HOUSE of REPRESENTATIVES

STATE OF MICHIGAN

Appropriations Requests for Legislatively Directed Spending Items

1. The sponsoring representative's first name:
   Greg

2. The sponsoring representative's last name:
   Alexander

3. The cosponsoring representatives' names. All cosponsors must be listed. If none, please type 'n/a.' A signed letter from the sponsor approving the co-sponsorship and a signed letter from the member wishing to co-sponsor are required. Attach letters at question #9 below.
   n/a

4. Name of the entity that the spending item is intended for:
   City of Harbor Beach

5. Physical address of the entity that the spending item is intended for:
   766 State Street, Harbor Beach, MI 48441

6. If there is not a specific recipient, the intended location of the project or activity:
   City of Harbor Beach - North Park Campground

7. Name of the representative and the district number where the legislatively directed spending item is located:
   Greg Alexander | District 98

8. Purpose of the legislatively directed spending item. Please include how it provides a public benefit and why it is an appropriate use of taxpayer funding. Please also demonstrate that the item does not violate Article IV, S 30 of the Michigan Constitution.
   The purpose of this legislatively directed spending item is to provide $1,000,000 in state funding to support the City of Harbor Beach's expansion of the North Park Campground. This project will add 87 new campsites to one of Michigan's most in-demand municipal campgrounds, located on prime Lake Huron waterfront adjacent to the Harbor Beach Municipal Marina. The expansion will address overwhelming public demand for access to outdoor recreation, boost local economic activity, and generate self-sustaining revenue for public park maintenance and improvements.

Public Benefit

This project delivers substantial public benefit across multiple dimensions. First, it enhances access to affordable, public outdoor recreation for Michigan residents and visitors. The campground is regularly booked to capacity, with a long waiting list, demonstrating strong public interest. Expanding the site directly addresses this need while improving the quality and availability of recreational infrastructure in the region.

Second, the economic impact is significant. According to a study conducted in partnership with Michigan State University, the current North Park Campground contributes approximately $1.5 million in regional economic activity each year, supports 16 local jobs, and produces $773,604 in total regional income. The proposed expansion is expected to increase economic activity by an additional $1.05 million, create 11 more jobs, and generate $542,073 in additional regional income. This directly supports local small businesses, hospitality, and service sectors—many of which depend on seasonal tourism driven by the campground's popularity.

Third, the expansion creates a sustainable revenue stream for the City of Harbor Beach, which will use campground income to maintain and develop other City parks and recreational spaces—relieving pressure on the general fund and reducing the financial burden on local taxpayers.

Appropriate Use of Taxpayer Funding

This spending item represents a strategic and fiscally responsible use of taxpayer dollars. It supports long-term economic development, creates jobs, increases access to outdoor recreation, and promotes environmental stewardship by encouraging sustainable land use. Importantly, the expansion will generate ongoing, independent revenue that can be reinvested into public services and park maintenance, ensuring a lasting return on the state's investment.

Constitutional Compliance

The $1,000,000 appropriation serves a clear public purpose by supporting public recreation, economic development, and municipal infrastructure. As such, it is consistent with and does not violate Article IV, Section 30 of the Michigan Constitution, which prohibits direct appropriations to private entities unless they serve a public purpose. In this case, the funds are directed to the City of Harbor Beach, a municipal entity, to expand a publicly owned and operated campground. The project enhances public assets and delivers measurable public outcomes, ensuring full constitutional compliance.

9. Attach documents here if needed:
   Attachments added to the end of this file.

10. The amount of state funding requested for the legislatively directed spending item.

1000000

11. Has the legislatively directed spending item previously received any of the following types of funding? Check all that apply.
    ["None"]

12. Please select one of the following groups that describes the entity requesting the legislatively directed spending item:
    Local unit government

13. For a non-profit organization, has the organization been operating within Michigan for the preceding 36 months?
    Not applicable

14. For a non-profit organization, has the entity had a physical office within Michigan for the preceding 12 months?
    Not applicable

15. For a non-profit organization, does the organization have a board of directors?
    Not applicable

16. For a non-profit organization, list all the active members on the organization's board of directors and any other officers. If this question is not applicable, please type 'n/a.'
    n/a

17. "I certify that neither the sponsoring representative nor the sponsoring representative's staff or immediate family has a direct or indirect pecuniary interest in the legislatively directed spending item."
    Yes, this is correct

18. Anticipated start and end dates for the legislatively directed spending item:
    Start: ASAP | End: 3 Months after Start

19. "I hereby certify that all information provided in this request is true and accurate."
    Yes

SME Project No. _____

PHASE I ENVIRONMENTAL ASSESSMENT (ESA)
PROPERTY OWNER/OCCUPANT QUESTIONNAIRE

This questionnaire concerns the current and historical uses and conditions of the referenced property and will be included within the Phase I ESA report. Questionnaire answers should be based upon the owner/occupant's reasonable knowledge of current and historical use and activities at the property.

Instructions:

1. Fill in all blanks.
2. Indicate "NA" (not applicable), if appropriate.
3. Attach additional pages with your signature if additional space is required.

Property Name: North Park Campground Waterfront Annex

Property Location: Old Shore Road, Harbor Beach

County: Huron State: Michigan

Questionnaire Completed By/Title: Ron Wruble City Director

Company/ Phone Number: 989-479-3363 Ron's Cell 989-551-3393

On Behalf Of (if applicable): City of Harbor Beach

Year of Purchase/Lease (circle one): City owned for years

Time Period of Site Knowledge: 75 years

Names/Phone Numbers of Former Owners/Occupants:

Owners: unknown

Occupants: N/A

Names/Phone Numbers of other persons who have knowledge of property history:

Mike Jurgess 989-550-1702

PROPERTY DESCRIPTION AND USE

1. Provide a general description of the property:

☑ Undeveloped ☐ Vacant ☐ Wooded ☐ Buildings ☑ Other

2. Describe the structures present on the property (number, size, and construction date):

N/A

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3. Identify utilities available to the property and indicate the provider of each utility.

☐ Electric Provider: DTE
☐ Gas Provider: Consumers Power
☐ Sanitary Sewer Provider: City of Harbor Beach
☐ Storm Sewer Provider: City of Harbor Beach
☐ Municipal Water Provider: City of Harbor Beach

4. Are there any easements at the property?:

☐ Yes ☑ No

If yes, describe the type and location of the easements: _____

_____

_____

5. To the best of your knowledge, identify if the following were formerly (F) or are currently (C) present on the property. Select NA if not applicable to the property.

F	C	NA	
☐	☐	☑	On-site water supply wells
			Location: _____
☐	☐	☑	Septic fields, drain fields, or dry wells
			Location: _____
☐	☐	☑	Abandoned wells
			Location: _____
☐	☐	☑	Lagoons, settling ponds
			Location: _____
☐	☐	☑	Monitoring wells
			Location: _____
☐	☐	☑	Underground sumps, lines, basins, or tanks
			Location: _____
☐	☐	☑	Aboveground storage tanks (ASTs)
			Location: _____
☐	☐	☑	Transformers or capacitors
			Location: _____
☐	☐	☑	Other PCB containing equipment
			Location: _____

SME Project No. _____

☐	☐	☑	Mines or pits
			Location: _____
☐	☐	☑	Hidden chemical materials or wastes
			Location: _____
☑	☐	☐	Dumps or landfills
			Location: all over parcel
☐	☐	☑	Oil or gas wells or test holes
			Location: _____
☐	☐	☑	Unusual fill areas, such as foundry sand, etc.
			Location: _____
☐	☐	☑	Barrel or drum storage areas
			Location: _____

6. What is the general use of property:

☐ Industrial ☐ Commercial ☐ Residential ☑ Other

7. What products/services are produced/provided at the property?: N/A

8. What type of on-site processes are used at the property?: N/A

9. What types of equipment are used at the property?: N/A

10. What raw materials are used at the property?: N/A

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11. Are there any environmental permits (e.g. solid waste disposal, hazardous waste disposal, air emissions, wastewater, stormwater/NPDES, etc.) or environmental compliance plans (e.g. SPCC, SWPPP) associated with the property?

☐ Yes ☑ No

If yes, list the applicable permit(s): There may be an expired solid waste disposal permit.

PROPERTY AND ADJOINING PROPERTIES - CURRENT AND HISTORICAL USE

12. Are there any liquid or solid wastes generated at the property?

☐ Yes ☑ No ☐ Unknown

If yes, please list the monthly volume generated and explain disposal method: _____

13. Is the property or any adjoining property currently used for an industrial use?

☐ Yes ☑ No ☐ Unknown

☐ Property ☐ Adjoining

If yes, explain briefly: _____

14. Is the property or any adjoining property currently used as a gasoline station, vehicle repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☐ Yes ☑ No ☐ Unknown

☐ Property ☐ Adjoining

If yes, explain briefly: _____

Please complete the current land use table below:

	Name/Owner	**Land Use**
Property		
North adjoining properties	Sandra Asselin LE/Trust	Residence
South adjoining properties	United States of America	Coast Guard Station
East adjoining properties	Lake Huron	N/A
West adjoining properties	City of Harbor Beach	Vacant Land

15. Has the property or any adjoining property been used for an industrial use in the past?

☐ Yes ☑ No ☐ Unknown

☐ Property ☐ Adjoining

If yes, explain briefly: _____

16. Has the property or any adjoining property historically been used as a gasoline station, vehicle repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?

☑ Yes ☐ No ☐ Unknown

☑ Property ☐ Adjoining

If yes, explain briefly: Landfill

Please complete the historical land use table below:

	Owner	Use	Dates
Previous use of Property	City of Harbor Beach	Landfill	? -1990
Previous use of properties to north		Residence	
Previous use of properties to south	City of Harbor Beach	Landfill	? - 1990
Previous use of properties to east	Lake Huron		
Previous use of properties to west	City of Harbor Beach	Vacant	

CURRENT AND HISTORICAL PROPERTY CONDITIONS

17. Are there currently, or have there been previously, any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals (individual containers greater than 5 gallons or greater than 50 gallons total) stored on or used at the property or at the facility?

☐ Yes ☐ No ☑ Unknown

If yes, explain briefly: _____

18. Are there currently, or have there been previously, any industrial drums (typically 55-gallon) or sacks of chemicals stored on the property or at the facility?

☐ Yes ☑ No ☐ Unknown

If yes, describe the chemicals stored on the property (volume, contents and dates of storage): _____

19. Have any hazardous substances, petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials been dumped above grade, buried, and/or burned/incinerated on the property?

☐ Yes ☐ No ☑ Unknown

If yes, identify the location and date(s): location unknown - dates unknown

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20. Are there currently, or have there been previously, any registered or unregistered storage tanks (aboveground or underground) located on the property?

☐ Yes ☑ No ☐ Unknown

If yes, identify the location, date(s) of use, and date(s) of removal (if applicable):_____

_____

_____

21. Are there currently, or have there been previously, any vent pipes, fill pipes protruding from the ground, areas of patched concrete or asphalt, or access ways indicating an underground storage tank on the property?

☐ Yes ☑ No ☐ Unknown

If yes, identify the location:_____

_____

22. Are there transformers, capacitors, or hydraulic equipment on the property?

☐ Yes ☑ No ☐ Unknown

If yes, are there any records indicating the presence of PCBs?:_____

_____

23. Is there currently, or has there been previously, any stained soil on the property?

☐ Yes ☐ No ☑ Unknown

If yes, identify the location of the stained soil and date(s) it was present on the property:_____

_____

24. Has fill dirt been brought onto the property that is of unknown origin? Has fill dirt been brought onto the property that originated from a contaminated site?

☐ Yes ☑ No ☐ Unknown

If yes, identify the date and location of fill placement:_____

_____

25. Are there currently, or have there been previously, any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?

☐ Yes ☐ No ☑ Unknown

If yes, identify the location and dates:_____

_____

26. Are there currently, or have there been previously, any pits, ponds, or lagoons associated with waste treatment or disposal located on the property?

☐ Yes ☑ No ☐ Unknown

If yes, identify the location and dates:_____

27. Excluding storm water and sanitary waste discharge into an existing storm/sanitary sewer, does the property discharge wastewater on or adjacent to the property?

☐ Yes ☑ No ☐ Unknown

If yes, describe the type of wastewater and identify discharge location:_____

28. If the property is served by a private well or non-public water system, have contaminants been identified in the well or system that exceed applicable guidelines? Has the well been designated as contaminated by any government environmental/health agency?

☐ Yes ☑ No ☐ Unknown

If yes, identify the contaminants and dates of exceedances:_____

PREVIOUSLY IDENTIFIED ENVIRONMENTAL CONDITIONS

29. Have you been informed of the current or past existence of hazardous substances, petroleum products, or environmental violations with respect to the property or any facility located on the property?

☐ Yes ☑ No ☐ Unknown

If yes, briefly explain:_____

30. Do you have knowledge of any environmental site assessment(s) of the property (e.g., Phase I ESA, Phase II ESA) that indicated / did not indicate the presence of hazardous substances or petroleum products on, or contamination of, the property?

☐ Yes ☑ No ☐ Unknown

If yes, briefly explain:_____

a) If the property is in Michigan, has a Baseline Environmental Assessment (BEA) been prepared for the property? **OR**
b) If the property is in Indiana, has a Comfort/Site Status Letter been prepared for the property? **OR**
c) If the property is in Ohio, has a Covenant Not to Sue been prepared for the property?

☐ Yes ☑ No ☐ Unknown

If yes, briefly explain:_____

31. Are you aware of the existence of environmental reports and permits; UST, AST, and underground injection system registrations; material safety data sheets; community right-to-know plans; safety and spill prevention plans; hydrogeologic reports; notices of past or current violations of environmental laws; hazardous waste generator notices or reports; geotechnical studies; risk assessments; and, recorded activity and use limitations.

☐ Yes ☐ No ☑ Unknown

If yes, briefly explain:_____

32. Do you know of any pending, threatened, or past lawsuits or administrative proceedings concerning the release of any hazardous substances or petroleum products involving the property or any facility located on the property?

☐ Yes ☑ No ☐ Unknown

If yes, briefly explain:_____

33. Do you have any knowledge of environmental liens or government notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?

☐ Yes ☑ No ☐ Unknown

If yes, briefly explain:_____

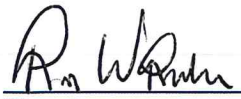
34. Are you aware of any activity and land use limitations (engineering controls or institutional controls/land use restrictions) that are in place at the property and/or have been filed or recorded in a registry under federal, tribal, state, or local law?

☐ Yes ☑ No ☐ Unknown

If yes, identify limitation/restriction:_____

SME Project No. _____

RonWruble
Printed Name


Signature

City of Harbor Beach
Company

City Director
Title

5-23-22
Date

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

FORMER HARBOR BEACH DUMP
A PORTION OF 836 HURON AVENUE NORTH
HARBOR BEACH, MICHIGAN

SME Project Number: Project number 88212.00.005.007
June 28, 2023

Funded by: Tuscola County EDC Coalition Cooperative Agreement # BF-00E03045-0

1685 Champagne Drive East
Saginaw, MI 48604

T (989) 684-6050

www.sme-usa.com

June 28, 2023

Mr. Ron Wruble
The City of Harbor Beach
766 State Street
Harbor Beach, Michigan 48441

Via E-Mail: rwruble@harborbeach.com

RE: Phase II Environmental Site Assessment Report
Former Harbor Beach Dump
A Portion of 836 Huron Avenue North
Harbor Beach, Michigan
SME Project No.: 088212.00.005.007

Dear Mr. Wruble:

We have completed the Phase II Environmental Site Assessment (ESA) of the above-referenced property, hereinafter referred to as the Property. Our Phase II assessment activities were funded by a United States Environmental Protection Agency (USEPA) Brownfield Assessment Grant BF-00E03045-0 for hazardous substances and petroleum awarded to the Tuscola County EDC Coalition.

We conducted the Phase II ESA in accordance with the Sampling and Analysis Plan prepared for the project that was approved by the USEPA via e-mail on August 2, 2022. The Phase II ESA was conducted consistent with industry standards according to the objectives identified in the SAP.

Thank you for the opportunity to provide these services. If you have any questions concerning this report, or if additional services are required, please call.

Sincerely,

SME

Myles G. Jackman
Staff Geologist

Brian C. Berger, PE
Senior Consultant

Enclosure: Phase II Environmental Site Assessment Report Dated: June 28, 2023

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1. INTRODUCTION

We prepared this report to document the results of a Phase II Environmental Site Assessment (ESA) of the North Park Campground Waterfront Annex located on the northeast portion of a 63 acre parent parcel with an address of 836 Huron Avenue North in Harbor Beach, Michigan herein after referred to as "the Property". The Property was formerly utilized as the Harbor Beach Dump and the location is shown on Figure 1. We conducted the assessment in general accordance with the EPA-approved Sampling and Analysis Plan (SAP), dated July 15, 2022 and Quality Assurance Project Plan (QAPP).

1.1 SITE DESCRIPTION AND BACKGROUND

The Property consists of approximately 8 acres of grass and tree-covered land. A pole-mounted transformer was present on the southwest portion of the Property with two concrete filled drums and several areas of asphalt and concrete debris are located on the central and northeast portions of the Property. The Property features are shown on Figure 2. The area north of the Property consists of vacant land and residential developments. The United States Coast Guard Station, a museum and the Harbor Beach Marina are present south of the Property. Residential and wooded land, a campground, and a café are present to the west of the Property. Lake Huron is located east of the Property.

We conducted a Phase I ESA of the Property in July 2022. Based on our historical research, the Property was vegetated land from 1937 to the 1960s. Between 1964 and 1993, areas of exposed soil were present on the Property that were potentially associated with a dump/landfill. By 1993, the Property appeared to be vegetated land and was vacant through 2020. At the time of the Phase II ESA, the Property consisted of grass and tree-covered land.

The July 11, 2022 Phase I ESA identified the following recognized environmental condition (REC):

- The potential release of hazardous substances or petroleum products associated with a former dump/landfill on the Property.

No significant data gaps or limiting conditions representing significant data gaps were identified in connection with the Phase I ESA.

1.2 PURPOSE

We designed the scope of the assessment and prepared the SAP for this Phase II ESA to further evaluate the REC identified in the Phase I ESA and provide information about the environmental condition of the Property.

2. SCOPE OF ASSESSMENT

The following sections discuss the scope of work performed at the Property, sampling locations and rationales.

2.1 GENERAL SCOPE

We completed the following scope of services at the Property:

- Subcontracted Ground Penetration Radar Systems (GPRS) to conduct a magnetometer survey to evaluate the presence of subsurface anomalies associated with the former dump/landfill.
- Advanced 12 soil borings (SB1 through SB12) on August 9, 2022.

- Submitted 12 soil samples, 3 groundwater samples, and associated quality control (QC) samples to Fibertec Environmental Services' laboratory in Holt, Michigan for analysis of one or more of the following analytes or analyte groups: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), per-and polyfluoroalkyl substances (PFAS), arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and/or zinc (Michigan 10 Metals).
- Prepared this Phase II ESA report to document field activities and analytical results.

2.2 SAMPLING LOCATION AND RATIONALE

We advanced SB1 through SB12 with a truck-mounted direct push drill rig. The locations of the soil borings are shown on Figure 2. Our proposed sample locations and rationale are described below:

- Soil borings SB1 through SB11 were advanced to evaluate areas of the Property where surface disturbances presumed to be associated with landfilling were depicted on historical aerial photographs. The locations of SB1 through SB4 were biased toward areas where concrete and asphalt debris were observed during the Phase I ESA reconnaissance.
- Soil boring SB12 was advanced on the west portion of the Property outside the area of landfilling to provide general coverage of soil and groundwater conditions.

One deviation from the SAP was noted and was associated with the analysis plan. One soil sample and one groundwater sample were analyzed for per- and polyfluoroalkyl substances (PFAS). The analysis of PFAS was not included in the SAP; however, the potential disposal of PFAS containing materials in the former Harbor Beach Dump was identified following completion of the Phase I ESA.

