/a

Proper Media/Containers Used? T

Were trip blanks received? T

Do all samples have the proper pH? _____

Who was notified? _____
Who was notified? _____
Who was notified? _____

MS/MSD? F

Is splitting samples required? F

On COC? T

Acid n/a Base n/a

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Flashpoint		Col./Bacteria	2oz Amb/Clear
DI-		Other Glass		Other Plastic	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:



Brownfields Corrective Action Investigation Report
Long Falls Paperboard, Brattleboro, Vermont

APPENDIX F

Data Validation Report

**Data Validation Report
 Long Falls Paperboard
 Brattleboro, Vermont
 July 16, 2020**

Sampling Summary

The project scope as specified in LEE’s Site-Specific Quality Assurance Plan Addendum (SSQAPP Addendum) included collection of holding basin sludge samples (4 + duplicate), soil samples (3) and groundwater samples (8 + duplicate). The SSQAPP Addendum was prepared on February 13, 2020, modified on March 18, 2020, and approved by the Vermont Department of Environmental Conservation (DEC) and the USEPA Region 1 Brownfields Program on March 25, 2020.

Sampling Chronology and Analyses

Sample collection efforts were delayed from the scheduled presented in the approved SSQAPP Addendum due to the COVID 19 pandemic. Sludge and soil samples were collected on May 8, 2020, and were transported via courier to Con-Test Laboratory (East Longmeadow, MA) on May 8, 2020, to Bureau Veritas Laboratory on May 13, 2020 (Mississauga, Ontario) and to ALS Laboratory (Houston, TX) on May 15, 2020. Groundwater samples were collected on June 9-10, 2020, and were transported via courier to Con-Test on June 10, 2020.

The laboratories performed the following analyses:

Laboratory	Analyses Performed
Con-Test Analytical Laboratory	VOCs, SVOCs, PCBs, Total Metals, TCLP Metals, Percent Solids, and TPH in sludge and soil, PFAs in groundwater
Bureau Veritas	PFAs in sludge
ALS Laboratory	Dioxin in sludge and soil

Sampling Procedures and Protocols

Sampling was performed in accordance with the procedures specified in the SSQAPP addenda except as summarized below and described in detail in Section 10 of the summary report.

- Sludge-laboratory supplied container materials and preservatives for collection of sludge samples for analysis of VOCs, metals, and ignitibility varied from those outlined in SSQAPP Table F. Laboratory containers and instructions were used and followed during sampling.



- Groundwater-one monitoring well (MW-5) was buried beneath a large pile of paper sludge and could not be accessed for sampling on June 9-10, 2020.

Field data sheets and the field notebooks were reviewed to ensure proper documentation of the sampling conditions. All entries were made with permanent ink. Entries included the identity of the sampler, sampling location, time, and date. All entries and equipment used were recorded on the daily work reports.

The chain of custody forms were reviewed to ensure the sample identification, number, type and size of sample containers, preservatives used; and signatures were properly recorded and were in accordance with the SSQAPP addenda.

Sample Handling and Delivery

The laboratory cover sheets, sample acceptance forms and case narratives were reviewed. All samples adhered to the laboratories' acceptance policies. All samples arrived at the laboratories under chain-of-custody procedures and at appropriate temperature and sample condition, and all analyses were performed within the EPA Method specified holding times.

Laboratory Analytical Procedures

All samples were analyzed in accordance with the laboratory's SOPs with one exception. No deviations from laboratory protocols were noted on the laboratory cover sheets.

- Sludge:
 - The SSQAPP specified that Con-Test Analytical Laboratory would analyze sludge samples for VOCs, SVOCs, PCBs with Soxhlet extraction, total and TCLP RCRA 8 metals and vanadium, percent solids, total petroleum hydrocarbons, and PFAs. This laboratory work scope was completed without deviation except PFAs. Due to method development limitations, Con-Test sub-contracted this analysis to Bureau Veritas laboratory to fulfill the analytical requirements.
 - The SSQAPP specified that ALS Laboratory would analyze sludge and soil samples for dioxin. This laboratory work scope was completed without deviation.
- Soils: The SSQAPP specified that Con-Test Analytical Laboratory would analyze soil samples for VOCs, PAHs, PCBs with Soxhlet extraction, total RCRA 8 metals. This laboratory work scope was completed without deviation.
- Groundwater: The SSQAPP specified that Con-Test Analytical Laboratory would analyze groundwater samples for PFAs via EPA Method 537.1. This laboratory work scope was completed without deviation.