3. PROCEDURES

Summaries of our procedures for the soil borings, sampling activities, decontamination, and chemical analyses are summarized in the following subsections. SME's field representative collected soil and groundwater samples according to the methods described in our standard operating procedures (SOPs) that are available in the EPA-approved QAPP.

3.1 GEOPHYSICAL SURVEY

A geophysical investigation of the Property was completed by Ground Penetrating Radar Systems (GRPS) of on August 5, 2022. The survey consisted of using electromagnetic induction (EMI) equipment. The purpose of the survey was to identify potential areas of buried metallic debris consistent with the historic dumping on the Property. The summary report is located in Appendix A.

3.2 SOIL SAMPLING

We advanced the 12 soil borings using hydraulically driven, direct-push coring equipment. Each soil sample was collected using a 4-foot long, 2-inch outside-diameter, GeoProbe® MacroCore® Sampler fitted with a single-use, disposable, acetate liner. The soil in each sample was visually evaluated, and representative samples were collected from each soil unit for visual classification in general accordance with ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). A portion of each soil sample was used for field screening of ionizable vapors using a calibrated photoionization detector (PID) equipped with a 10.6 eV lamp. Field screening consisted of placing a portion of the sample in a sealed plastic bag for headspace analysis for the emission of ionizable vapors. The tip of the PID was inserted in the headspace of the bag, and PID readings were recorded on our soil boring logs. Detailed information regarding the soil conditions encountered at each boring is documented on the soil boring logs in Appendix B.

The amount of soil collected at each sampling location was dependent on chemical analyses requirements. First, soil samples intended for VOC laboratory analyses were removed from the sample liner and placed in methanol-preserved 40-milliliter (mL) glass vials following U.S. EPA Method 5035A. Soil volumes sufficient for analysis of PFAS were transferred directly from the sample liner to laboratory provided pre-cleaned 8-ounce high-density polyethylene (HDPE) container and a 4-ounce glass jar. Soil volumes sufficient for analyses of additional parameters (SVOCs/PAHs, PCBs, and metals) were then removed from the sample liner and homogenized prior to transfer to pre-cleaned, 8-ounce, glass jars provided by the analytical laboratory.

3.3 GROUNDWATER SAMPLING

Groundwater samples were collected from SB10, SB11, and SB12. At SB11 where groundwater samples were submitted for PFAS analysis, the samples were collected using a decontaminated, stainless-steel Geoprobe Systems® Groundwater Sampler connected to the drilling rods. At this location, the depth to groundwater was identified by evaluating the recovered soil samples for the transition from moist to saturated soil as opposed to gauging the open boreholes with a water level meter. Groundwater samples that were not to be analyzed for PFAS (SB10 and SB12) were obtained by installing temporary monitoring wells in completed boreholes. Each temporary monitoring well was constructed with a new 5-foot-long, 1-inch diameter, 0.010-inch slotted (ten-slot) PVC screen with a pre-fabricated silica sand pack. Each well was installed such that the screen intersected the depth groundwater was encountered.

After the groundwater sampler was in place or after gauging activities were complete in the temporary wells, we purged groundwater with a variable flow rate, portable peristaltic pump set at a low flow pumping rate of generally 200 milliliters/minute (mL/min) or less. PFAS-free, clean, HDPE tubing was utilized for purging and sampling from the groundwater sampler. Clean, 0.375-inch, outside-diameter silicone and polyethylene tubing was utilized to collect groundwater samples from temporary monitoring wells. During purging, effluent groundwater was monitored periodically for pH, temperature, and specific conductivity using field instrumentation. We also monitored drawdown during well purging activities using an electronic water level meter.

After the parameters stabilized, we collected a groundwater sample from the temporary groundwater monitoring well. The groundwater samples were transferred directly into the following laboratory-supplied containers: 40-mL glass vials preserved with hydrochloric acid (VOCs), 1-liter amber colored glass jar (PAHs, SVOCs), 250-mL plastic bottle preserved with nitric acid (metals) and two 250-mL HDPE containers (PFAS).

3.4 SOIL BORING RESTORATION

We returned residual soil cuttings and purged groundwater to their corresponding borehole after soil and groundwater sampling activities were completed. We also restored the surface materials to the best of our ability.

3.5 FIELD QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

3.5.1. NON-PFAS QUALITY ASSURANCE (QA)

SME's field representative wore a new pair of disposable nitrile sampling gloves for each sample to minimize the potential for cross-contamination. Direct-push sampling equipment was decontaminated with high-pressure, hot water before use and between sample locations. We decontaminated other soil sampling equipment with a laboratory grade detergent mixed with distilled water, and rinsed equipment with distilled water before each use. New, pre-cleaned well materials and tubing were used for the collection of groundwater samples.

The analytical laboratory supplied pre-preserved, pre-cleaned containers for sample collection. After sample collection, the containerized soil and groundwater samples were logged on a chain-of-custody

and kept on ice or refrigerated until delivery to the laboratory. Our field staff followed chain-of-custody procedures to document the sample handling sequence. Field instrument calibration, sample handling and custody requirements, and QA procedures were consistent with those described in the approved project QAPP.

3.5.2 NON-PFAS QUALITY CONTROL (QC)

We collected field duplicate samples (one soil and one groundwater) to evaluate matrix homogeneity and the precision of sampling activities. We collected soil and groundwater samples for site-specific matrix spike and matrix spike duplicate (MS/MSD) analyses to evaluate sample matrix recovery and accuracy. We collected one aqueous equipment blank to evaluate the potential for cross-contamination during sample collection. We also included one aqueous trip blank to evaluate the potential for cross-contamination during sample storage and transport to the laboratory, and one methanol blank to evaluate potential contaminants in the laboratory-provided methanol.

3.5.3 PFAS QA/QC

The probability for false detection in PFAS samples is high due to the low laboratory reporting limits and the potential for many sources of cross-contamination. To minimize the potential for false positives, SME field personnel followed the sampling preparation and sample collection procedures presented in EGLE's General PFAS Sampling Guidance, Revised October 16, 2018; Groundwater PFAS Sampling Guidance, dated October 2018.

Prior to mobilizing, we took care to wear PFAS-free clothing (where possible) and avoid known PFAS-containing products prior to and during sampling activities. In the field, PFAS-related sampling activities were completed first (i.e., PFAS-related soil borings were advanced first and samples for PFAS analyses were collected first). All sampling equipment was decontaminated with high-pressure hot water and triple-rinsed with PFAS-free deionized water before use and between PFAS sampling locations. New, PFAS-free, HDPE and silicone tubing were used in conjunction with the peristaltic pump at PFAS sampling locations. The analytical laboratory also supplied pre-cleaned, PFAS-free containers for sample collection.

We collected and analyzed nine quality control samples specific to PFAS. We collected field duplicate soil and groundwater samples to evaluate matrix homogeneity and the precision of sampling activities. We collected soil and groundwater samples for site-specific MS/MSD analyses to evaluate sample matrix recovery and accuracy. We also collected two aqueous equipment blanks by running laboratory provided PFAS-free water through the following articles of decontaminated soil and groundwater sampling equipment: the driller's cutting shoe and a new piece of HDPE tubing used for groundwater sampling. One laboratory prepared aqueous trip blank containing PFAS free water was submitted for PFAS analysis to evaluate the potential for cross-contamination during sample storage and transport to the laboratory.

3.6 CHEMICAL ANALYSES

We submitted twelve soil samples, three groundwater samples, and associated QC samples to Fibertec Environmental Services for chemical analysis of VOCs, SVOCs/PAHs, PCBs, and/or metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc). In addition, one soil sample, one groundwater sample, and associated QC samples were submitted to Eurofins Environmental Testing for analysis of PFAS.

We also submitted the soil samples from SB1, SB4, SB6, SB9 and Soil Dup for analysis of fine/coarse lead fractions in accordance with EGLE guidance because total lead exceeded 75,000 µg/kg. Total chromium was measured at a concentration above the most restrictive criterion for hexavalent chromium in multiple soil samples. Therefore, the soil sample from SB1, which contained the highest concentration of chromium, was selected for analysis of hexavalent chromium.

Fibertec Environmental Services analyzed the samples using the reference methods listed below:

- VOCs – U.S. EPA Method 8260 (soil and groundwater)
- SVOCs/PAHs – U.S. EPA Method 8270/8270 SIM (soil and groundwater)
- PCBs – U.S. EPA Method 8082A (soil and groundwater)
- Arsenic, barium, cadmium, chromium, copper, lead, selenium, silver and zinc – U.S. EPA Method 6020 (soil and groundwater)
- Mercury – U.S. EPA Method 7471/7470 (soil and groundwater)
- Hexavalent chromium – Method 7196 (soil)

Eurofins Environmental Testing analyzed the samples using the reference methods below.

- PFAS – Method 537 Modified (Isotope Dilution)

The laboratory analysis reports, complete list of specific analytical reference methods, reporting limits, and chain of custody documentation for the samples collected on the Property are included in Appendix C.

4. RESULTS

The geophysical survey results, surface and subsurface conditions encountered, and results of chemical analyses are summarized below.

4.1 GEOPHYSICAL SURVEY

The GPRS Job Summary is located in Appendix A. The EMI survey identified several areas of potential buried metal debris on the Property. The locations of SB1 through SB11 were adjusted to evaluate the areas where metal debris was identified.

4.2 SURFACE AND SUBSURFACE CONDITIONS

Descriptions of the soil conditions encountered at the soil boring locations are documented on the soil boring logs (Appendix B). The surface materials consisted of topsoil. Sand and clay fill was encountered beneath the surface materials at each soil boring location. The fill contained trace amounts of glass, plastic, brick and wood fragments, rubber, and slag, and extended to depths ranging from 3.5 to 11 feet below ground surface (bgs). Borings SB4, SB5, SB7, and SB8 were terminated in the fill material. Native fine to coarse sand, silt, and/or sandy silt were encountered beneath the fill materials at SB1 through SB3, SB6, and SB9 through SB12. The native sandy silt extended to the explored depth of the borings. PID measurements greater than 1 part per million (ppm) were noted during field screening of the soil samples at SB3, SB4, and SB7. No odors or staining were observed during field screening of the soil samples.

Groundwater was encountered at SB10, SB11, and SB12 at depths between 3 and 6 feet bgs. Groundwater was not encountered at the remaining soil boring locations.

4.3 RESULTS OF CHEMICAL ANALYSES

Results from the chemical analyses performed on soil and groundwater samples collected during our assessment are summarized in the following paragraphs and are presented in Tables 1 and 2 respectively. We compared the soil chemical analyses results to the Part 201 Generic Residential Cleanup Criteria (Part 201 criteria) to evaluate if contamination was present. We also compared the soil and groundwater results to EGLE's September 4, 2020, proposed Residential and Nonresidential VIAP Screening Levels to screen for potential vapor intrusion concerns to future structures that may be

developed at the Property. Laboratory analysis reports and chain-of-custody documentation are included in Appendix C.

4.3.1 SOIL SAMPLE RESULTS

Benzene, tetrachloroethylene and/or trichloroethylene were measured above Part 201 criteria in the soil samples collected from SB1, SB7, SB9, and SB10. Benzo(a)pyrene, fluoranthene, and/or phenanthrene were measured above Part 201 criteria in the soil samples collect from SB7 and SB8. PCBs were measured above Part 201 criteria in the soil sample collected from SB6. Arsenic, cadmium, copper, lead mercury, selenium, silver, and zinc were measured above Part 201 criteria in one or more of the soil samples. No other target compounds were measured at concentrations exceeding the Part 201 criteria.

Benzene, chlorobenzene, 1,4-dichlorobenzene, ethylbenzene, tetrachloroethylene, trichloroethylene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and xylenes were measured at concentrations above VIAP Screening Levels in soil samples collected from SB1, SB7, SB9, SB10, and SB11. Phenanthrene was measured above the VIAP Screening Level in the soil samples collected from SB7 and SB8 and mercury was measure above the VIAP Screening Level in the soil samples collected from SB1, SB2, SB4, SB6 through SB8, and SB10. No other target compounds were measured at concentrations above VIAP Screening Levels in the soil samples.

4.3.2 GROUNDWATER SAMPLE RESULTS

Chlorobenzene, lead, perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), and lead were measured above Part 201 criteria at SB11. Lead and arsenic were measured above Part 201 criteria in the groundwater samples collected from SB10 and SB12, respectively.

Benzene, chlorobenzene, and 1,4-dichlorobenzene were measured at concentrations above VIAP Screening Levels in groundwater samples collected from SB11. No other target compounds were measured at concentrations above VIAP Screening Levels in the groundwater samples.

4.4 DATA VERIFICATION/VALIDATION AND USABILITY

We evaluated the soil and groundwater analytical data collected during our subsurface assessment to determine if the data set was valid and of usable quality. The laboratory QC results are detailed in the Case Narrative included in Appendix C.

It is our opinion that the data set generated is of usable quality and meets the Project-specific objectives.

4.4.1 FIELD QC

No VOCs were measured above laboratory RLs in the VOC trip blank or methanol blank indicating VOC contamination was not introduced during sample storage and shipment or from the laboratory methanol preservative. No VOCs, SVOCs, PCBs, or metals were detected in the equipment blank collected from the tubing used during groundwater sampling indicating that cross contamination of these constituents from groundwater sampling equipment did not occur.

No PFAS was measured above laboratory RLs in the PFAS trip blank indicating PFAS contamination was not introduced during sample storage and shipment. PFOS was measured above the laboratory RL in aqueous equipment blank FB2. No PFAS was measured above RLs in the aqueous equipment blank FB1. The concentration of PFOS measured in the equipment blank was at least ten times less than the most restrictive criteria.

The relative percent differences (RPDs) in analyses of target analytes in the duplicate groundwater samples from SB11 were within the precision limits of ±35%. Except for tetrachloroethylene, toluene, and silver, the RPDs in analyses of target analytes in the duplicate soil samples from SB7 were within the

precision limit of ±50%. The elevated RPD for tetrachloroethylene, toluene, and silver is likely associated with the heterogeneity of the soil. The level of tetrachloroethylene measured in the soil sample exceeded Part 201 Drinking Water Protection Criterion while the level in the duplicate soil sample did not. Tetrachloroethylene was also measured above the Part 201 Drinking Water Protection Criterion at three other locations (SB1, SB9, and SB10). The level of toluene measured in the soil samples did not exceed Part 201 criteria and was at least ten times below the most restrictive Part 201 criteria. The silver results from the duplicate sample was at least two times below the most restrictive Part 201 criteria; however, exceedances of Part 201 criteria for silver were measured in other soil samples. Therefore, the lack of precision for the tetrachloroethylene, toluene, and silver results did not impair our ability to identify compounds above Part 201 criteria.

4.4.2 LABORATORY QC

Fibertec and Eurofins reported that the laboratory control samples/laboratory control samples duplicate (LCS/LCSD), surrogate recoveries, and results from analyses of the continuing calibration verification (CCV) samples and method blanks were within acceptance limits except as discussed in the following paragraphs:

Fibertec

- Multiple VOC and SVOC compounds were qualified as being biased high due to high CCV and LCSD in the soil samples from SB1, SB2, and/or SB4 through SB12 and the groundwater samples collected from SB11 and the equipment blank. Similarly, lead and aniline were qualified as being biased high in the soil sample collected from SB7 due to high spiked sample recovery. The VOC and SVOC compounds listed were not measured above laboratory RL. Lead was measured above the laboratory RL but did not exceed Part 201 criteria. Therefore, the high biases do not materially affect the findings of this report.
- 2-Methylnaphthalene, 1,1-dichloroethene, benzyl alcohol, butyl benzyl phthalate, 4-chloro-3-methylphenol, 2,4-dinitrophenol, hexachlorocyclopentadiene, 2-nitrophenol, 4-nitrophenol, and pentachlorophenol were qualified as being biased low in the soil sample collected from SB7 due to low MS/MSD sample recovery. These constituents were not measured above laboratory RLs in the soil samples from SB7. The reporting limit for 4-chloro-3-methylphenol was the same as the lowest Part 201 criterion; therefore, it is possible that 4-chloro-3-methylphenol is present at concentrations above Part 201 criteria at the Property. The most restrictive Part 201 criteria for the remaining constituents were at least two times higher than the reporting limits; therefore, the potential low biases did not materially affect the conclusions of this report.
- 2,4-Dinitrophenol, 4-nitroaniline, pentachlorophenol, hexachlorocyclopentadiene, and 3&4-methylphenol were qualified as being biased low in soil samples collected from SB4, SB5, SB6, SB7, and/or SB8 due to low CCV or LCS. These constituents were not measured above laboratory RLs in the soil samples. 2,4-dinitrophenol, 4-nitroaniline, and 3&4-methylphenol do not have Part 201 criteria and the RL for hexachlorocyclopentadiene was at least two times lower than the applicable lowest Part 201 criterion; therefore, the low bias does not materially affect our conclusions with respect to these constituents. The RL for pentachlorophenol is below the lowest Part 201 criterion; therefore, it is possible that the compound is present in soil at concentrations that exceed Part 201 criteria.
- Hexachlorocyclopentadiene and hexachloroethane were qualified as being biased low in the groundwater sample collected from SB11 due to low spiked sample recovery. These compounds were not measured above laboratory RLs in the groundwater sample. The most restrictive Part 201 criteria for hexachlorocyclopentadiene is least ten times higher than the RL; therefore, the low bias does not materially affect the conclusions of this report relative to hexachlorocyclopentadiene. The RL for hexchloroethane is below the lowest Part 201 criterion; therefore, it is possible that the compound is present above Part 201 criteria at the Property.

- The soil sample from SB1 was qualified as an estimated and biased low result due to a hold time exceedance and a low spiked sample recovery, respectively. Hexavalent chromium was not measured above RLs in this sample and the RL was at least six times lower than the most restrictive Part 201 criterion. Therefore, the estimated and biased low result did not materially affect the conclusions of this report.

Eurofins

- The reported concentrations of multiple PFAS analytes were qualified in soil and groundwater samples due to the matrix of the sample and/or the spiked sample recovery falling outside of quality control acceptance limits. With the exception of PFOA, PFOS, PFHxA, PFHxS, PFBS, PFNA, and GenX, the qualified constituents do not have Part 201 criteria and therefore the qualified data does not materially impact the conclusions of this report.
- PFOS and PFOA were the two constituents detected in the soil sample and soil duplicate sample collected from SB11 that have Part 201 soil criteria. No data qualifiers were flagged for the soil duplicate sample. PFOA was qualified as estimated in the soil sample, however, the estimated concentration was more than 100 times lower than the most restrictive criterion. Therefore the estimated concentration did not materially impact our conclusions.
- PFOA, PFOS, PFHxA, PFHxS, PFBS, PFNA, and GenX are the seven constituents that have Part 201 groundwater criteria. Of these, PFHxA, PFHxS, and GenX were detected above the RL in the groundwater sample from SB11 and were qualified due to a MS/MSD recovery that exceeded the laboratory control limits. The reported concentrations were at least three times below the most restrictive Part 201 criteria and therefore, did not materially impact the conclusions of this report.
- The field blank sample FB2 was re-extracted and analyzed due to the presence of PFOS in the initial analysis (FB2). PFOS was measured above RLs in the re-extracted aliquot. The reported concentrations of PFOS in FB2 were 0.59 and 0.80 ng/L. Cross contamination of PFOS from the groundwater sampling equipment in the SB11 groundwater sample is possible; however, the reported concentration corrected for the potential cross contamination still exceeds Part 201 criteria. Therefore, the cross contamination did not materially affect the conclusions of this report.
- The groundwater duplicate sample was re-extracted and analyzed due to the standard injection peaks falling outside of laboratory QC limits. The re-extracted results were flagged due to a hold time exceedance. The data presented in Table 2 is from the initial analysis. Two exceedances of Part 201 criteria were identified in the duplicated groundwater sample using the results of the initial extraction. These exceedances were also identified in the original SB11 sample; therefore, our conclusions were not affected.

It is our opinion that the data set generated is of usable quality and meets the Project-specific objectives.

5. CONCLUSIONS

We conducted a Phase II ESA of the former Harbor Beach Dump site located on the northeast portion of a 63 acre parent parcel with an address of 836 Huron Avenue in Harbor Beach, Huron County, Michigan. We designed the scope of the Phase II ESA to evaluate the REC identified in our Phase I ESA, dated July 11, 2022.

Soil and groundwater samples collected from the Property contained levels of VOCs, PAHs, PCBs, PFOS, PFOA, arsenic, cadmium, copper, lead, mercury, selenium, silver, and zinc above Part 201 Generic Residential Cleanup Criteria. The analytical results indicate that the Property is a “facility” as defined by Part 201. Therefore, the owner is obligated to comply with the due care obligations described in Section 20107a of Part 201. The EGLE Due Care Obligations for Owners or Operators of Contaminated Property is included in Appendix D and provides additional information on these and other due care obligations. If requested, a Plan to Comply with Due Care could be prepared.

This plan would document the actions needed to prevent unacceptable exposures to and exacerbation of known impact during onsite construction activities and future use.

If the City of Harbor Beach is considering redevelopment of the Property, we recommend additional evaluation to further assess the due care risks. This evaluation may include collection of soil and groundwater samples in areas where redevelopment activities will be focused and evaluation of soil gas in areas were buildings may be present.

REPORT PREPARED BY:

Myles G. Jackman
Staff Geologist

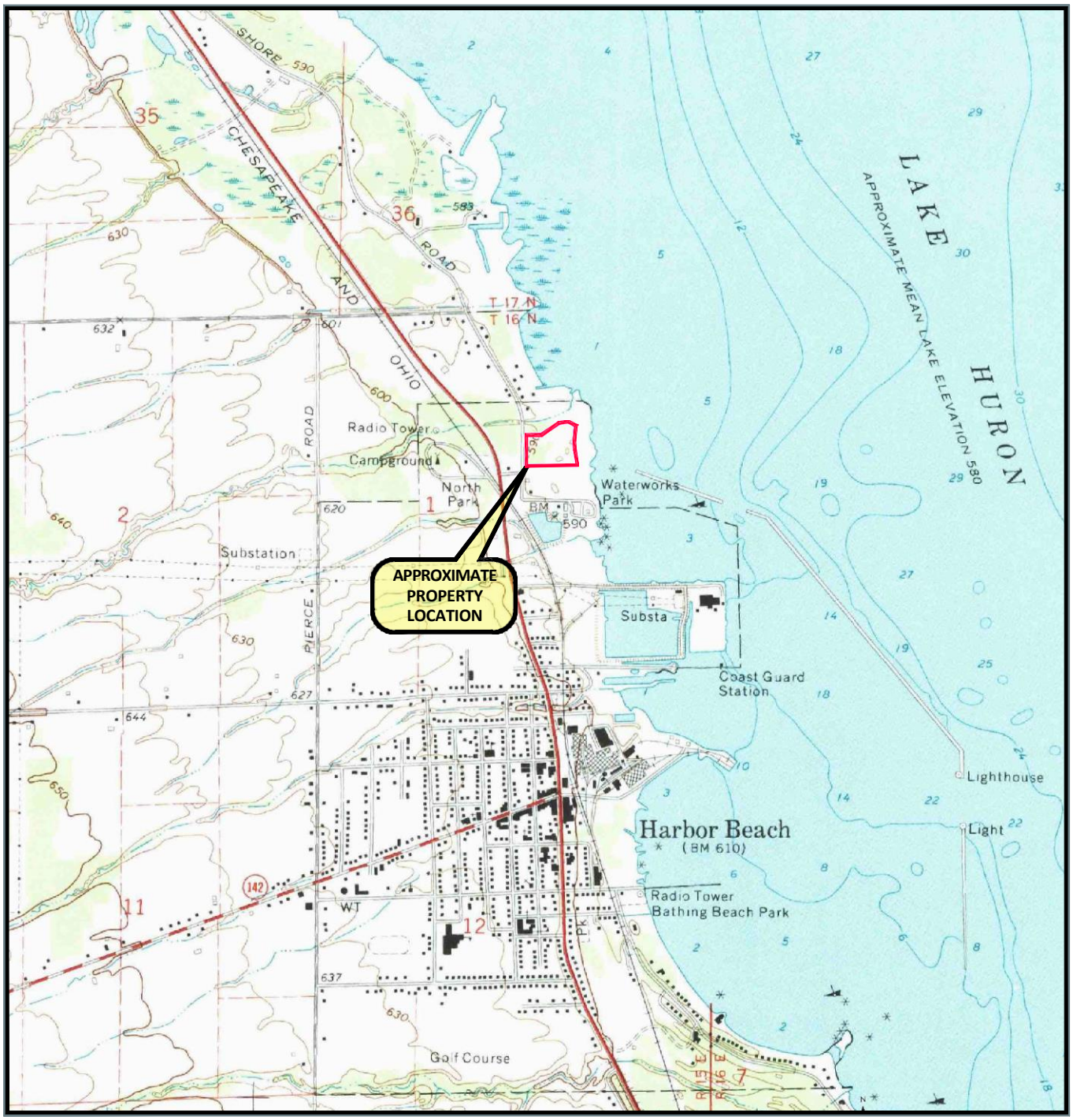
REPORT REVIEWED BY:

Brian C. Berger, PE
Senior Consultant

6. REFERENCES

1. Part 201 of 1994 PA 451, as amended, the Natural Resources and Environmental Protection Act.
2. Michigan Department of Environmental Quality, Promulgated Cleanup Criteria, R 299.44, R 299.46, and R 299.49, Part 201 Generic Residential Cleanup Criteria and Screening Levels and associated Footnotes, December 30, 2013; GSI Criteria Updated June 25, 2018.
3. SME, Phase I Environmental Site Assessment, North Park Campground Waterfront Annex, A Portion of 836 Huron Avenue North, Harbor Beach, Michigan, July 11, 2022.

FIGURES



Base map obtained from ERIS®

USGS QUADRANGLE(s) REFERENCED

HARBOR BEACH (1978) MICHIGAN

N
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S

0' 2000'

SCALE: 1" = 2000'

No.	Revision Date		
		Date	6-15-2023
		Drawn By	CRC
		Designed By	MS
		Scale	1" = 2000'
		Project	088212.00.005.007

PROPERTY LOCATION MAP
FORMER HARBOR BEACH DUMP
A PORTION OF 836 HURON AVENUE NORTH
HARBOR BEACH, MICHIGAN

SME
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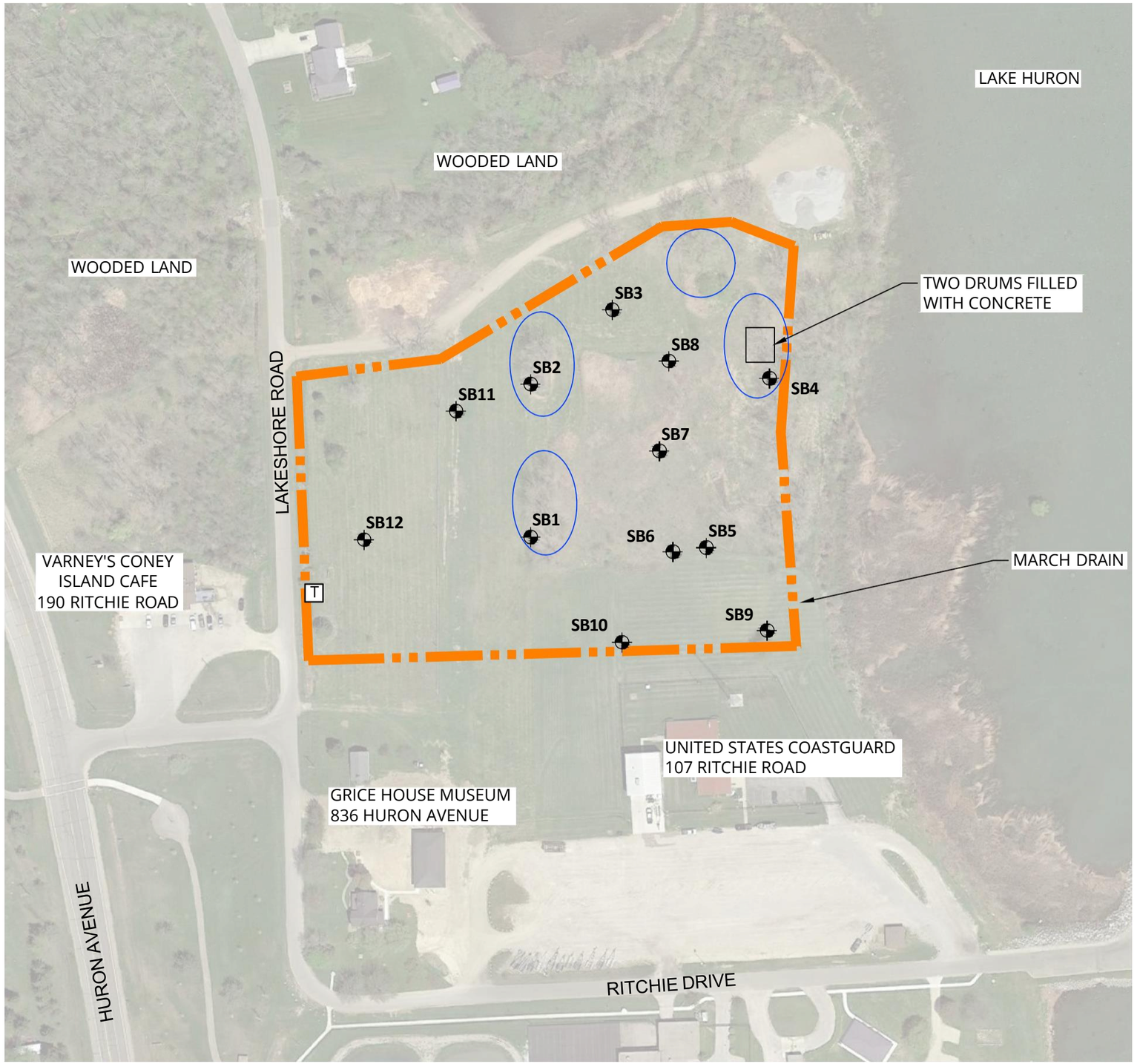
Figure No. 1

Jun 15, 2023 - 2:05pm - julie.blake \\Sme-inc\pz\WIP\088212.00\CAD\Design Files\ENV\088212.00.005.007\Rev4\088212.00.005.007-PHASE I.dwg



N
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0' 150' 300'

GRAPHIC SCALE: 1" = 150'

LEGEND

- APPROXIMATE PROPERTY BOUNDARY (MARSH DRAIN)
- APPROXIMATE POLE MOUNTED TRANSFORMER
- APPROXIMATE AREA OF CONCRETE AND ASPHALT DEBRIS
- APPROXIMATE BORING LOCATION

NOTE:
1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO WITH AN IMAGE DATE OF 05/22/2016.

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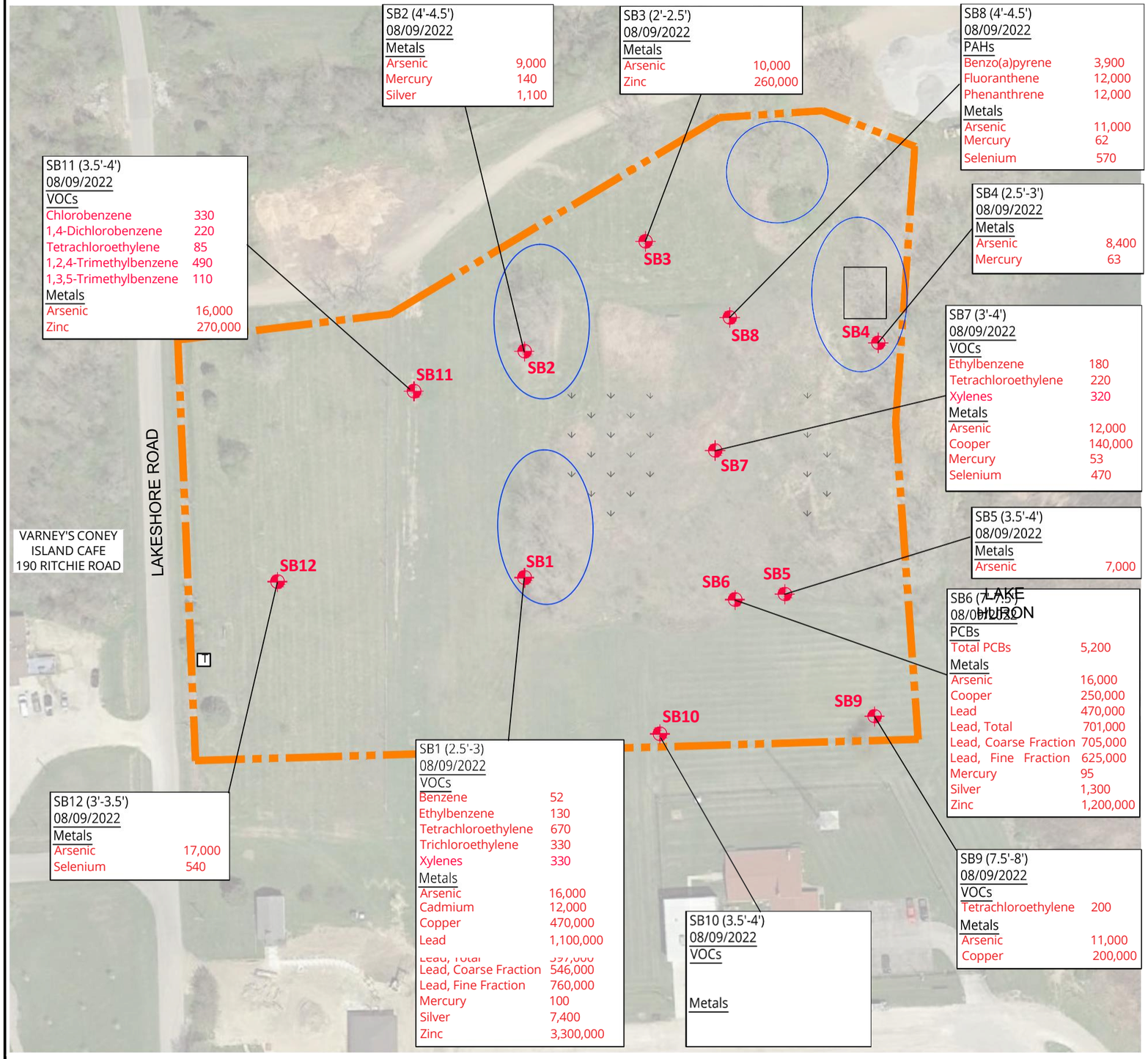
Project
FORMER HARBOR BEACH DUMP

Project Location
A PORTION OF 836 HURON AVENUE NORTH HARBOR BEACH, MICHIGAN

Sheet Name
PROPERTY FEATURES AND SOIL BORING LOCATION DIAGRAM

No.	Revision Date

Date 6-15-2023
CADD CRC
Designer MS
Scale AS NOTED
Project 088212.00.005.007
Figure No. 2



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0' 100' 200'

GRAPHIC SCALE: 1" = 100'

LEGEND

- APPROXIMATE PROPERTY BOUNDARY (MARSH DRAIN)
- APPROXIMATE POLE MOUNTED TRANSFORMER
- APPROXIMATE AREA OF CONCRETE AND ASPHALT DEBRIS
- APPROXIMATE BORING LOCATION WITH PART 201 EXCEEDANCE
- APPROXIMATE WETLAND LOCATION

NOTES:

1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO WITH AN IMAGE DATE OF 05/22/2016.
2. CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER KILOGRAM (µg/kg) AND EXCEED ONE OR MORE PART 201 GENERIC RESIDENTIAL CLEANUP CRITERIA.
3. DUPLICATE SAMPLES WERE TAKEN FROM SB7, THE HIGHEST CONCENTRATION BETWEEN THE SAMPLES IS REPORTED IN THE CALLOUT BOX. REFER TO TABLE 1 FOR ADDITIONAL DETAIL

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Project

FORMER HARBOR BEACH DUMP

Project Location

A PORTION OF 836 HURON AVENUE NORTH HARBOR BEACH, MICHIGAN

Sheet Name

SUMMARY OF PART 201 EXCEEDANCES - SOIL

No.	Revision Date

Date 6-15-2023

CADD CRC

Designer MS

Scale AS NOTED

Project 088212.00.005.007

Figure No. 3

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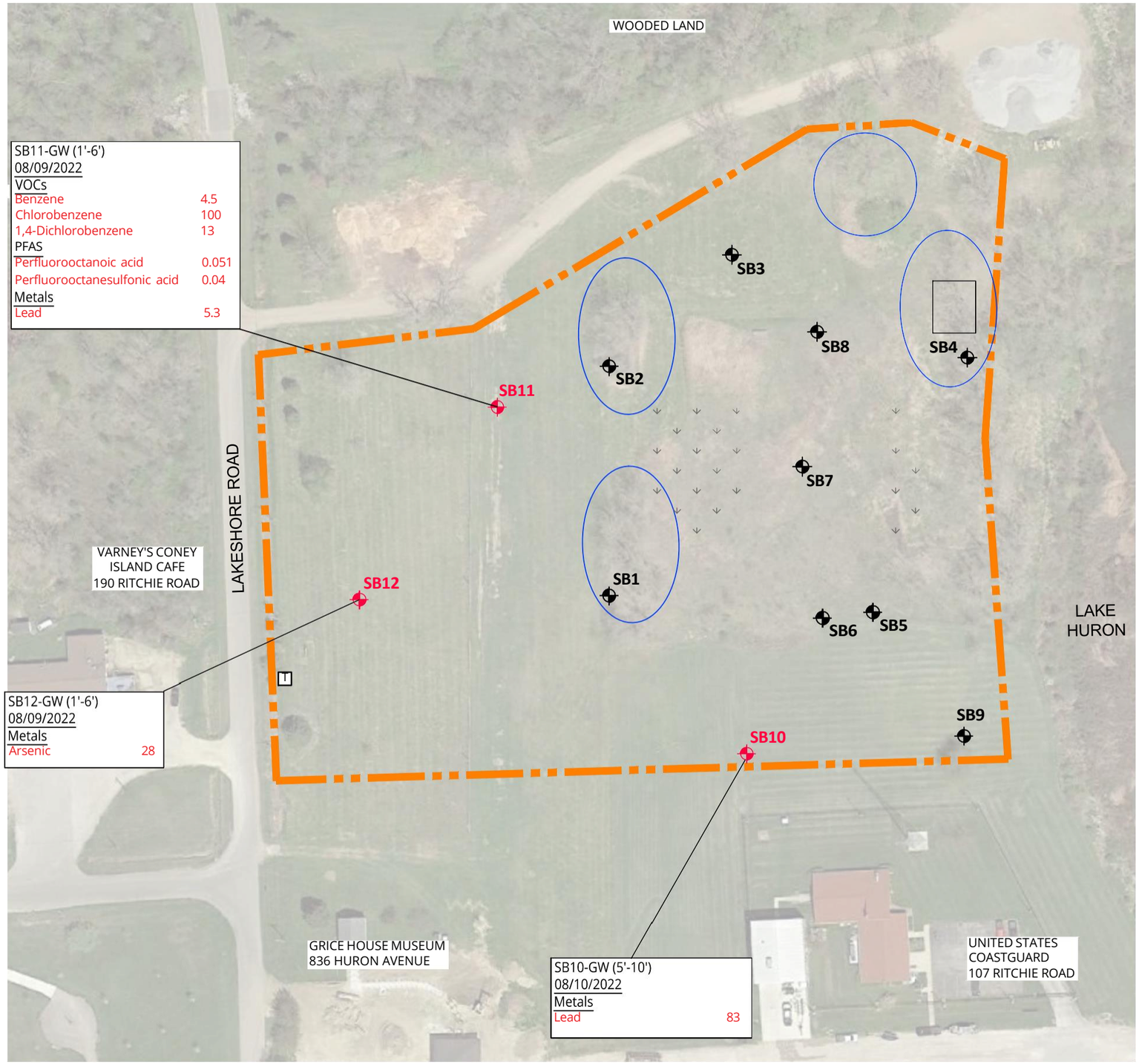

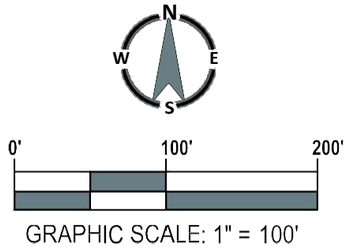

LEGEND

- APPROXIMATE PROPERTY BOUNDARY (MARSH DRAIN)
- APPROXIMATE POLE MOUNTED TRANSFORMER
- APPROXIMATE AREA OF CONCRETE AND ASPHALT DEBRIS
- APPROXIMATE BORING LOCATION
- APPROXIMATE BORING LOCATION WITH PART 201 EXCEEDANCE
- APPROXIMATE WETLAND LOCATION

NOTES:

1. AERIAL IMAGE TAKEN FROM GOOGLE EARTH PRO WITH AN IMAGE DATE OF 05/22/2016.
2. CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER LITER (µg/L) AND EXCEED ONE OR MORE PART 201 GENERIC RESIDENTIAL CLEANUP CRITERIA.
3. DUPLICATE SAMPLES WERE TAKEN FROM SB11, THE HIGHEST CONCENTRATION BETWEEN THE SAMPLES IS REPORTED IN THE CALLOUT BOX. REFER TO TABLE 2 FOR ADDITIONAL DETAIL.