Blanks

Method blanks were prepared by Con-Test for all sludge and soil analyses performed (VOCs, SVOCs including PAHs, PCBs, TPH, metals) and reported no detection of compounds or analytes. No trip blank was supplied or submitted with the sludge or soil samples due to laboratory-specified sampling and container procedures. A trip blank accompanied the groundwater samples and was analyzed by Con-Test for PFAs via EPA Method 537.1. No PFAs were reported in the aqueous trip blank sample at or above the reporting limit. The laboratory method blank was analyzed for PFAs via Method 537.1 and none were reported at or above the reporting limit.

A method blank was prepared and analyzed by Bureau Veritas for PFAs and no PFAs were reported in the blank. These findings indicate that there was no detectable contamination of samples for any of the tested analytes while at the laboratory, or in transit for groundwater samples.

ALS Laboratory ran a method blank for dioxin congeners. Thirteen dioxin congeners were detected in the method blank, at concentrations below the minimum reporting level. All sample and method blank concentrations were flagged as “estimated” due to the low levels reported (below 0.3 parts per trillion). The detected concentrations were 1-3 orders of magnitude below the reported sample results, and are not thought to have a material effect on the usability of the data.

MS/MSD and LCS/LCSD and Surrogate Recovery

All laboratories performed matrix spike/matrix spike duplicate (MS/MSD) and laboratory control samples/laboratory control sample duplicate (LCS/LCSD) analysis. All MS and LCS analysis laboratory acceptance criteria except as noted:

- Con-Test’s case narrative for sludge and soil samples contains several MS/MSD and LCS/LCSD data qualifiers pertaining to the various analyses performed. These qualifiers affect the results for selenium, TPH, various VOCs, and SVOCs. They are not thought to have a material affect on the usability of the data. No VOCs or SVOCs were reported in the sludge samples. No VOCs or PAHs were reported in the soil samples, except for a low concentration of toluene in LF-6. Toluene was not one of the VOCs reference by the data qualifiers. Selenium was not detected in any of the sludge or soil samples. TPH was detected in the sludge samples, below 10% of the state threshold for hazardous waste. The concentrations may be biased low, but the reported concentrations are low enough that this should not affect the usability of the data.
- Con-Test’s case narrative for groundwater samples indicated that all reported results were within defined laboratory quality control objectives.
- ALS (dioxin): LSC recoveries for 1,2,3,4,6,7,8-HpDF and 2,3,7,8-TCDF were above the upper control limit. LSCD recoveries for these compounds were within limits. These

results may be slightly biased high. LCS recovery for OCDF was below the lower control limit while the LSCD results were within limits. These results may be biased low.

- Bureau Veritas' case narrative for PFAs in sludge samples indicated that all reported results were within defined laboratory quality control objectives.

RPD

Relative percent difference (RPD) values were calculated for the field duplicate samples collected (sludge and groundwater).

- All reported concentrations in the sludge sample (LF-2) and duplicate were within the allowable 50% RPD except for one dioxin congener (1,2,3,4,7,8-HxCDD), which had a RPD of 83.3%. This is not thought to have a material affect on the usability of the data because it was the only outlier of the eighteen congeners reported, and the Toxicity Equivalency Quotient (TEQ) as 2,3,7,8-TCDD of the sample and duplicate had an RPD of 18.4%.
- All reported concentrations in the groundwater sample (IP-1) and duplicate were within the allowable 30% RPD.

Reporting Limits

Laboratory reporting limits were compared with applicable regulatory criteria for each tested compound as published in the DEC Investigation and Remediation of Contaminated Properties Rule. All laboratory reporting limits were below the appropriate regulatory threshold criteria without exception.

Conclusion

Based on the findings presented above, all data should be accepted without condition. The noted QAQC qualifiers do not disqualify the data from being used for their intended cleanup planning purposes.