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Project
FORMER HARBOR BEACH DUMP

Project Location
A PORTION OF 836 HURON AVENUE NORTH HARBOR BEACH, MICHIGAN

Sheet Name
SUMMARY OF PART 201 EXCEEDANCES - GROUNDWATER

No.	Revision Date

Date 6-15-2023
CADD CRC
Designer MS
Scale AS NOTED
Project 088212.00.005.007
Figure No. 4

TABLES

SME

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
FORMER HARBOR BEACH DUMP
A PORTION OF 836 HURON AVENUE NORTH
HARBOR BEACH, MICHIGAN
SME PROJECT NO.: 88212.00.005.007

Constituent		Part 201 Generic Residential Cleanup Criteria				VIAP Screening Levels	Statewide Default Background Levels	Chemical Analysis Results Sample Identification Depth (Feet) Date Collected														Maximum Concentration Measured at Property
		Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Direct Contact Criteria	Residential Volatilization to Indoor Air Pathway (VIAP) Screening Levels		SB1	SB2	SB3	SB4	SB5	SB6	SB7	SB7 Duplicate	SB8	SB9	SB10	SB11	SB11	SB11 Duplicate	SB12	
								2.5'-3'	4'-4.5'	2'-2.5'	2.5'-3'	3.5'-4'	7'-7.5'	3'-4'	3'-4'	4'-4.5'	7.5'-8'	3.5'-4'	3.5'-4'	4'-5'	4'-5'	3'-3.5'	
								8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	8/9/2022	
VOCs	**CAS #**																					
Benzene	71-43-2	**100**	4,000	1,600	180,000	**50**	NA	**52**	<50	<50	<50	<50	<50	<50	**110**	<50	<50	<50	<50	NE	NE	<50	110
Chlorobenzene	108-90-7	2,000	500	120,000	4,300,000	**82**	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**330**	NE	NE	<50	330
1,4-Dichlorobenzene	106-46-7	1,700	360	19,000	400,000	**100**	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**220**	NE	NE	<100	220
Ethylbenzene	100-41-4	1,500	360	87,000	22,000,000	**50**	NA	**130**	<50	<50	<50	<50	<50	<50	**180**	**260**	<50	<50	<50	<50	NE	NE	<50	260
Styrene	100-42-5	2,700	2,100	250,000	400,000	150	NA	<50	<50	<50	<50	<50	<50	<50	**78**	<50	<50	<50	<50	<50	NE	NE	<50	78
Tetrachloroethylene	127-18-4	**100**	1,200	11,000	200,000	**50**	NA	**670**	<50	<50	<50	<50	<50	**220**	**58**	<50	**200**	**270**	**85**	NE	NE	<50	670
Toluene	108-88-3	16,000	5,400	330,000	50,000,000	3,700	NA	**510**	<50	<50	<50	<50	**160**	**180**	**360**	<50	<50	**89**	<50	NE	NE	<50	510
Trichloroethylene	79-01-6	**100**	4,000	1,000	110,000	**50**	NA	**330**	<50	<50	<50	<50	<50	<50	**50**	<50	<50	**64**	<50	NE	NE	<50	330
1,2,3-Trimethylbenzene	526-73-8	NA	NA	NA	NA	270	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**120**	NE	NE	<100	120
1,2,4-Trimethylbenzene	95-63-6	2,100	570	4,300,000	32,000,000	**150**	NA	**100**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**490**	NE	NE	<100	490
1,3,5-Trimethylbenzene	108-67-8	1,800	1,100	2,600,000	32,000,000	**100**	NA	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**110**	NE	NE	<100	110
Xylenes	1330-20-7	5,600	980	6,300,000	410,000,000	**280**	NA	**330**	<150	<150	<150	<150	<150	**320**	**270**	<150	<150	**62**	**180**	NE	NE	<100	330
Other Analyzed VOCs	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	**<RL**	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Polynuclear Aromatic Hydrocarbons (PAHs)																							
Acenaphthylene	208-96-8	5,900	ID	1,600,000	1,600,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	<330	**700**	<330	<330	<330	NE	NE	<330	700
Anthracene	120-12-7	41,000	ID	1,000,000,000	230,000,000	13,000,000	NA	<330	<330	<330	<330	<330	<330	<330	**500**	**3,100**	<330	<330	<330	NE	NE	<330	3,100
Benzo(a)anthracene	56-55-3	NLL	NLL	NLV	20,000	160,000	NA	<330	<330	<330	<330	<330	<330	<330	**1,300**	**5,100**	<330	<330	<330	NE	NE	<330	5,100
Benzo(a)pyrene	50-32-8	NLL	NLL	NLV	**2,000**	NA	NA	<330	<330	<330	<330	<330	<330	<330	**1,200**	**3,900**	<330	<330	<330	NE	NE	<330	3,900
Benzo(b)fluoranthene	205-99-2	NLL	NLL	ID	20,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	**1,800**	**5,600**	<330	<330	<330	NE	NE	<330	5,600
Benzo(g,h,i)perylene	191-24-2	NLL	NLL	NLV	2,500,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	**1,000**	**2,700**	<330	<330	<330	NE	NE	<330	2,700
Benzo(k)fluoranthene	207-08-9	NLL	NLL	NLV	200,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	**600**	**2,300**	<330	<330	<330	NE	NE	<330	2,300
Chrysene	218-01-9	NLL	NLL	ID	2,000,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	**1,400**	**5,200**	<330	<330	<330	NE	NE	<330	5,200
Dibenzo(a,h)anthracene	53-70-3	NLL	NLL	NLV	2,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	<330	**730**	<330	<330	<330	NE	NE	<330	730
Fluoranthene	206-44-0	730,000	**5,500**	1,000,000,000	46,000,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	**2,800**	**12,000**	<330	<330	<330	NE	NE	<330	12,000
Fluorene	86-73-7	390,000	5,300	580,000,000	27,000,000	470,000	NA	<330	<330	<330	<330	<330	<330	<330	<330	**1,800**	<330	<330	<330	NE	NE	<330	1,800
Indeno(1,2,3-cd)pyrene	193-39-5	NLL	NLL	NLV	20,000	NA	NA	<330	<330	<330	<330	<330	<330	<330	<330	**2,600**	<330	<330	<330	NE	NE	<330	2,600
Phenanthrene	85-01-8	56,000	**2,100**	2,800,000	1,600,000	**1,700**	NA	<330	<330	<330	<330	<330	<330	<330	**2,200**	**12,000**	<330	<330	<330	NE	NE	<330	12,000
Pyrene	129-00-0	480,000	ID	1,000,000,000 (D)	29,000,000	250,000	NA	<330	<330	<330	<330	<330	<330	<330	**2,500**	**9,800**	<330	<330	<330	NE	NE	<330	9,800
Other Analyzed PAHs	CS	CS	CS	CS	CS	CS	NA	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	NE	NE	<RLs	<RL
Semivolatile Organic Compounds (SVOCs)																							
Carbazole	86-74-8	9,400	1,100	NLV	530,000	NA	NA	NE	NE	NE	<330	<330	<330	<330	<330	**870**	NE	NE	NE	NE	NE	NE	870
Dibenzofuran	132-64-9	ID	1,700	2,000,000	ID	7,100,000	NA	NE	NE	NE	<330	<330	<330	<330	<330	**990**	NE	NE	NE	NE	NE	NE	990
Other Analyzed SVOCs	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	<RLs	<RLs	<RLs	<RLs	<RLs	<RLs	NE	NE	NE	NE	NE	NE	<RL
Per- and Polyfluoroalkyl Substances (PFAS)																							
NEtFOSAA	2991-50-6	NA	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	**0.00028**	<0.000024	NE	0.00028
Perfluoroheptanoic acid	375-85-9	NA	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	<0.000030	**0.00003**	NE	0.00003
Perfluorohexanoic acid	307-24-4	NA	NA	NA	NA	NA	NA	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	**0.000028**	<0.000021	NE	0.00003
Perfluorooctanesulfonic acid	1763-23-1	NA	0.24	NA	NA	NA	NA	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	**0.00014**	**0.000097**	NE	0.00014
Perfluorooctanoic acid	335-67-1	NA	10,000	NA	NA	NA	NA	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	**0.000059**	**0.00017**	NE	0.00017
Other Analyzed PFAS	CS	CS	CS	NA	CS	CS	CS	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	<RLs	<RLs	NE	NA
Polychlorinated Biphenyls (PCBs)																							
Total PCBs	1336-36-3	NLL	NLL	3,000,000	**4,000**	NA	NA	NE	NE	NE	NE	<100	**5,200**	<100	<100	<100	NE	NE	NE	NE	NE	NE	5,200
Metals																							
Arsenic	7440-38-2	***5,800***	***5,800***	NLV	**7,600**	NA	5,800	**16,000**	**9,000**	**10,000**	**8,400**	**7,000**	**16,000**	**12,000**	**13,000**	**11,000**	**11,000**	**19,000**	**16,000**	NE	NE	**17,000**	19,000
Barium	7440-39-3	1,300,000	440,000	NLV	37,000,000	NA	75,000	**120,000**	**36,000**	**40,000**	**60,000**	**53,000**	**210,000**	**49,000**	**47,000**	**79,000**	**82,000**	**68,000**	**45,000**	NE	NE	**47,000**	210,000
Cadmium	7440-43-9	**6,000**	**3,000**	NLV	550,000	NA	1,200	**12,000**	**230**	**230**	**250**	**210**	**2,600**	**530**	**530**	**290**	**320**	**760**	**740**	NE	NE	**310**	12,000
Chromium, Total**	7440-47-3	1,000,000,000	2,900,000,000	NLV	790,000,000	NA	18,000 (total)	**460,000**	**10,000**	**9,500**	**12,000**	**12,000**	**38,000**	**12,000**	**11,000**	**14,000**	**18,000**	**18,000**	**20,000**	NE	NE	**13,000**	460,000
Chromium VI**	18540-29-9	30,000	3,300	NLV	2,500,000	NA	NA	<480	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	<RL
Copper	7440-50-8	5,800,000	**75,000**	NLV	20,000,000	NA	32,000	**470,000**	**17,000**	**15,000**	**21,000**	**12,000**	**250,000**	**120,000**	**140,000**	**18,000**	**200,000**	**34,000**	**37,000**	NE	NE	**12,000**	470,000
Lead	7439-92-1	**700,000**	2,500,000	NLV	**400,000**	NA	21,000	**1,100,000**	**18,000**	**13,000**	**86,000**	**20,000**	**470,000**	**75,000**	**85,000**	**20,000**	**48,000**	**210,000**	**69,000**	NE	NE	**25,000**	1,100,000
Lead, Total (Calculated)	7439-92-1	**700,000**	2,500,000	NLV	**400,000**	NA	21,000	**597,000**	NE	NE	**33,700**	NE	**701,000**	NE	**73,500**	NE	**147,000**	NE	NE	NE	NE	NE	701,000
Lead, Coarse Fraction	7439-92-1	NA	NA	NA	**400,000**	NA	21,000	**546,000**	NE	NE	**30,300**	NE	**705,000**	NE	**70,700**	NE	**140,000**	NE	NE	NE	NE	NE	705,000
Lead, Fine Fraction	7439-92-1	NA	NA	NA	**400,000**	NA	21,000	**760,000**	NE	NE	**52,500**	NE	**625,000**	NE	**91,400**	NE	**210,000**	NE	NE	NE	NE	NE	760,000
Mercury	7439-97-6	1,700	***330***	48,000	160,000	**50**	130	**100**	**140**	<50	**63**	<50	**95**	**53**	**61**	**62**	<90	**200**	<50	NE	NE	<50	200
Selenium	7782-49-2	4,000	***410***	NLV	2,600,000	NA	410	<200	<200	<200	<200	280	**330**	**470**	**320**	**570**	**210**	**330**	**200**	NE	NE	**580**	570
Silver	7440-22-4	**4,500**	***1,000***	NLV	2,500,000	NA	1,000	**7,400**	**1,100**	<100	<100	<100	**1,300**	**160**	**280**	<100	**100**	**210**	**120**	NE	NE	<100	7,400
Zinc	7440-66-6	**2,400,000**	**170,000**	NLV	170,000,000	NA	47,000	**3,300,000**	**63,000**	**260,000**	**92,000**	**55,000**	**1,200,000**	**120,000**	**110,000**	**120,000**	**140,000**	**170,000**	**270,000**	NE	NE	**68,000**	3,300,000

Notes are found on the last page of this table.

TABLE 1

SUMMARY OF SOIL ANALYTICAL RESULTS
FORMER HARBOR BEACH DUMP
A PORTION OF 836 HURON AVENUE NORTH
HARBOR BEACH, MICHIGAN
SME PROJECT NO.: 88212.00.005.007

Notes:

- Concentrations reported in micrograms per kilogram (µg/kg).
- Analytical results were compared to the December 30, 2013 Promulgated Cleanup Criteria, Residential and/or Nonresidential Part 201 Generic Cleanup Criteria and Screening Levels, updated June 25, 2018.
- Analytical results were also compared to the EGLE September 4, 2020 Residential and/or Nonresidential Volatilation to Indoor Air Pathway (VIAP) Screening Levels.
- Results exceeding one or more criteria are shaded, as are the criteria exceeded.
- Refer to the analytical report for the full list of analytes.
- CS - Criterion is specific to individual constituent.
- <RL - Analytical result was below laboratory reporting limit.
- ID - Insufficient data to develop criteria.
- NA - Not applicable.
- NE - Not evaluated.
- NLV - Not likely to volatilize.
- NLL - Not likely to leach.
- * = GSI Protection was calculated for the indicated metals using the EGLE spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
- *Italicized* - the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
- ** - Total chromium results compared to trivalent chromium criteria because hexavalent chromium was analyzed and not measured above the laboratory reporting limit in the soil sample that had the highest total chromium concentration.
- Concentrations were also compared to, and found to be below, the ambient and indoor air criteria and the soil saturation concentration screening levels.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FORMER HARBOR BEACH DUMP
A PORTION OF 836 HURON AVENUE NORTH
HARBOR BEACH, MICHIGAN
SME PROJECT NO.: 088212.00.005.007

Constituent		Part 201 Generic Cleanup Criteria			Volatilization to Indoor Air Pathway (VIAP) Screening Levels	Chemical Analysis Results Sample Identification Depth (Feet) Date Collected				Maximum Concentration Measured at Property
		Residential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential Groundwater Volatilization to Indoor Air Inhalation Criteria	Residential Shallow Groundwater	SB10-GW	SB11-GW	SB11-GW Duplicate	SB12-GW	
						(5'-10')	(1'-6')	(1'-6')	(1'-6')	
						8/10/2022	8/9/2022	8/9/2022	8/9/2022	
VOCs	**CAS #**									
Benzene	71-43-2	5	200	5,600	**1.0**	<1.0	**4.5**	**4.4**	<1.0	4.5
Chlorobenzene	108-90-7	100	**25**	210,000	**33**	<1.0	**99**	**100**	<1.0	100
1,4-Dichlorobenzene	106-46-7	75	17	16,000	**5.9**	<1.0	**13**	**12**	<1.0	13
1,2,4-Trimethylbenzene	95-63-6	63	17	56,000	25	<1.0	**3.7**	**3.6**	<1.0	3.7
Xylenes	1330-20-7	280	41	190,000	75	<3.0	<3.0	**2.1**	<3.0	2.1
Other Analyzed VOCs	CS	CS	CS	CS	CS	<RLs	<RLs	<RLs	<RLs	<RL
Semivolatile Organic Compounds (SVOCs)										
Other Analyzed SVOCs	CS	CS	CS	CS	CS	<RLs	<RLs	<RLs	<RLs	CS
Polychlorinated Biphenyls (PCBs)										
Total PCBs	1336-36-3	0.50	0.2	45	NA	NA	<0.20	<0.20	NA	<RL
Per- and Polyfluoroalkyl Substances (PFAS)										
Perfluorohexanoic acid (PFHxA)	307-24-4	400	NA	NA	NA	NE	**0.027**	**0.011**	NE	0.027
Perfluoroheptanoic acid	375-85-9	NA	NA	NA	NA	NE	**0.014**	**0.007**	NE	0.014
Perfluorooctanoic acid (PFOA)	335-67-1	**0.008**	**12**	NA	NA	NE	**0.051**	**0.061**	NE	0.061
Perfluorononanoic acid (PFNA)	375-95-1	**0.006**	NA	NA	NA	NE	**0.0054**	<0.00042	NE	0.005
Perfluorodecanoic acid	335-76-2	NA	NA	NA	NA	NE	**0.0015**	<0.00042	NE	0.002
Perfluorotridecanoic acid	72629-94-8	NA	NA	NA	NA	NE	**0.42**	<0.00043	NE	0.420
Perfluorobutanesulfonic acid (PFBS)	375-73-5	**0.420**	NA	NA	NA	NE	**0.012**	**0.055**	NE	0.055
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	**0.051**	NA	NA	NA	NE	**0.016**	**0.010**	NE	0.016
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	**0.016**	**0.012**	NA	NA	NE	**0.04**	**0.041**	NE	0.041
NEtFOSAA	2991-50-6	NA	NA	NA	NA	NE	**0.05**	**0.055**	NE	0.055
NMeFOSAA	2355-31-9	NA	NA	NA	NA	NE	**0.003**	**0.003**	NE	0.003
Perfluoropentanesulfonic acid	2706-91-4	NA	NA	NA	NA	NE	**0.008**	**0.003**	NE	0.008
Perfluoroheptanesulfonic acid	375-92-8	NA	NA	NA	NA	NE	**0.003**	**0.00096**	NE	0.003
Perfluorooctanesulfonamide	754-91-6	NA	NA	NA	NA	NE	**0.00085**	**0.00069**	NE	0.001
Perfluorobutanoic acid	375-22-4	NA	NA	NA	NA	NE	**0.0087**	**0.012**	NE	0.012
Perfluoropentanoic acid	2706-90-3	NA	NA	NA	NA	NE	**0.047**	**0.0063**	NE	0.047
HFPO-DA (GenX)	13252-13-6	**0.37**	NA	NA	NA	NE	**0.025**	**0.0032**	NE	0.025
Perfluoroundecanoic acid	2058-94-8	NA	NA	NA	NA	NE	**0.0047**	<0.0004	NE	0.005
FBSA	30334-69-1	NA	NA	NA	NA	NE	**0.00038**	**0.00046**	NE	0.00046
Perfluoro-4-ethylcyclohexanesulfonic acid	133201-07-7	NA	NA	NA	NA	NE	**0.0005**	**0.00027**	NE	0.00050
Other Analyzed PFAS	CS	CS	CS	CS	NA	NE	CS	CS	NE	CS
Metals										
Arsenic	7440-38-2	**10**	**10**	NLV	NA	<5.0	<5.0	<5.0	**28**	28
Barium	7440-39-3	2,000	670	NLV	NA	**290**	**130**	**130**	**110**	290
Cadmium	7440-43-9	5	2.5	NLV	NA	<1.0	<1.0	<1.0	<1.0	<RL
Chromium, Total	7440-47-3	100	100	NLV	NA	<10	<10	<10	<10	<RL
Copper	7440-50-8	1,000	13	NLV	NA	<4.0	**4.5**	<4.0	<4.0	5
Lead	7439-92-1	**4.0**	**14**	NLV	NA	**83**	**5.3**	**4.6**	<3.0	83
Mercury	7439-97-6	2.0	0.0013	56	0.088	<0.20	<0.20	<0.20	<0.20	<RL
Selenium	7782-49-2	50	5	NLV	NA	<5	<5	<5	<5	<RL
Silver	7440-22-4	34	0.2	NLV	NA	<0.20	<0.20	<0.20	<0.20	<RL
Zinc	7440-66-6	2,400	170	NLV	NA	**130**	**77**	**75**	<50	130

Notes are found on the last page of this table.

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
FORMER HARBOR BEACH DUMP
A PORTION OF 836 HURON AVENUE NORTH
HARBOR BEACH, MICHIGAN
SME PROJECT NO.: 088212.00.005.007

Notes:

- Concentrations reported in micrograms per liter (µg/L).
- Analytical results were compared to December 21, 2020 Promulgated Cleanup Criteria, Residential and Nonresidential Part 201 Generic Cleanup Criteria and Screening Levels.
- Analytical results were also compared to the EGLE September 4, 2020 Residential and/or Nonresidential Volatilation to Indoor Air Pathway (VIAP) Screening Levels.
- Results exceeding one or more criteria are shaded, as are the criteria exceeded.
- Refer to the analytical report for the full list of analytes.
- CS - Criterion is specific to individual constituent.
- <RL - Analytical result was below laboratory reporting limit.
- NE - Not evaluated.
- NA - Not available.
- ID - Insufficient data to develop criterion.
- NLV - Not likely to volatilize under most soil conditions.
- * = GSI Protection was calculated for the indicated metals using the EGLE spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as $CaCO_3$ was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
- Concentrations were also compared to, and found to be below, the groundwater volatilization to indoor air inhalation criteria and the flammability and explosivity screening levels.

APPENDIX A
GEOPHYSICAL SURVEY JOB SUMMARY

Job Summary

Job Date : 8/5/2022

Customer	SME Soil & Materials Engineers	**Phone Number**	(248) 308-6290

Billing Address	City	State	Zip
The Kramer Bldg	Plymouth	MI	48170

Job Details

Jobsite Location	COAST GUARD
City	HARBOR BEACH
State	MI

WA Number	374392
Job Num	088212.00.004.010
PO Num	

Lead Technician HORN, KYLE **Phone** 248-820-7666 **Email** kyle.horn@gprsinc.com

Thank you for using GPRS on your project. We appreciate the opportunity to work with you. If you have questions regarding the results of this scanning, please contact the lead GPRS technician on this project.

EQUIPMENT USED

The following equipment was used on this project:

- Electromagnetic Induction. This system generates an electromagnetic field around the user, records interactions between the EM field and the soil, and displays the results after post-processing. Most sensitive to large metallic objects such as underground storage tanks or reinforced concrete.

Work Performed

Ground Penetrating Radar Systems performed the following work on this project:

- Scan 8 acre field using EMI to develop a map and identify hotspots for additional GPR scanning if necessary.
- Scanned area using EMI with approximately 5’ spacing walks. Results review determined area to be too congested to make further scanning conducive to scope.

Pictures

TERMS & CONDITIONS

https://www.gp-radar.com/legal/terms-conditions?utm_source=jobsummary&utm_medium=referral

Job Summary

Job Date : 8/5/2022

SIGNATURE

Contact Name

Agnes Taylor (248) 308-6290 agnes.taylor@sme-usa.com

Job Summary

Job Date : 8/5/2022

SUBSURFACE INVESTIGATION METHODOLOGY

POWERING THE INDUSTRY STANDARD

Proper training, multiple technologies, and a field-tested methodology are the key to a successful utility locate, concrete scan, and video pipe inspection. GPRS is a master of all three components by utilizing the SIM Specification.

TRAINING

The industry standard recommends 8 hours as a minimum for training and 60 hours practicing GPR to become certified NDT Level I in Ground Penetrating Radar. In contrast, SIM requires 320 hours of mentorship in the field prior to 80 hours of classroom/hands-on training.

In addition, the classroom training reinforces what a technician learns in the field. This classroom setting also allows them to go deeper into the technical aspects and knowledge needed to perform their jobs at the highest level.

EQUIPMENT

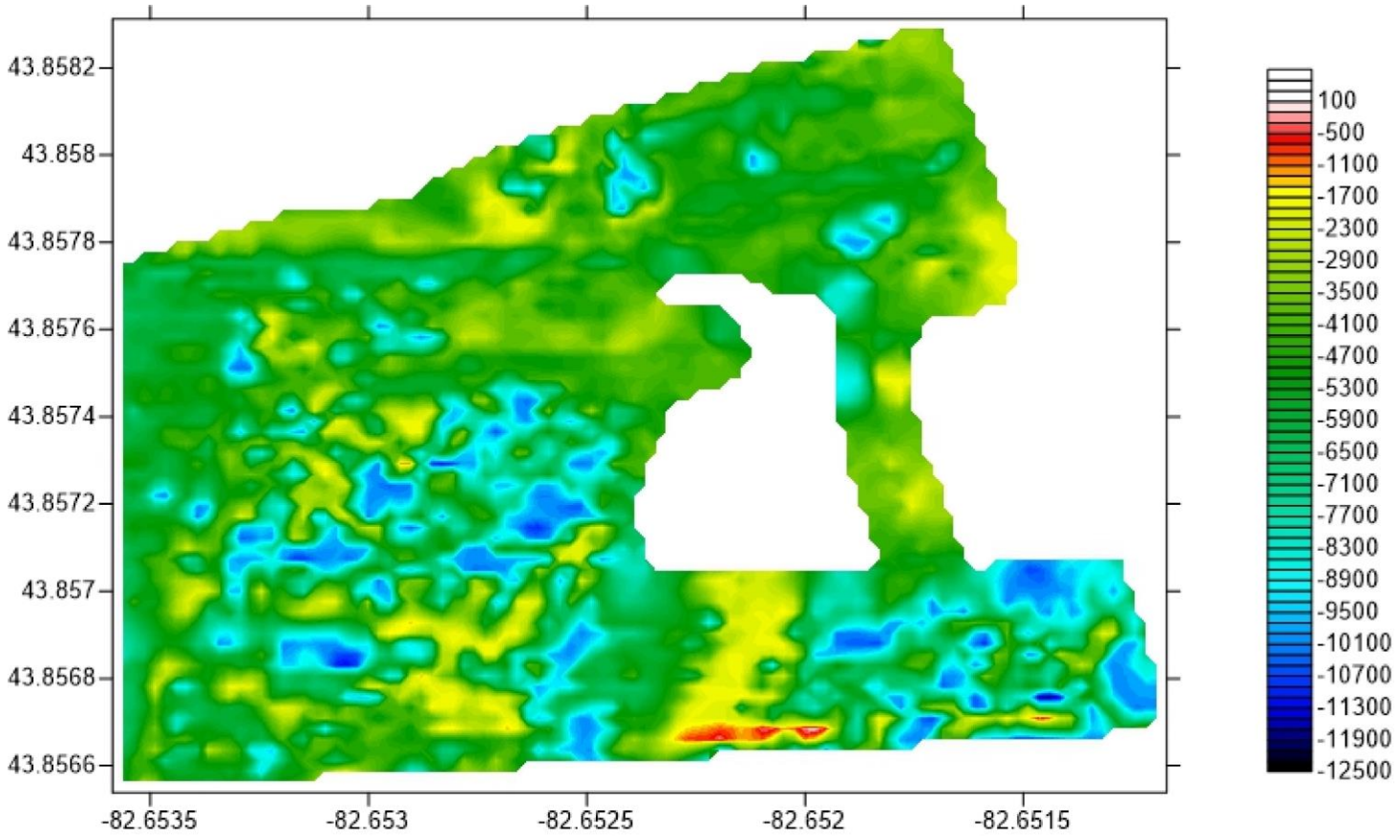
Subsurface Investigation Methodology (SIM) requires multiple technologies to be used in an investigation. With any investigation, more data points yield the best outcome. When SIM qualified technicians locate a subsurface target such as a pipe, utility, or reinforcing with more than one technology, it confirms the accuracy of the locate. This redundancy also reduces the likelihood of missing a buried target. Redundant results bear more data points; by locating pipes and other targets with different methods utilizing each tool's strengths and weaknesses, technicians reduce the risk of missing key site information.

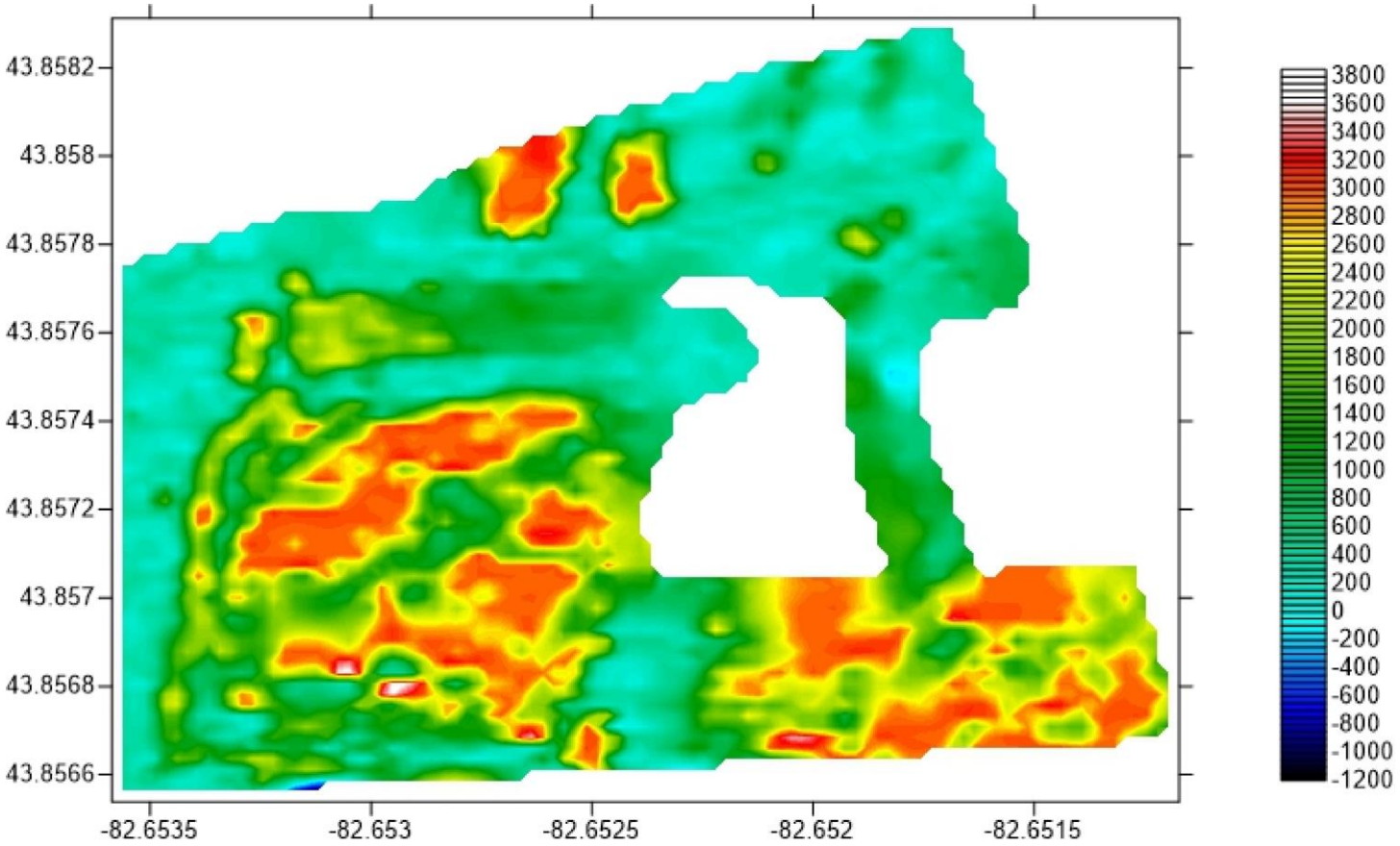
METHODOLOGY

The SIM specification is a tested process that allows technicians to acquire accurate and repeatable results. SIM is similar to a machine that requires multiple gears, all working in unison for it to function properly. One of the most critical gears and steps in the SIM process is the repeated methodology that technicians must know for each project.

A solid, repeatable methodology guarantees that a concrete scanning, utility locating, or video pipe inspection job can be performed by a seasoned professional but also by a new-to-the-business technician. When the SIM methodology is followed, it allows technicians to achieve the same results regardless of their experience in the field.

SIMSPEC.ORG





APPENDIX B
SOIL BORING LOGS

SME

BORING SB 1

BORING DEPTH: 8 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22

BORING METHOD: Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe

LOGGED BY: MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL					
		FILL- Fine to Medium SAND- Trace Silt, Glass, Gravel, and Brick Fragments- Dark Brown- Moist (SP)	LS1	34	<1		
2.5		3.0 FILL- Sandy LEAN CLAY- Trace Root Fragments- Dark Brown (CL)			<1		
		3.5 SANDY SILT- Gray- Moist (ML)	LS2	36	<1		
5.0					<1		
7.5		8.0 END OF BORING AT 8.0 FEET.			<1		Driller reported refusal at 8 feet
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB 2

BORING DEPTH: 7.5 FEET

PROJECT NAME: Former Harbor Beach Dump
PROJECT NUMBER: 088212.00.005.007
CLIENT: The City of Harbor Beach
PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan
DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22
BORING METHOD: Direct Push
OPERATOR: BM **RIG NO.:** Geoprobe
LOGGED BY: MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	METHANE (% by volume)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
		FILL- Fine to Medium SAND- Trace Roots and Plastic Fragments- Brown- Moist (SP)	LS1	26	<1 <1 <1 <1			
2.5		4.5						
5.0		FILL- Sandy LEAN CLAY- Gray (CL)	LS2	36	<1	1		
		7.0 SANDY SILT- Gray- Moist (ML) 7.5			<1	1		
7.5		END OF BORING AT 7.5 FEET.						Driller reported refusal at 7.5 feet
10.0								

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

6/28/23 12:47:54 PM

BORING SB 3

BORING DEPTH: 10 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22 **BORING METHOD:** Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe **LOGGED BY:** MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	METHANE (% by volume)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
		FILL- Fine SAND- Trace Gravel and Slag- Brown to Dark Brown- Moist (SP)	LS1	40	<1 2.4 1.2			
2.5		4.0			<1			
5.0		SANDY SILT- Brown to Gray- Moist (ML)	LS2	44	<1	1		
7.5			LS3	39	<1	1		
10.0		10.0 END OF BORING AT 10.0 FEET.			<1	1		Driller reported refusal at 10 feet

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB 4

BORING DEPTH: 7 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22

BORING METHOD: Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe

LOGGED BY: MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	METHANE (% by volume)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
					<1			
			LS1	44	2.4			
2.5					1.2			
		FILL- Fine to Coarse SAND with Silt- Trace Brick Fragments- Brown- Moist (SP)			<1			
5.0			LS2	24		2		
					<1			
		6.5 FILL- Sandy LEAN CLAY- Gray (CL)						
		7.0 END OF BORING AT 7.0 FEET.						Driller reported refusal at 7 feet
7.5								
10.0								

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB 5

BORING DEPTH: 11 FEET

PROJECT NAME: Former Harbor Beach Dump
PROJECT NUMBER: 088212.00.005.007
CLIENT: The City of Harbor Beach
PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22 **BORING METHOD:** Direct Push
OPERATOR: BM **RIG NO.:** Geoprobe **LOGGED BY:** MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	METHANE (% by volume)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
					<1			
			LS1	40	<1			
2.5					<1			
					<1			
5.0		FILL- Fine to Medium SAND with Silt- Trace Gravel and Brick Fragments- Brown- Moist (SP)	LS2	24	<1			
7.5					<1			
			LS3	30		17		
10.0					<1			
		11.0 END OF BORING AT 11.0 FEET.						

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB 6

BORING DEPTH: 10.5 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22

BORING METHOD: Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe

LOGGED BY: MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	METHANE (% by volume)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
		FILL- Fine to Medium SAND- Trace Gravel- Brown- Moist (SP)	LS1	43	<1			
2.5					<1			
					<1			
5.0			LS2	38	<1			
		7.0 FILL- Fine to Medium SAND with Silt- Trace Glass and Plastic Fragments- Black- Moist (SP)						
7.5		8.0			<1			
		SILT- Gray- Moist (ML)	LS3	20		2		
10.0					<1	9		
		10.5 END OF BORING AT 10.5 FEET.						Driller reported refusal at 10.5 feet

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB 7

BORING DEPTH: 9 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22 **BORING METHOD:** Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe **LOGGED BY:** MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	METHANE (% by volume)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
		FILL- Fine to Coarse SAND with Silt and Gravel- Trace Glass Fragments- Brown- Moist (SP)	LS1	39	<1 <1 2.5			
2.5		3.8			3.8			
5.0		FILL- Sandy LEAN CLAY- Gray (CL)	LS2	40	<1 <1	2		
7.5		9.0	LS3	12	<1	4		
		END OF BORING AT 9.0 FEET.						
10.0								

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

SME

BORING SB 8

BORING DEPTH: 7 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22 **BORING METHOD:** Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe **LOGGED BY:** MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL					
		FILL- SANDY SILT- Brown- Moist (ML)	LS1	40	<1		
2.5					<1		
		3.5			<1		
		FILL- Sandy LEAN CLAY- Gray (CL)	LS2	38	<1		
5.0					<1		
		7.0			<1		
		END OF BORING AT 7.0 FEET.					
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB 9

BORING DEPTH: 10 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22 **BORING METHOD:** Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe **LOGGED BY:** MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE ANALYZED	REMARKS
0.0		0.3 3 Inches of TOPSOIL					
					<1		
			LS1	37	<1		
2.5		FILL- Fine to Medium SAND with Silt and Gravel- Trace Brick, Plastic and Wood Fragments- Brown- Moist (SP)			<1		
					<1		
5.0							
		6.0	LS2	33	<1		
		FILL- SANDY SILT- Trace Glass- Dark Gray (ML)					
7.5							
		8.0			<1		
		SANDY SILT- Gray (ML)	LS3	24			
		10.0					
10.0		END OF BORING AT 10.0 FEET.			<1		Drilled reported refusal at 10 feet

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

BORING SB10

BORING DEPTH: 10 FEET

PROJECT NAME: Former Harbor Beach Dump

PROJECT NUMBER: 088212.00.005.007

CLIENT: The City of Harbor Beach

PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22

BORING METHOD: Direct Push

OPERATOR: BM **RIG NO.:** Geoprobe

LOGGED BY: MGJ **CHECKED BY:** BCB

DEPTH (FEET)	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE ANALYZED	TEMPORARY WELL SCREEN	REMARKS
0.0	0.3 3 Inches of TOPSOIL						
	FILL- Fine to Medium SAND- Trace Glass and Brick Fragments- Brown- Moist (SP)	LS1	38	<1 <1 <1			
2.5	3.5						
5.0	FILL - Sandy LEAN CLAY- Trace Glass, Rubber, Wood, and Gravel- Dark Gray (CL)	LS2	22	<1			A groundwater sample was collected from a temporary monitoring well. The well screen was set between 5 feet and 10 feet below the ground surface.
▽							
7.5	8.0						
	SANDY SILT- Brown- Moist (ML)	LS3	20				
10.0	10.0 END OF BORING AT 10.0 FEET.						