Respectfully Submitted,



Angela Emerson, EP
Project Quality Assurance Officer

Data Validation Summary Table
Lagoon Sludge Samples
Long Falls Paperboard, Brattleboro, VT
LEE #18-122



Sample Name	LF-1	LF-2	LF-3	LF-4	Duplicate LF-2
Lab sample number	20E0343-01	20E0343-02	20E0343-03	20E0343-04	20E0343-05
Date Sampled	5/8/20				
Date of Preparation/Extraction	5/8/20 (pH); 5/11/20 (VOCs, PCBs, % solids); 5/12/20 (TCLP metals); 5/14/20 (SVOCs, TPH, ignitibility); 5/15/20 (reactivity); 5/18/20 (total metals); 5/19/20 (PFAs, Dioxin/furan)				
Date of Analysis	5/8/20 (pH); 5/11/20 (VOCs, % solids); 5/12-13/20 (TCLP metals); 5/14/20 (PCBs, ignitibility); 5/16/20 (reactivity); 5/18/20 (SVOCs, TPH); 5/19-20/20 (total metals); 5/20/20 (PFAs), 6/10/20 (Dioxin/furan)				
Sample Type	Sludge				
Was analysis completed within EPA Method specified holding time?	Y	Y	Y	Y	Y
Were the samples properly handled under COC guidelines?	Y	Y	Y	Y	Y
Were the samples properly chilled? (0-6 degrees C)	Y	Y	Y	Y	Y
Were any compounds detected in blanks?	N	N	N	N	N
Were the samples properly labeled?	Y	Y	Y	Y	Y
Relative Percent Difference (RPD) acceptable? (<=50% RPD)	N/A	Y (2)	N/A	N/A	Y (2)
Were laboratory surrogate recovery concentrations acceptable?	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)
Were laboratory control samples and duplicates acceptable?	Y (1)	Y (1)	Y (1)	Y (1)	Y (1)
Reporting limits meet Form K values	Y	Y	Y	Y	Y
Are reporting limits below applicable standards?	Y	Y	Y	Y	Y

Notes:

Y=Yes, N=No, N/A=Not applicable to sample

Y(1) except as noted in data validation report, does not affect data usability.

Y(2) except for 1,2,3,4,7,8-HxCDD, does not affect data usability.

Relative Percent Difference Calculations
Holding Basin Sludge Samples
Long Falls Paperboard, Brattleboro, Vermont



<i>Sample</i>	<i>LF-2</i>	<i>Duplicate</i>	<i>Relative Difference (%)</i>
<i>PID reading (ppm)</i>	<i>0.1</i>		
<i>Sample Date</i>	<i>5/8/20</i>		
PCB Method 8082 (mg/kg)			
Aroclor - 1016	ND<0.12	ND<0.12	-
Aroclor - 1221	ND<0.12	ND<0.12	-
Aroclor - 1232	ND<0.12	ND<0.12	-
Aroclor - 1242	ND<0.12	ND<0.12	-
Aroclor - 1248	ND<0.12	ND<0.12	-
Aroclor - 1254	0.47	0.67	18
Aroclor - 1260	0.20	0.56	47
Aroclor - 1262	ND<0.12	ND<0.12	-
Aroclor - 1268	ND<0.12	ND<0.12	-
Total Metals M6010D (mg/kg)			
Arsenic	ND<4.9	ND<5.0	-
Barium	93	85	4
Cadmium	ND<0.49	ND<0.50	-
Chromium	42	47	6
Lead	60	56	3
Mercury	0.47	0.45	2
Selenium	ND<4.9	ND<5.0	-
Silver	ND<0.49	ND<0.5	-
Vanadium	200	180	5
Percent Solids M2540			
% Solids	65.2	65.3	0.1
Total Petroleum Hydrocarbons M8100 (mg/kg)			
TPH	3100	3300	3.1
Dioxin Method 8290 (ng/kg)			
TEQ as 2,3,7,8-TCDD	23.80	16.40	18.4
2,3,7,8-TCDD	4.17	3.50	8.7
1,2,3,7,8-PeCDD	1.78	0.927	31.5
1,2,3,4,7,8-HxCDD	10.2	0.928	83.3
1,2,3,6,7,8-HxCDD	12.8	8.0	23.3
1,2,3,7,8,9-HxCDD	7.66	3.98	31.6
1,2,3,4,6,7,8-HpCDD	340	122	47.2
OCDD	2930	1940	20.3
2,3,7,8-TCDF	73.0	66.0	5.0
1,2,3,7,8-PeCDF	2.68	1.55	26.7