GROUNDWATER & BACKFILL INFORMATION

	DEPTH (FT)
▽ **DURING BORING:**	6.0

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

6/28/23 12:47:57 PM

BORING SB11

BORING DEPTH: 7 FEET

PROJECT NAME: Former Harbor Beach Dump
PROJECT NUMBER: 088212.00.005.007
CLIENT: The City of Harbor Beach
PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan

DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22 **BORING METHOD:** Direct Push
OPERATOR: BM **RIG NO.:** Geoprobe **LOGGED BY:** MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE ANALYZED	TEMPORARY WELL SCREEN	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
		FILL- Fine to Medium SAND- Brown- Moist (SP)	LS1	38	<1 <1 <1			A groundwater sample was collected from a temporary monitoring well. The well screen was set between 1 foot and 6 feet below the ground surface.
2.5 ▽		3.5						
		FILL- CLAYEY SAND- Trace Glass and Plastic Fragments- Gray (CL)	LS2	36	<1			
5.0		6.0						
		SANDY SILT- Brown- Moist (ML)						
		7.0 END OF BORING AT 7.0 FEET.						
7.5								
10.0								

GROUNDWATER & BACKFILL INFORMATION

	DEPTH (FT)
▽ **DURING BORING:**	3.0

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

6/28/23 12:47:58 PM

BORING SB12

BORING DEPTH: 7 FEET

PROJECT NAME: Former Harbor Beach Dump
PROJECT NUMBER: 088212.00.005.007
CLIENT: The City of Harbor Beach
PROJECT LOCATION: 836 Huron Avenue, Harbor Beach, Michigan
DATE STARTED: 8/9/22 **COMPLETED:** 8/9/22
BORING METHOD: Direct Push
OPERATOR: BM **RIG NO.:** Geoprobe
LOGGED BY: MGJ **CHECKED BY:** BCB

DEPTH (FEET)	SYMBOLIC PROFILE	ELEVATION: PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE ANALYZED	TEMPORARY WELL SCREEN	REMARKS
0.0		0.3 3 Inches of TOPSOIL						
		FILL- Fine to Medium SAND with Silt and Gravel- Trace Brick Fragments- Brown- Moist (SP)	LS1	40	<1 <1			A groundwater sample was collected from a temporary monitoring well. The well screen was set between 1 foot and 6 feet below the ground surface.
2.5					<1			
		3.5 Fine to Coarse SAND- Some Gravel- Brown- Moist (SP) 4.0			<1			
▽								
5.0		SANDY SILT- Gray- Wet (ML)	LS2	30				
		7.0 END OF BORING AT 7.0 FEET.						
7.5								
10.0								

GROUNDWATER & BACKFILL INFORMATION

	DEPTH (FT)
▽ **DURING BORING:**	4.0

BACKFILL METHOD: Soil Cuttings and Bentonite Chips

NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. The in-situ transitions between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. The colors depicted on the symbolic profile are solely for visualization purposes and do not necessarily represent the in-situ colors encountered.
5. No odors were noted and no staining was observed in the boring.

APPENDIX C
LABORATORY REPORTS

Fibertec environmental services

Friday, September 16, 2022

Fibertec Project Number:	A10254
Project Identification:	88212.00.005.007 /88212.00.005.007
Submittal Date:	08/11/2022

Mr. Myles Jackman
Soil and Materials Engineers, Inc. - Saginaw
1685 Champagne Dr East
Saginaw, MI 48604

Dear Mr. Jackman,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

Katherine Jones

By Katherine Jones at 9:14 AM, Sep 16, 2022

For Daryl P. Strandbergh
Laboratory Director

Enclosures

Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-001

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB1 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:08**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB1 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡	1. Percent Moisture (Water Content)	**16**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB1 (2.5-3)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	**16000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
2. Barium	**1200000**		µg/kg	5000	200	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
3. Cadmium	**12000**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**460000**		µg/kg	2000	200	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**470000**		µg/kg	2000	200	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**1100000**		µg/kg	2000	200	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
7. Selenium	U		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**7400**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**3300000**		µg/kg	5000	200	08/18/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB1 (2.5-3)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	**100**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-001A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB1 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
‡	2. Acrylonitrile	U		µg/kg	140	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	3. Benzene	**52**		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	7. Bromoform	U		µg/kg	140	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-001

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB1 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:08**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-001A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB1 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
14. Carbon Tetrachloride	U	V+	µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
19. 2-Chlorotoluene	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
21. Dibromochloromethane	U	V+	µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
28. 1,2-Dichloroethane	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
31. trans-1,2-Dichloroethene	U	V+	µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
32. 1,2-Dichloropropane	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
33. cis-1,3-Dichloropropene	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
35. Ethylbenzene	**130**		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
42. MTBE	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-001

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB1 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:08**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-001A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB1 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
48. Tetrachloroethene	**670**		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
49. Toluene	**510**		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
52. 1,1,2-Trichloroethane	U		µg/kg	71	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
53. Trichloroethene	**330**		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
55. 1,2,3-Trichloropropane	U		µg/kg	140	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
57. 1,2,4-Trimethylbenzene	**100**		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
60. m&p-Xylene	**230**		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
61. o-Xylene	**94**		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC
‡ 62. Xylenes	**330**		µg/kg	150	1.0	08/16/22	VP22H16A	08/16/22 20:21	VP22H16A	BRC

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB1 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
2. Acenaphthylene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
3. Anthracene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
9. Chrysene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
11. Fluoranthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
12. Fluorene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
15. Naphthalene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-001

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB1 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:08**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB1 (2.5-3)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
16. Phenanthrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS
17. Pyrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:28	SN22H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-002

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB2 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:35**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-002** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB2 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**8**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-002** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB2 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	**9000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
2. Barium	**36000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**230**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**10000**		µg/kg	500	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
5. Copper	**17000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
6. Lead	**18000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	U		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**1100**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**63000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA

Mercury by CVAAS **Aliquot ID: A10254-002** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB2 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	**140**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-002A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB2 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
‡ 2. Acrylonitrile	U		µg/kg	120	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
7. Bromoform	U		µg/kg	120	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-002

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB2 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:35**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-002A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB2 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
14. Carbon Tetrachloride	U	V+	µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
19. 2-Chlorotoluene	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
21. Dibromochloromethane	U	V+	µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
28. 1,2-Dichloroethane	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
31. trans-1,2-Dichloroethene	U	V+	µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
32. 1,2-Dichloropropane	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
33. cis-1,3-Dichloropropene	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
42. MTBE	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-002

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB2 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:35**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-002A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB2 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
52. 1,1,2-Trichloroethane	U		µg/kg	59	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
55. 1,2,3-Trichloropropane	U		µg/kg	120	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16A	08/16/22 20:48	VP22H16A	BRC

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-002** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB2 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
3. Anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
9. Chrysene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
12. Fluorene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
15. Naphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-002

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB2 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:35**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-002** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB2 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD
17. Pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:30	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-003

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB3 (2-2.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-003** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB3 (2-2.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡	1. Percent Moisture (Water Content)	**6**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-003** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB3 (2-2.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Arsenic	**10000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	2. Barium	**40000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	3. Cadmium	**230**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	4. Chromium	**9500**		µg/kg	500	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	5. Copper	**15000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	6. Lead	**13000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	7. Selenium	U		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	8. Silver	U		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	9. Zinc	**260000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA

Mercury by CVAAS **Aliquot ID: A10254-003** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB3 (2-2.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Mercury	U		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-003A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB3 (2-2.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	7. Bromoform	U		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-003

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB3 (2-2.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-003A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB3 (2-2.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-003

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB3 (2-2.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-003A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB3 (2-2.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	58	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 04:44	VP22H16B	ART

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-003** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB3 (2-2.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
3. Anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
9. Chrysene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
12. Fluorene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-003

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB3 (2-2.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-003** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB3 (2-2.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
15. Naphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD
17. Pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 19:56	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-004

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB4 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-004** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB4 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡	1. Percent Moisture (Water Content)	**9**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-004** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB4 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Arsenic	**8400**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	2. Barium	**60000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	3. Cadmium	**250**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	4. Chromium	**12000**		µg/kg	500	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	5. Copper	**21000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	6. Lead	**86000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	7. Selenium	U		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	8. Silver	U		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	9. Zinc	**92000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA

Mercury by CVAAS **Aliquot ID: A10254-004** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB4 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Mercury	**63**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-004A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB4 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	7. Bromoform	U		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-004

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB4 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-004A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB4 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-004

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB4 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-004A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB4 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 05:10	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-004** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB4 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
2. Acenaphthylene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
3. Aniline	U	V+ L+	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
4. Anthracene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
6. Benzo(a)anthracene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
7. Benzo(a)pyrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
8. Benzo(b)fluoranthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
9. Benzo(ghi)perylene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
10. Benzo(k)fluoranthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
11. Benzyl Alcohol	U		µg/kg	3300	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
12. Bis(2-chloroethoxy)methane	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
13. Bis(2-chloroethyl)ether	U	V+ L+	µg/kg	100	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-004

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB4 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-004** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB4 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
14. Bis(2-ethylhexyl)phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
15. 4-Bromophenyl Phenylether	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
16. Butyl Benzyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
17. Di-n-butyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 18. Carbazole	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
19. 4-Chloro-3-methylphenol	U		µg/kg	280	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
20. 2-Chloronaphthalene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
21. 2-Chlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
22. 4-Chlorophenyl Phenylether	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
23. Chrysene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
24. Dibenzo(a,h)anthracene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
25. Dibenzofuran	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
26. 2,4-Dichlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
27. Diethyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
28. 2,4-Dimethylphenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
29. Dimethyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
30. 2,4-Dinitrophenol	U	V-	µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
33. Fluoranthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
34. Fluorene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
35. Hexachlorobenzene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
36. Hexachlorobutadiene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
37. Hexachlorocyclopentadiene	U	V-	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
38. Hexachloroethane	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 40. Isophorone	U	L+	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
41. 2-Methyl-4,6-dinitrophenol	U		µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
42. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
43. 2-Methylphenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 44. 3&4-Methylphenol	U	L-	µg/kg	660	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
45. Naphthalene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
46. 2-Nitroaniline	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
47. 3-Nitroaniline	U		µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
48. 4-Nitroaniline	U	V-	µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
49. Nitrobenzene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
50. 2-Nitrophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-004

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB4 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-004** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB4 (2.5-3)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
51. 4-Nitrophenol	U		µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
52. N-Nitrosodimethylamine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
53. N-Nitrosodi-n-propylamine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
54. N-Nitrosodiphenylamine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
55. Di-n-octyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
56. 2,2'-Oxybis(1-chloropropane)	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
57. Pentachlorophenol	U	V-L-	µg/kg	800	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
58. Phenanthrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
59. Phenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
60. Pyrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
61. Pyridine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
‡ 62. 1,2,4-Trichlorobenzene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
63. 2,4,5-Trichlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS
64. 2,4,6-Trichlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 10:58	S622H22A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-005

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB5 (3.5-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:50**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**10**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**7000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
2. Barium	**53000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**210**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**12000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**13000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**20000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**280**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	U		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**55000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:11	SO22H18A	TKT

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-005

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB5 (3.5-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:50**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-005A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
7. Bromoform	U		µg/kg	130	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
10. n-Butylbenzene	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-005

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB5 (3.5-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:50**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-005A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	64	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	130	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 05:37	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
2. Acenaphthylene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
3. Aniline	U	L+ Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
4. Anthracene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-005

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB5 (3.5-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:50**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
6. Benzo(a)anthracene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
7. Benzo(a)pyrene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
8. Benzo(b)fluoranthene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
9. Benzo(ghi)perylene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
10. Benzo(k)fluoranthene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
11. Benzyl Alcohol	U		µg/kg	3300	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
12. Bis(2-chloroethoxy)methane	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
13. Bis(2-chloroethyl)ether	U	V+ L+ Y1	µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
15. 4-Bromophenyl Phenylether	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
16. Butyl Benzyl Phthalate	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
17. Di-n-butyl Phthalate	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
‡ 18. Carbazole	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
19. 4-Chloro-3-methylphenol	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
20. 2-Chloronaphthalene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
21. 2-Chlorophenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
22. 4-Chlorophenyl Phenylether	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
23. Chrysene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
24. Dibenzo(a,h)anthracene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
25. Dibenzofuran	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
26. 2,4-Dichlorophenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
27. Diethyl Phthalate	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
28. 2,4-Dimethylphenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
29. Dimethyl Phthalate	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
30. 2,4-Dinitrophenol	U	Y1	µg/kg	7400	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
33. Fluoranthene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
34. Fluorene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
35. Hexachlorobenzene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
36. Hexachlorobutadiene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
37. Hexachlorocyclopentadiene	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
38. Hexachloroethane	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-005

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB5 (3.5-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:50**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-005** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB5 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 40. Isophorone	U	L+	µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
41. 2-Methyl-4,6-dinitrophenol	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
42. 2-Methylnaphthalene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
43. 2-Methylphenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
‡ 44. 3&4-Methylphenol	U	L-	µg/kg	660	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
45. Naphthalene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
46. 2-Nitroaniline	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
47. 3-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
48. 4-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
49. Nitrobenzene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
50. 2-Nitrophenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
51. 4-Nitrophenol	U	Y1	µg/kg	7400	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
52. N-Nitrosodimethylamine	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
53. N-Nitrosodi-n-propylamine	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
54. N-Nitrosodiphenylamine	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
55. Di-n-octyl Phthalate	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
56. 2,2'-Oxybis(1-chloropropane)	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
57. Pentachlorophenol	U	V- L- Y1	µg/kg	7400	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
58. Phenanthrene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
59. Phenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
60. Pyrene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
61. Pyridine	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
‡ 62. 1,2,4-Trichlorobenzene	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
63. 2,4,5-Trichlorophenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS
64. 2,4,6-Trichlorophenol	U		µg/kg	370	10	08/22/22	PS22H18I	08/24/22 13:18	S622H24A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-006

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB6 (7-7.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**21**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**16000**		µg/kg	500	100	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
2. Barium	**210000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**2600**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**38000**		µg/kg	1000	100	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**250000**		µg/kg	1000	100	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**470000**		µg/kg	1000	100	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
7. Selenium	**330**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**1300**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**1200000**		µg/kg	2500	100	08/18/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	**95**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
6. Aroclor-1254	**5200**		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
7. Aroclor-1260	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT
‡ 9. Aroclor-1268	U		µg/kg	420	25	08/18/22	PS22H17C	08/18/22 16:21	SO22H18A	TKT

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-006

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB6 (7-7.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-006A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB6 (7-7.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	160	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	7. Bromoform	U		µg/kg	160	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	10. n-Butylbenzene	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	14. Carbon Tetrachloride	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	19. 2-Chlorotoluene	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
‡	20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	28. 1,2-Dichloroethane	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	31. trans-1,2-Dichloroethene	U	V+	µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	32. 1,2-Dichloropropane	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	33. cis-1,3-Dichloropropene	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
	36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-006

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB6 (7-7.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-006A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
49. Toluene	**160**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	80	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	160	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 06:03	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
2. Acenaphthylene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
3. Aniline	U	L+ Y1	µg/kg	2100	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
4. Anthracene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-006

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB6 (7-7.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
6. Benzo(a)anthracene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
7. Benzo(a)pyrene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
8. Benzo(b)fluoranthene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
9. Benzo(ghi)perylene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
10. Benzo(k)fluoranthene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
11. Benzyl Alcohol	U		µg/kg	3300	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
12. Bis(2-chloroethoxy)methane	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
13. Bis(2-chloroethyl)ether	U	L+ Y1	µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
15. 4-Bromophenyl Phenylether	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
16. Butyl Benzyl Phthalate	U	Y1	µg/kg	2100	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
17. Di-n-butyl Phthalate	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
‡ 18. Carbazole	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
19. 4-Chloro-3-methylphenol	U	Y1	µg/kg	2100	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
20. 2-Chloronaphthalene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
21. 2-Chlorophenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
22. 4-Chlorophenyl Phenylether	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
23. Chrysene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
24. Dibenzo(a,h)anthracene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
25. Dibenzofuran	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
26. 2,4-Dichlorophenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
27. Diethyl Phthalate	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
28. 2,4-Dimethylphenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
29. Dimethyl Phthalate	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
30. 2,4-Dinitrophenol	U	V- Y1	µg/kg	8500	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
33. Fluoranthene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
34. Fluorene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
35. Hexachlorobenzene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
36. Hexachlorobutadiene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
37. Hexachlorocyclopentadiene	U	V- Y1	µg/kg	2100	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
38. Hexachloroethane	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-006

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB6 (7-7.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-006** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB6 (7-7.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 40. Isophorone	U	L+	µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
41. 2-Methyl-4,6-dinitrophenol	U	Y1	µg/kg	2100	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
42. 2-Methylnaphthalene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
43. 2-Methylphenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
‡ 44. 3&4-Methylphenol	U	L-	µg/kg	660	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
45. Naphthalene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
46. 2-Nitroaniline	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
47. 3-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
48. 4-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
49. Nitrobenzene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
50. 2-Nitrophenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
51. 4-Nitrophenol	U	Y1	µg/kg	8500	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
52. N-Nitrosodimethylamine	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
53. N-Nitrosodi-n-propylamine	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
54. N-Nitrosodiphenylamine	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
55. Di-n-octyl Phthalate	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
56. 2,2'-Oxybis(1-chloropropane)	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
57. Pentachlorophenol	U	L- Y1	µg/kg	8500	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
58. Phenanthrene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
59. Phenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
60. Pyrene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
61. Pyridine	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
‡ 62. 1,2,4-Trichlorobenzene	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
63. 2,4,5-Trichlorophenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS
64. 2,4,6-Trichlorophenol	U		µg/kg	420	10	08/22/22	PS22H18I	08/24/22 05:56	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-007

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**15**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**12000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
2. Barium	**49000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**530**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**12000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**120000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**75000**	F+ *	µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**470**		µg/kg	200	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
8. Silver	**160**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**120000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	**53**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-007

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:34	SO22H18A	TKT

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-007A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
7. Bromoform	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
10. n-Butylbenzene	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
29. 1,1-Dichloroethene	U	F-	µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-007

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-007A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
35. Ethylbenzene	**180**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U	F-	µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
48. Tetrachloroethene	**220**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
49. Toluene	**180**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
60. m&p-Xylene	**210**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
61. o-Xylene	**110**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART
‡ 62. Xylenes	**320**		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 01:12	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-007

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
2. Acenaphthylene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
3. Aniline	U	V+ L+ F- F+ *	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
4. Anthracene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
6. Benzo(a)anthracene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
7. Benzo(a)pyrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
8. Benzo(b)fluoranthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
9. Benzo(ghi)perylene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
10. Benzo(k)fluoranthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
11. Benzyl Alcohol	U	F-	µg/kg	3300	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
12. Bis(2-chloroethoxy)methane	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
13. Bis(2-chloroethyl)ether	U	V+ L+	µg/kg	100	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
15. 4-Bromophenyl Phenylether	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
16. Butyl Benzyl Phthalate	U	F-	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
17. Di-n-butyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 18. Carbazole	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
19. 4-Chloro-3-methylphenol	U	F-	µg/kg	280	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
20. 2-Chloronaphthalene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
21. 2-Chlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
22. 4-Chlorophenyl Phenylether	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
23. Chrysene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
24. Dibenzo(a,h)anthracene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
25. Dibenzofuran	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
26. 2,4-Dichlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
27. Diethyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
28. 2,4-Dimethylphenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
29. Dimethyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
30. 2,4-Dinitrophenol	U	F- V-	µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
33. Fluoranthene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-007

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-007** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
34. Fluorene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
35. Hexachlorobenzene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
36. Hexachlorobutadiene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
37. Hexachlorocyclopentadiene	U	F-V-	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
38. Hexachloroethane	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 40. Isophorone	U	L+	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
41. 2-Methyl-4,6-dinitrophenol	U	F-	µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
42. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
43. 2-Methylphenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 44. 3&4-Methylphenol	U	L-	µg/kg	660	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
45. Naphthalene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
46. 2-Nitroaniline	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
47. 3-Nitroaniline	U		µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
48. 4-Nitroaniline	U	V-	µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
49. Nitrobenzene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
50. 2-Nitrophenol	U	F-	µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
51. 4-Nitrophenol	U	F-	µg/kg	830	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
52. N-Nitrosodimethylamine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
53. N-Nitrosodi-n-propylamine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
54. N-Nitrosodiphenylamine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
55. Di-n-octyl Phthalate	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
56. 2,2'-Oxybis(1-chloropropane)	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
57. Pentachlorophenol	U	F-V-L-	µg/kg	800	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
58. Phenanthrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
59. Phenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
60. Pyrene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
61. Pyridine	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
‡ 62. 1,2,4-Trichlorobenzene	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
63. 2,4,5-Trichlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS
64. 2,4,6-Trichlorophenol	U		µg/kg	330	1.0	08/19/22	PS22H18I	08/22/22 11:37	S622H22A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-008

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MS**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB7 (3-4) MS**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**13**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB7 (3-4) MS**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	**24000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
2. Barium	**97000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**11000**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**33000**		µg/kg	500	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
5. Copper	**380000**		µg/kg	1000	50	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**110000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**11000**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**11000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**170000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA

Mercury by CVAAS **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB7 (3-4) MS**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	**270**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB7 (3-4) MS**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	**500**		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
7. Aroclor-1260	**500**		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:47	SO22H18A	TKT

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-008

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MS**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-008A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB7 (3-4) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	**2500**		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
‡ 2. Acrylonitrile	**3000**		µg/kg	130	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
3. Benzene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
4. Bromobenzene	**3500**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
5. Bromochloromethane	**3300**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
6. Bromodichloromethane	**3800**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
7. Bromoform	**3300**		µg/kg	130	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
8. Bromomethane	**3300**		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
9. 2-Butanone	**2800**		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
10. n-Butylbenzene	**3500**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
11. sec-Butylbenzene	**3600**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
12. tert-Butylbenzene	**3600**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
13. Carbon Disulfide	**3800**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
14. Carbon Tetrachloride	**3800**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
15. Chlorobenzene	**3600**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
16. Chloroethane	**3200**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
17. Chloroform	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
18. Chloromethane	**3200**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
19. 2-Chlorotoluene	**3700**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	**3000**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
21. Dibromochloromethane	**4300**	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
22. Dibromomethane	**3700**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
23. 1,2-Dichlorobenzene	**3500**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
24. 1,3-Dichlorobenzene	**3600**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
25. 1,4-Dichlorobenzene	**3500**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
26. Dichlorodifluoromethane	**3900**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
27. 1,1-Dichloroethane	**3100**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
28. 1,2-Dichloroethane	**3200**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
29. 1,1-Dichloroethene	**2600**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
30. cis-1,2-Dichloroethene	**3000**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
31. trans-1,2-Dichloroethene	**3900**	V+	µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
32. 1,2-Dichloropropane	**3400**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
33. cis-1,3-Dichloropropene	**3600**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
34. trans-1,3-Dichloropropene	**3600**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
35. Ethylbenzene	**3800**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
36. Ethylene Dibromide	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-008

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MS**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-008A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB7 (3-4) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	**3000**		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
38. Isopropylbenzene	**3700**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
39. 4-Methyl-2-pentanone	**3500**		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
40. Methylene Chloride	**3600**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	**1700**		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
42. MTBE	**4300**	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
43. Naphthalene	**2600**		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
44. n-Propylbenzene	**3700**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
45. Styrene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	**3800**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	**3600**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
48. Tetrachloroethene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
49. Toluene	**3700**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	**2900**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
51. 1,1,1-Trichloroethane	**3900**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
52. 1,1,2-Trichloroethane	**3400**		µg/kg	67	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
53. Trichloroethene	**3400**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
54. Trichlorofluoromethane	**4100**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
55. 1,2,3-Trichloropropane	**3400**		µg/kg	130	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	**3400**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	**3700**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	**3700**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
59. Vinyl Chloride	**3400**		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
60. m&p-Xylene	**7300**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
61. o-Xylene	**3500**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART
‡ 62. Xylenes	**11000**		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 01:39	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
2. Acenaphthylene	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
3. Aniline	**3900**	V+ L+	µg/kg	3800	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
4. Anthracene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-008

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MS**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	**2400**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
6. Benzo(a)anthracene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
7. Benzo(a)pyrene	**2300**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
8. Benzo(b)fluoranthene	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
9. Benzo(ghi)perylene	**2900**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
10. Benzo(k)fluoranthene	**2900**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
11. Benzyl Alcohol	U	Y1	µg/kg	3800	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
12. Bis(2-chloroethoxy)methane	**2500**	L+	µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
13. Bis(2-chloroethyl)ether	**2700**	V+	µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
14. Bis(2-ethylhexyl)phthalate	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
15. 4-Bromophenyl Phenylether	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
16. Butyl Benzyl Phthalate	U	Y1	µg/kg	3800	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
17. Di-n-butyl Phthalate	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
‡ 18. Carbazole	**2900**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
19. 4-Chloro-3-methylphenol	U	Y1	µg/kg	3800	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
20. 2-Chloronaphthalene	**2500**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
21. 2-Chlorophenol	**1900**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
22. 4-Chlorophenyl Phenylether	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
23. Chrysene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
24. Dibenzo(a,h)anthracene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
25. Dibenzofuran	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
26. 2,4-Dichlorophenol	**2000**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
27. Diethyl Phthalate	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
28. 2,4-Dimethylphenol	**2200**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
29. Dimethyl Phthalate	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
30. 2,4-Dinitrophenol	U	Y1	µg/kg	15000	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
‡ 31. 2,4-Dinitrotoluene	**2400**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
‡ 32. 2,6-Dinitrotoluene	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
33. Fluoranthene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
34. Fluorene	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
35. Hexachlorobenzene	**2500**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
36. Hexachlorobutadiene	**2200**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
37. Hexachlorocyclopentadiene	U	Y1	µg/kg	3800	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
38. Hexachloroethane	**1900**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
39. Indeno(1,2,3-cd)pyrene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
‡ 40. Isophorone	**2800**	L+	µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
41. 2-Methyl-4,6-dinitrophenol	U	Y1	µg/kg	3800	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-008

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MS**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-008** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
42. 2-Methylnaphthalene	**2300**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
43. 2-Methylphenol	**2000**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
‡ 44. 3&4-Methylphenol	**1900**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
45. Naphthalene	**2300**	V+	µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
46. 2-Nitroaniline	**2200**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
47. 3-Nitroaniline	**2500**		µg/kg	830	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
48. 4-Nitroaniline	**2800**		µg/kg	830	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
49. Nitrobenzene	**2000**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
50. 2-Nitrophenol	**1800**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
51. 4-Nitrophenol	U	Y1	µg/kg	15000	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
52. N-Nitrosodimethylamine	**1800**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
53. N-Nitrosodi-n-propylamine	**2100**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
54. N-Nitrosodiphenylamine	**3200**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
55. Di-n-octyl Phthalate	**2600**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
56. 2,2'-Oxybis(1-chloropropane)	**2400**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
57. Pentachlorophenol	U	V-Y1	µg/kg	15000	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
58. Phenanthrene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
59. Phenol	**2100**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
60. Pyrene	**2700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
61. Pyridine	**1700**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
‡ 62. 1,2,4-Trichlorobenzene	**2200**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
63. 2,4,5-Trichlorophenol	**2400**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS
64. 2,4,6-Trichlorophenol	**2200**		µg/kg	760	20	08/25/22	PS22H25I	08/26/22 00:27	S622H25B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-009

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MSD**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB7 (3-4) MSD**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**10**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB7 (3-4) MSD**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	**23000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
2. Barium	**100000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**11000**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**32000**		µg/kg	500	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
5. Copper	**890000**		µg/kg	2000	200	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**110000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**10000**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**10000**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**170000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA

Mercury by CVAAS **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB7 (3-4) MSD**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	**260**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB7 (3-4) MSD**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	**530**		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
7. Aroclor-1260	**500**		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 09:59	SO22H18A	TKT

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-009

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MSD**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-009A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB7 (3-4) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	**2400**		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
‡ 2. Acrylonitrile	**2900**		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
3. Benzene	**3100**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
4. Bromobenzene	**3200**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
5. Bromochloromethane	**2900**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
6. Bromodichloromethane	**3500**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
7. Bromoform	**3200**		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
8. Bromomethane	**2900**		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
9. 2-Butanone	**2700**		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
10. n-Butylbenzene	**3200**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
11. sec-Butylbenzene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
12. tert-Butylbenzene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
13. Carbon Disulfide	**3600**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
14. Carbon Tetrachloride	**3600**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
15. Chlorobenzene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
16. Chloroethane	**2900**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
17. Chloroform	**3100**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
18. Chloromethane	**2900**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
19. 2-Chlorotoluene	**3300**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	**2900**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
21. Dibromochloromethane	**3900**	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
22. Dibromomethane	**3300**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
23. 1,2-Dichlorobenzene	**3200**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
24. 1,3-Dichlorobenzene	**3300**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
25. 1,4-Dichlorobenzene	**3200**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
26. Dichlorodifluoromethane	**3500**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
27. 1,1-Dichloroethane	**2900**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
28. 1,2-Dichloroethane	**2900**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
29. 1,1-Dichloroethene	**2300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
30. cis-1,2-Dichloroethene	**2700**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
31. trans-1,2-Dichloroethene	**3600**	V+	µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
32. 1,2-Dichloropropane	**3100**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
33. cis-1,3-Dichloropropene	**3200**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
34. trans-1,3-Dichloropropene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
35. Ethylbenzene	**3500**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
36. Ethylene Dibromide	**3200**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-009

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MSD**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-009A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB7 (3-4) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	**3000**		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
38. Isopropylbenzene	**3400**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
39. 4-Methyl-2-pentanone	**3600**		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
40. Methylene Chloride	**3200**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	**2200**		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
42. MTBE	**3900**	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
43. Naphthalene	**2500**		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
44. n-Propylbenzene	**3400**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
45. Styrene	**3100**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	**3500**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	**3300**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
48. Tetrachloroethene	**3100**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
49. Toluene	**3400**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	**2700**		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
51. 1,1,1-Trichloroethane	**3500**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
52. 1,1,2-Trichloroethane	**3100**		µg/kg	62	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
53. Trichloroethene	**3200**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
54. Trichlorofluoromethane	**3600**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
55. 1,2,3-Trichloropropane	**3200**		µg/kg	120	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	**3100**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	**3400**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	**3400**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
59. Vinyl Chloride	**3000**		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
60. m&p-Xylene	**6700**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
61. o-Xylene	**3300**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART
‡ 62. Xylenes	**10000**		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 02:05	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
2. Acenaphthylene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
3. Aniline	U	V+ L+ Y1	µg/kg	3700	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
4. Anthracene	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-009

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MSD**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	**2200**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
6. Benzo(a)anthracene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
7. Benzo(a)pyrene	**2200**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
8. Benzo(b)fluoranthene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
9. Benzo(ghi)perylene	**2700**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
10. Benzo(k)fluoranthene	**2700**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
11. Benzyl Alcohol	U	Y1	µg/kg	3700	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
12. Bis(2-chloroethoxy)methane	**2400**	L+	µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
13. Bis(2-chloroethyl)ether	**2600**	V+	µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
14. Bis(2-ethylhexyl)phthalate	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
15. 4-Bromophenyl Phenylether	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
16. Butyl Benzyl Phthalate	U	Y1	µg/kg	3700	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
17. Di-n-butyl Phthalate	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
‡ 18. Carbazole	**2800**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
19. 4-Chloro-3-methylphenol	U	Y1	µg/kg	3700	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
20. 2-Chloronaphthalene	**2400**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
21. 2-Chlorophenol	**1800**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
22. 4-Chlorophenyl Phenylether	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
23. Chrysene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
24. Dibenzo(a,h)anthracene	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
25. Dibenzofuran	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
26. 2,4-Dichlorophenol	**1900**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
27. Diethyl Phthalate	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
28. 2,4-Dimethylphenol	**2100**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
29. Dimethyl Phthalate	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
30. 2,4-Dinitrophenol	U	Y1	µg/kg	15000	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
‡ 31. 2,4-Dinitrotoluene	**2300**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
‡ 32. 2,6-Dinitrotoluene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
33. Fluoranthene	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
34. Fluorene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
35. Hexachlorobenzene	**2400**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
36. Hexachlorobutadiene	**2200**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
37. Hexachlorocyclopentadiene	U	Y1	µg/kg	3700	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
38. Hexachloroethane	**1900**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
39. Indeno(1,2,3-cd)pyrene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
‡ 40. Isophorone	**2800**	L+	µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
41. 2-Methyl-4,6-dinitrophenol	U	Y1	µg/kg	3700	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-009

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB7 (3-4) MSD**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:05**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-009** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB7 (3-4) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
42. 2-Methylnaphthalene	**2200**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
43. 2-Methylphenol	**2000**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
‡ 44. 3&4-Methylphenol	**1800**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
45. Naphthalene	**2200**	V+	µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
46. 2-Nitroaniline	**2200**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
47. 3-Nitroaniline	**2500**		µg/kg	830	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
48. 4-Nitroaniline	**2600**		µg/kg	830	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
49. Nitrobenzene	**2000**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
50. 2-Nitrophenol	**1700**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
51. 4-Nitrophenol	U	Y1	µg/kg	15000	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
52. N-Nitrosodimethylamine	**1800**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
53. N-Nitrosodi-n-propylamine	**2000**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
54. N-Nitrosodiphenylamine	**3000**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
55. Di-n-octyl Phthalate	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
56. 2,2'-Oxybis(1-chloropropane)	**2300**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
57. Pentachlorophenol	U	V-Y1	µg/kg	15000	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
58. Phenanthrene	**2500**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
59. Phenol	**2000**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
60. Pyrene	**2600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
61. Pyridine	**1600**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
‡ 62. 1,2,4-Trichlorobenzene	**2100**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
63. 2,4,5-Trichlorophenol	**2300**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS
64. 2,4,6-Trichlorophenol	**2100**		µg/kg	740	20	08/25/22	PS22H25I	08/25/22 23:48	S622H25B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-010

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB8 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB8 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**25**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB8 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	**11000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
2. Barium	**79000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**290**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**14000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**18000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**20000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**570**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	U		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**120000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB8 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	**62**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: SB8 (4-4.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:46	SO22H18A	TKT

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-010

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB8 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-010A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB8 (4-4.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	170	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	7. Bromoform	U		µg/kg	170	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	10. n-Butylbenzene	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	14. Carbon Tetrachloride	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	19. 2-Chlorotoluene	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
‡	20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	28. 1,2-Dichloroethane	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	31. trans-1,2-Dichloroethene	U	V+	µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	32. 1,2-Dichloropropane	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	33. cis-1,3-Dichloropropene	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
	36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-010

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB8 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-010A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB8 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	85	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	170	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	42	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 06:30	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB8 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
2. Acenaphthylene	**700**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
3. Aniline	U	L+ Y1	µg/kg	2200	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
4. Anthracene	**3100**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-010

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB8 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB8 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
6. Benzo(a)anthracene	**5100**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
7. Benzo(a)pyrene	**3900**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
8. Benzo(b)fluoranthene	**5600**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
9. Benzo(ghi)perylene	**2700**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
10. Benzo(k)fluoranthene	**2300**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
11. Benzyl Alcohol	U		µg/kg	3300	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
12. Bis(2-chloroethoxy)methane	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
13. Bis(2-chloroethyl)ether	U	L+ Y1	µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
15. 4-Bromophenyl Phenylether	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
16. Butyl Benzyl Phthalate	U	Y1	µg/kg	2200	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
17. Di-n-butyl Phthalate	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
‡ 18. Carbazole	**870**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
19. 4-Chloro-3-methylphenol	U	Y1	µg/kg	2200	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
20. 2-Chloronaphthalene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
21. 2-Chlorophenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
22. 4-Chlorophenyl Phenylether	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
23. Chrysene	**5200**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
24. Dibenzo(a,h)anthracene	**730**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
25. Dibenzofuran	**990**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
26. 2,4-Dichlorophenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
27. Diethyl Phthalate	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
28. 2,4-Dimethylphenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
29. Dimethyl Phthalate	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
30. 2,4-Dinitrophenol	U	V- Y1	µg/kg	8900	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
33. Fluoranthene	**12000**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
34. Fluorene	**1800**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
35. Hexachlorobenzene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
36. Hexachlorobutadiene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
37. Hexachlorocyclopentadiene	U	V- Y1	µg/kg	2200	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
38. Hexachloroethane	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
39. Indeno(1,2,3-cd)pyrene	**2600**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-010

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB8 (4-4.5)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-010** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: SB8 (4-4.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 40. Isophorone	U	L+	µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
41. 2-Methyl-4,6-dinitrophenol	U	Y1	µg/kg	2200	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
42. 2-Methylnaphthalene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
43. 2-Methylphenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
‡ 44. 3&4-Methylphenol	U	L-	µg/kg	660	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
45. Naphthalene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
46. 2-Nitroaniline	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
47. 3-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
48. 4-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
49. Nitrobenzene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
50. 2-Nitrophenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
51. 4-Nitrophenol	U	Y1	µg/kg	8900	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
52. N-Nitrosodimethylamine	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
53. N-Nitrosodi-n-propylamine	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
54. N-Nitrosodiphenylamine	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
55. Di-n-octyl Phthalate	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
56. 2,2'-Oxybis(1-chloropropane)	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
57. Pentachlorophenol	U	L- Y1	µg/kg	8900	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
58. Phenanthrene	**12000**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
59. Phenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
60. Pyrene	**9800**		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
61. Pyridine	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
‡ 62. 1,2,4-Trichlorobenzene	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
63. 2,4,5-Trichlorophenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS
64. 2,4,6-Trichlorophenol	U		µg/kg	450	10	08/22/22	PS22H18I	08/24/22 03:22	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-011

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB9 (7.5-8)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-011** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**25**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-011** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**11000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
2. Barium	**82000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**320**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**18000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**200000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**48000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**210**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**100**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**140000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-011** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-011A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
‡ 2. Acrylonitrile	U		µg/kg	170	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
7. Bromoform	U		µg/kg	170	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-011

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB9 (7.5-8)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-011A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-011

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB9 (7.5-8)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-011A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
49. Toluene	**200**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	87	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	170	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	44	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 06:56	VP22H16B	ART

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-011** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB9 (7.5-8)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
3. Anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
9. Chrysene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
12. Fluorene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-011

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB9 (7.5-8)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-011** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB9 (7.5-8)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
15. Naphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD
17. Pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:23	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-012