Relative Percent Difference Calculations
Holding Basin Sludge Samples
Long Falls Paperboard, Brattleboro, Vermont



<i>Sample</i>	<i>LF-2</i>	<i>Duplicate</i>	<i>Relative Difference (%)</i>
<i>PID reading (ppm)</i>	<i>0.1</i>		
<i>Sample Date</i>	<i>5/8/20</i>		
Dioxin Method 8290 (ng/kg)			
2,3,4,7,8-PeCDF	3.28	2.7	9.7
1,2,3,4,7,8-HxCDF	3.110	1.73	28.5
1,2,3,6,7,8-HxCDF	1.48	0.959	21.4
1,2,3,7,8,9-HxCDF	1.82	1.88	1.5
2,3,4,6,7,8-HxCDF	2.33	1.23	30.9
1,2,3,4,6,7,8-HpCDF	111.0	69.3	23.1
1,2,3,4,7,8,9-HpCDF	2.67	1.88	17.5
OCDF	325	300	4.0
PFAs Method 537.1 (ng/kg)			
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA (ug/kg)	102	90	6
Perfluorobutanoic acid (PFBA)	0.91	0.74	10
Perfluoropentanoic acid (PFPeA)	68	61	5
Perfluorooctanoic acid (PFOA)	15	13	7
Perfluorononanoic acid (PFNA)	63	54	8
Perfluorodecanoic acid (PFDA)	6.8	6.2	5
Perfluoroundecanoic acid (PFUnA)	18	16	6
Perfluorododecanoic acid (PFDoA)	2.4	2.3	2
Perfluorotridecanoic acid (PFTrDA)	4.4	4.2	2
Perfluorotetradecanoic acid (PFTEDA)	ND<0.28	ND<0.28	-
Perfluorobutanesulfonic acid (PFBS)	ND<0.40	ND<0.40	-
Perfluoropentanesulfonic acid (PFPeS)	ND<0.17	ND<0.17	-
Perfluoroheptanesulfonic acid (PFHpS)	19	16	9
Perfluorooctanesulfonic acid (PFOS)	ND<0.54	ND<0.54	-
Perfluorodecanesulfonic acid (PFDS)	3.5	3.3	3
Perfluorooctane Sulfonamide (PFOSA)	64	57	6
N-EtFOSAA	6.5	5.5	8
N-MeFOSAA	ND<0.44	ND<0.44	-
4:2 Fluorotelomer sulfonic acid	ND<0.26	ND<0.26	-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<0.66	ND<0.66	-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<0.66	ND<0.66	-
Perfluorohexanoic acid (PFHxA)	1.8	1.4	13
Perfluorohexanesulfonic acid (PFHxS)	ND<0.28	ND<0.28	-
Perfluoroheptanoic acid (PFHpA)	8.3	6.3	14
Perfluorooctanesulfonamide (FOSA)	3.5	3.3	3

**Data Validation Summary Table
Soil Samples
Long Falls Paperboard, Brattleboro, Vermont
LEE #18-122**



Sample Name	LF-5	LF-6	LF-7
Lab sample number	20E0343-06	20E0343-07	20E0343-08
Date Sampled	5/8/20	5/8/20	5/8/20
Date of Extraction	5/11/20 (VOCs, PCBs, % solids); 5/14/20 (PAH); 5/18/20 (total metals); 5/19/20 (Dioxin/Furan)		
Date of Analysis	5/11/20 (VOCs, % solids); 5/14/20 (PCBs), 5/18/20 (PAH); 5/19-20/20 (total metals); 6/10/20 (Dioxin/furan)		
Sample Type	Soil	Soil	Soil
Was analysis completed within EPA Method specified holding time?	Y	Y	Y
Were the samples properly handled under COC guidelines?	Y	Y	Y
Were the samples properly chilled? (0-6 degrees C)	Y	Y	Y
Were any compounds detected in blanks?	N	N	N
Were the samples properly labeled?	Y	Y	Y
Relative Percent Difference (RPD) acceptable? (<=50% RPD)	N/A	N/A	N/A
Were laboratory surrogate recovery concentrations acceptable?	Y (1)	Y (1)	Y (1)
Were laboratory control samples and duplicates acceptable?	Y (1)	Y (1)	Y (1)
Reporting limits meet Form K values	Y	Y	Y
Are reporting limits below applicable standards?	Y	Y	Y

Notes:

Y=Yes, N=No, N/A=Not applicable to sample

Y(1) except as noted in data validation report, does not affect data usability.

**Data Validation Summary Table
Groundwater Samples
Long Falls Paperboard, Brattleboro, Vermont
LEE #18-122**



Sample Name	IP-1	IP-2	IP-3	IP-4	IP-6	IP-7	IP-8	Duplicate IP-1	Trip Blank
Lab sample number	20F0455-01	20F0455-02	20F0455-03	20F0455-04	20F0455-05	20F0455-06	20F0455-07	20F0455-08	20F0455-09
Date Sampled	6/9/20	6/9/20	6/9/20	6/9/20	6/10/20	6/9/20	6/10/20	6/9/20	6/10/20
Date of Extraction	6/16/20	6/16/20	6/16/20	6/16/20	6/16/20	6/16/20	6/16/20	6/16/20	6/16/20
Date of Analysis	6/21/20	6/21/20	6/21/20	6/21/20	6/21/20	6/22/20	6/22/20	6/22/20	6/21/20
Sample Type	Aqueous	Aqueous							
Was extraction completed within EPA Method specified holding time?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was analysis completed within EPA Method specified holding time?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Were the samples properly handled under COC guidelines?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Were the samples properly chilled? (0-10 degrees C)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Were any compounds detected in blanks?	N	N	N	N	N	N	N	N	N
Were the samples properly labeled?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Relative Percent Difference (RPD) acceptable? (<=30% RPD)	Y	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A
Were laboratory surrogate recovery concentrations acceptable?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Were laboratory control samples and duplicates acceptable?	Y	Y	Y	Y	Y	Y	Y	Y	Y
Reporting limits meet Form K values	Y	Y	Y	Y	Y	Y	Y	Y	Y
Are reporting limits below applicable standards?	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Y=Yes, N=No, N/A=Not applicable to sample

**Relative Percent Difference Calculations
Groundwater Samples
Long Falls Paperboard, Brattleboro, VT**



	<i>IP-1</i>	<i>Duplicate</i>	<i>RPD</i>
	<i>6/9/20</i>		
PFAs EPA Method 537.1			
Perfluorobutanoic acid (PFBA)	2.4	2.7	6
Perfluorobutanesulfonic acid (PFBS)	ND<2.0	ND<2.0	-
Perfluoropentanoic acid (PFPeA)	3.3	3.7	6
Perfluorohexanoic acid (PFHxA)	3.9	4.1	3
Perfluorohexanesulfonic acid (PFHxS)	ND<2.0	ND<2.0	-
Perfluoroheptanoic acid (PFHpA)	ND<2.0	ND<2.0	-
Perfluoroheptanesulfonic acid (PFHpS)	ND<2.0	ND<2.0	-
Perfluorooctanoic acid (PFOA)	8.0	8.6	4
Perfluorooctanesulfonic acid (PFOS)	ND<2.0	ND<2.0	-
Perfluorooctanesulfonamide (FOSA)	ND<2.0	ND<2.0	-
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND<2.0	ND<2.0	-
Perfluorononanoic acid (PFNA)	ND<2.0	ND<2.0	-
Perfluorodecanoic acid (PFDA)	ND<2.0	ND<2.0	-
Perfluorodecanesulfonic acid (PFDS)	ND<2.0	ND<2.0	-
N-EtFOSAA	ND<2.0	ND<2.0	-
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND<2.0	ND<2.0	-
Perfluoroundecanoic acid (PFUnA)	ND<2.0	ND<2.0	-
N-MeFOSAA	ND<2.0	ND<2.0	-
Perfluorododecanoic acid (PFDoA)	ND<2.0	ND<2.0	-
Perfluorotridecanoic acid (PFTrDA)	ND<2.0	ND<2.0	-
Perfluorotetradecanoic acid (PFTA)	ND<2.0	ND<2.0	-
Sum of PFOS, PFOA, PFHxS, PFHpA, PFNA	8.0	8.6	4