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-012** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB10 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡	1. Percent Moisture (Water Content)	**17**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-012** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB10 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Arsenic	**19000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	2. Barium	**68000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	3. Cadmium	**760**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	4. Chromium	**18000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	5. Copper	**34000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	6. Lead	**210000**		µg/kg	1000	40	08/18/22	PT22H17F	08/18/22	T422H18A	CJA
	7. Selenium	**330**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	8. Silver	**210**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	9. Zinc	**170000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-012** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB10 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Mercury	**200**		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-012A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB10 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	7. Bromoform	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-012

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-012A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB10 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-012

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-012A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB10 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
48. Tetrachloroethene	**270**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
49. Toluene	**89**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	70	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
53. Trichloroethene	**64**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
61. o-Xylene	**62**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 07:22	VP22H16B	ART

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-012** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB10 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
2. Acenaphthylene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
3. Anthracene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
9. Chrysene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
11. Fluoranthene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
12. Fluorene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-012

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-012** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB10 (3.5-4)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
15. Naphthalene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
16. Phenanthrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS
17. Pyrene (SIM)	U		µg/kg	330	5.0	08/18/22	PS22H17D	08/18/22 10:55	SN22H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-013

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10-GW (5-10)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**13:50**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-013A** **Matrix: Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: SB10-GW (5-10)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	**290**		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	U		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	U		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	U		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	**83**		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	U		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	**130**		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-013A** **Matrix: Ground Water**
Method: EPA 7470A **Description: SB10-GW (5-10)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-013B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB10-GW (5-10)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
3. Benzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
4. Bromobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
5. Bromochloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
6. Bromodichloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
7. Bromoform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
‡ 8. Bromoform (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
9. Bromomethane	U	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
10. 2-Butanone	U		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
11. n-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
12. sec-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
13. tert-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
14. Carbon Disulfide	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
15. Carbon Tetrachloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-013

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10-GW (5-10)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**13:50**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-013B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB10-GW (5-10)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
16. Chlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
17. Chloroethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
18. Chloroform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
19. Chloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
20. 2-Chlorotoluene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
22. Dibromochloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
23. Dibromomethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
24. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
25. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
26. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
27. Dichlorodifluoromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
28. 1,1-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
29. 1,2-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
30. 1,1-Dichloroethene	U	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
31. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
32. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
33. 1,2-Dichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
34. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
35. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
36. Ethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
37. Ethylene Dibromide	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
39. Isopropylbenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
41. Methylene Chloride	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
43. MTBE	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
44. Naphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
45. n-Propylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
46. Styrene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
49. Tetrachloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
50. Toluene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
52. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-013

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10-GW (5-10)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**13:50**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-013B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB10-GW (5-10)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 53. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
54. Trichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
55. Trichlorofluoromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
56. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
60. Vinyl Chloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
61. m&p-Xylene	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
62. o-Xylene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC
‡ 63. Xylenes	U		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 04:35	VI22H16B	SNC

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-013** **Matrix: Ground Water**
Method: EPA 3535A/EPA 8270E **Description: SB10-GW (5-10)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
3. Anthracene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
9. Chrysene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
11. Fluoranthene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
12. Fluorene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
15. Naphthalene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
16. Phenanthrene (SIM)	U		µg/L	2.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG
17. Pyrene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 00:38	SJ22H16C	KDG

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-014

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-014** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB11 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡	1. Percent Moisture (Water Content)	**26**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-014** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB11 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Arsenic	**16000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	2. Barium	**45000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	3. Cadmium	**740**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	4. Chromium	**20000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	5. Copper	**37000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	6. Lead	**69000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	7. Selenium	**200**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	8. Silver	**120**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	9. Zinc	**270000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-014** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB11 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Mercury	U		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-014A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB11 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	180	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	7. Bromoform	U		µg/kg	180	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-014

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-014A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB11 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
15. Chlorobenzene	**330**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
25. 1,4-Dichlorobenzene	**220**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-014

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-014A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB11 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
48. Tetrachloroethene	**85**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	92	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	180	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	**120**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	**490**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	**110**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	46	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
60. m&p-Xylene	**180**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART
‡ 62. Xylenes	**180**		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 07:49	VP22H16B	ART

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-014** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB11 (3.5-4)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
3. Anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
9. Chrysene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
12. Fluorene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-014

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11 (3.5-4)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**10:55**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-014** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB11 (3.5-4)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
15. Naphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD
17. Pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 20:49	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-015

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-015A** **Matrix: Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	**130**		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	U		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	U		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	**4.5**		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	**5.3**		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	U		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	**77**		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-015A** **Matrix: Ground Water**
Method: EPA 7470A **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-015** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8082A **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
2. Aroclor-1221	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
3. Aroclor-1232	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
4. Aroclor-1242	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
5. Aroclor-1248	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
6. Aroclor-1254	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
7. Aroclor-1260	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
‡ 8. Aroclor-1262	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT
‡ 9. Aroclor-1268	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:25	SF22H23A	TKT

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-015B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-015

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-015B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
3. Benzene	**4.5**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
4. Bromobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
5. Bromochloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
6. Bromodichloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
7. Bromoform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
‡ 8. Bromoform (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
9. Bromomethane	U	* V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
10. 2-Butanone	U		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
11. n-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
12. sec-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
13. tert-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
14. Carbon Disulfide	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
15. Carbon Tetrachloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
16. Chlorobenzene	**99**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
17. Chloroethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
18. Chloroform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
19. Chloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
20. 2-Chlorotoluene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
22. Dibromochloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
23. Dibromomethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
24. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
25. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
26. 1,4-Dichlorobenzene	**13**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
27. Dichlorodifluoromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
28. 1,1-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
29. 1,2-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
30. 1,1-Dichloroethene	U	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
31. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
32. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
33. 1,2-Dichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
34. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
35. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
36. Ethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
37. Ethylene Dibromide	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-015

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-015B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
39. Isopropylbenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
41. Methylene Chloride	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
43. MTBE	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
44. Naphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
45. n-Propylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
46. Styrene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
49. Tetrachloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
50. Toluene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
52. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
‡ 53. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
54. Trichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
55. Trichlorofluoromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
56. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	**3.7**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
60. Vinyl Chloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
61. m&p-Xylene	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
62. o-Xylene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC
‡ 63. Xylenes	U		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 06:21	VI22H16B	SNC

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-015** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
2. Acenaphthylene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
3. Aniline	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
4. Anthracene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-015

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-015** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
6. Benzo(a)anthracene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
7. Benzo(a)pyrene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
8. Benzo(b)fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
9. Benzo(ghi)perylene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
10. Benzo(k)fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
11. Benzyl Alcohol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
12. Bis(2-chloroethoxy)methane	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
13. Bis(2-chloroethyl)ether	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
15. 4-Bromophenyl Phenylether	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
16. Butyl Benzyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
17. Di-n-butyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
‡ 18. Carbazole	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
19. 4-Chloro-3-methylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
20. 2-Chloronaphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
21. 2-Chlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
22. 4-Chlorophenyl Phenylether	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
23. Chrysene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
24. Dibenzo(a,h)anthracene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
25. Dibenzofuran	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
26. 2,4-Dichlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
27. Diethyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
28. 2,4-Dimethylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
29. Dimethyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
30. 2,4-Dinitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
33. Fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
34. Fluorene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
35. Hexachlorobenzene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
36. Hexachlorobutadiene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
37. Hexachlorocyclopentadiene	U	F-	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
38. Hexachloroethane	U	F-	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
‡ 40. Isophorone	U	L+ F+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
41. 2-Methyl-4,6-dinitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS

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Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-015

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-015** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
43. 2-Methylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
‡ 44. 3&4-Methylphenol	U		µg/L	10	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
45. Naphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
46. 2-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
47. 3-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
48. 4-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
49. Nitrobenzene	U		µg/L	3.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
50. 2-Nitrophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
51. 4-Nitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
52. N-Nitrosodimethylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
53. N-Nitrosodi-n-propylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
54. N-Nitrosodiphenylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
55. Di-n-octyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
56. 2,2'-Oxybis(1-chloropropane)	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
57. Pentachlorophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
58. Phenanthrene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
59. Phenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
60. Pyrene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
61. Pyridine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
62. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
63. 2,4,5-Trichlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS
64. 2,4,6-Trichlorophenol	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 13:57	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-016

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MS**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-016A** **Matrix: Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**100**		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	**640**		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	**100**		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	**200**		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	**200**		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	**190**		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	**100**		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	**100**		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	**550**		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-016A** **Matrix: Ground Water**
Method: EPA 7470A **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	**0.26**		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-016** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8082A **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	**2.2**		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
2. Aroclor-1221	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
3. Aroclor-1232	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
4. Aroclor-1242	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
5. Aroclor-1248	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
6. Aroclor-1254	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
7. Aroclor-1260	**2.0**		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
‡ 8. Aroclor-1262	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT
‡ 9. Aroclor-1268	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:03	SF22H23A	TKT

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-016B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC

Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-016

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MS**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-016B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 2. Acrylonitrile	**45**		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
3. Benzene	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
4. Bromobenzene	**45**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
5. Bromochloromethane	**44**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
6. Bromodichloromethane	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
7. Bromoform	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
‡ 8. Bromoform (SIM)	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
9. Bromomethane	**39**	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
10. 2-Butanone	**42**		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
11. n-Butylbenzene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
12. sec-Butylbenzene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
13. tert-Butylbenzene	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
14. Carbon Disulfide	**51**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
15. Carbon Tetrachloride	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
16. Chlorobenzene	**150**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
17. Chloroethane	**52**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
18. Chloroform	**46**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
19. Chloromethane	**46**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
20. 2-Chlorotoluene	**50**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	**48**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
22. Dibromochloromethane	**50**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
23. Dibromomethane	**47**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
24. 1,2-Dichlorobenzene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
25. 1,3-Dichlorobenzene	**48**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
26. 1,4-Dichlorobenzene	**59**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
27. Dichlorodifluoromethane	**54**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
28. 1,1-Dichloroethane	**45**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
29. 1,2-Dichloroethane	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
30. 1,1-Dichloroethene	**40**	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
31. cis-1,2-Dichloroethene	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
32. trans-1,2-Dichloroethene	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
33. 1,2-Dichloropropane	**47**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
34. cis-1,3-Dichloropropene	**48**		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
35. trans-1,3-Dichloropropene	**50**		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
36. Ethylbenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
37. Ethylene Dibromide	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-016

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MS**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-016B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
39. Isopropylbenzene	**54**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
40. 4-Methyl-2-pentanone	**57**		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
41. Methylene Chloride	**39**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	**52**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
43. MTBE	**51**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
44. Naphthalene	**48**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
45. n-Propylbenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
46. Styrene	**48**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	**54**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	**60**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
49. Tetrachloroethene	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
50. Toluene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	**46**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
52. 1,1,1-Trichloroethane	**54**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
‡ 53. 1,1,2-Trichloroethane	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
54. Trichloroethene	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
55. Trichlorofluoromethane	**60**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
56. 1,2,3-Trichloropropane	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	**48**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	**54**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
60. Vinyl Chloride	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
61. m&p-Xylene	**100**		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
62. o-Xylene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC
‡ 63. Xylenes	**150**		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 06:48	VI22H16B	SNC

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-016** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	**66**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
2. Acenaphthylene	**65**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
3. Aniline	**60**		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
4. Anthracene	**72**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	**67**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
6. Benzo(a)anthracene	**70**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-016

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MS**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-016** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
7. Benzo(a)pyrene	**63**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
8. Benzo(b)fluoranthene	**77**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
9. Benzo(ghi)perylene	**81**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
10. Benzo(k)fluoranthene	**72**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
11. Benzyl Alcohol	**60**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
12. Bis(2-chloroethoxy)methane	**82**	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
13. Bis(2-chloroethyl)ether	**74**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
14. Bis(2-ethylhexyl)phthalate	**77**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
15. 4-Bromophenyl Phenylether	**71**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
16. Butyl Benzyl Phthalate	**76**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
17. Di-n-butyl Phthalate	**76**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
‡ 18. Carbazole	**79**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
19. 4-Chloro-3-methylphenol	**69**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
20. 2-Chloronaphthalene	**62**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
21. 2-Chlorophenol	**60**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
22. 4-Chlorophenyl Phenylether	**69**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
23. Chrysene	**69**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
24. Dibenzo(a,h)anthracene	**74**		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
25. Dibenzofuran	**67**		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
26. 2,4-Dichlorophenol	**66**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
27. Diethyl Phthalate	**68**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
28. 2,4-Dimethylphenol	**73**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
29. Dimethyl Phthalate	**73**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
30. 2,4-Dinitrophenol	**34**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
‡ 31. 2,4-Dinitrotoluene	**71**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
‡ 32. 2,6-Dinitrotoluene	**68**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
33. Fluoranthene	**73**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
34. Fluorene	**67**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
35. Hexachlorobenzene	**66**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
36. Hexachlorobutadiene	**35**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
37. Hexachlorocyclopentadiene	**9.0**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
38. Hexachloroethane	**25**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
39. Indeno(1,2,3-cd)pyrene	**80**		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
‡ 40. Isophorone	**99**	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
41. 2-Methyl-4,6-dinitrophenol	**47**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
42. 2-Methylnaphthalene	**59**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
43. 2-Methylphenol	**63**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-016

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MS**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-016** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6) MS**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 44. 3&4-Methylphenol	**50**		µg/L	10	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
45. Naphthalene	**58**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
46. 2-Nitroaniline	**78**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
47. 3-Nitroaniline	**63**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
48. 4-Nitroaniline	**70**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
49. Nitrobenzene	**71**		µg/L	3.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
50. 2-Nitrophenol	**63**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
51. 4-Nitrophenol	**37**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
52. N-Nitrosodimethylamine	**46**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
53. N-Nitrosodi-n-propylamine	**72**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
54. N-Nitrosodiphenylamine	**85**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
55. Di-n-octyl Phthalate	**80**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
56. 2,2'-Oxybis(1-chloropropane)	**85**	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
57. Pentachlorophenol	**65**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
58. Phenanthrene	**73**		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
59. Phenol	**28**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
60. Pyrene	**72**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
61. Pyridine	**43**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
62. 1,2,4-Trichlorobenzene	**47**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
63. 2,4,5-Trichlorophenol	**71**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS
64. 2,4,6-Trichlorophenol	**72**		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 12:40	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-017

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MSD**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-017A** **Matrix: Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**100**		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	**660**		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	**110**		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	**210**		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	**220**		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	**190**		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	**110**		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	**110**		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	**590**		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-017A** **Matrix: Ground Water**
Method: EPA 7470A **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	**0.26**		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-017** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8082A **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	**2.1**		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
2. Aroclor-1221	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
3. Aroclor-1232	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
4. Aroclor-1242	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
5. Aroclor-1248	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
6. Aroclor-1254	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
7. Aroclor-1260	**1.8**		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
‡ 8. Aroclor-1262	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT
‡ 9. Aroclor-1268	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:14	SF22H23A	TKT

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-017B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-017

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MSD**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-017B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 2. Acrylonitrile	**47**		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
3. Benzene	**53**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
4. Bromobenzene	**45**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
5. Bromochloromethane	**44**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
6. Bromodichloromethane	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
7. Bromoform	**53**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
‡ 8. Bromoform (SIM)	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
9. Bromomethane	**48**	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
10. 2-Butanone	**44**		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
11. n-Butylbenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
12. sec-Butylbenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
13. tert-Butylbenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
14. Carbon Disulfide	**52**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
15. Carbon Tetrachloride	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
16. Chlorobenzene	**150**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
17. Chloroethane	**53**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
18. Chloroform	**47**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
19. Chloromethane	**46**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
20. 2-Chlorotoluene	**51**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
22. Dibromochloromethane	**51**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
23. Dibromomethane	**47**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
24. 1,2-Dichlorobenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
25. 1,3-Dichlorobenzene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
26. 1,4-Dichlorobenzene	**60**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
27. Dichlorodifluoromethane	**56**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
28. 1,1-Dichloroethane	**45**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
29. 1,2-Dichloroethane	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
30. 1,1-Dichloroethene	**41**	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
31. cis-1,2-Dichloroethene	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
32. trans-1,2-Dichloroethene	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
33. 1,2-Dichloropropane	**48**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
34. cis-1,3-Dichloropropene	**49**		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
35. trans-1,3-Dichloropropene	**51**		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
36. Ethylbenzene	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
37. Ethylene Dibromide	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC

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Laboratory Project Number: A10254
Laboratory Sample Number: A10254-017

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MSD**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-017B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
39. Isopropylbenzene	**54**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
40. 4-Methyl-2-pentanone	**58**		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
41. Methylene Chloride	**39**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	**58**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
43. MTBE	**51**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
44. Naphthalene	**49**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
45. n-Propylbenzene	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
46. Styrene	**49**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	**55**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	**62**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
49. Tetrachloroethene	**53**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
50. Toluene	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	**44**		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
52. 1,1,1-Trichloroethane	**55**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
‡ 53. 1,1,2-Trichloroethane	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
54. Trichloroethene	**43**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
55. Trichlorofluoromethane	**58**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
56. 1,2,3-Trichloropropane	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	**48**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	**55**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	**51**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
60. Vinyl Chloride	**52**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
61. m&p-Xylene	**110**		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
62. o-Xylene	**50**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC
‡ 63. Xylenes	**150**		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 07:14	VI22H16B	SNC

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-017** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	**71**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
2. Acenaphthylene	**69**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
3. Aniline	**67**		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
4. Anthracene	**75**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	**71**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
6. Benzo(a)anthracene	**75**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-017

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MSD**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-017** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
7. Benzo(a)pyrene	**67**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
8. Benzo(b)fluoranthene	**82**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
9. Benzo(ghi)perylene	**85**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
10. Benzo(k)fluoranthene	**76**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
11. Benzyl Alcohol	**65**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
12. Bis(2-chloroethoxy)methane	**86**	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
13. Bis(2-chloroethyl)ether	**74**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
14. Bis(2-ethylhexyl)phthalate	**83**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
15. 4-Bromophenyl Phenylether	**74**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
16. Butyl Benzyl Phthalate	**82**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
17. Di-n-butyl Phthalate	**81**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
‡ 18. Carbazole	**84**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
19. 4-Chloro-3-methylphenol	**74**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
20. 2-Chloronaphthalene	**67**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
21. 2-Chlorophenol	**63**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
22. 4-Chlorophenyl Phenylether	**73**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
23. Chrysene	**74**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
24. Dibenzo(a,h)anthracene	**78**		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
25. Dibenzofuran	**71**		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
26. 2,4-Dichlorophenol	**70**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
27. Diethyl Phthalate	**73**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
28. 2,4-Dimethylphenol	**79**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
29. Dimethyl Phthalate	**78**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
30. 2,4-Dinitrophenol	**40**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
‡ 31. 2,4-Dinitrotoluene	**76**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
‡ 32. 2,6-Dinitrotoluene	**73**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
33. Fluoranthene	**77**		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
34. Fluorene	**70**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
35. Hexachlorobenzene	**69**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
36. Hexachlorobutadiene	**40**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
37. Hexachlorocyclopentadiene	**11**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
38. Hexachloroethane	**31**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
39. Indeno(1,2,3-cd)pyrene	**81**		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
‡ 40. Isophorone	**100**	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
41. 2-Methyl-4,6-dinitrophenol	**52**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
42. 2-Methylnaphthalene	**63**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
43. 2-Methylphenol	**67**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-017

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB11-GW (1-6) MSD**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**11:30**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-017** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: SB11-GW (1-6) MSD**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 44. 3&4-Methylphenol	**55**		µg/L	10	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
45. Naphthalene	**61**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
46. 2-Nitroaniline	**84**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
47. 3-Nitroaniline	**76**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
48. 4-Nitroaniline	**80**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
49. Nitrobenzene	**73**		µg/L	3.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
50. 2-Nitrophenol	**65**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
51. 4-Nitrophenol	**42**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
52. N-Nitrosodimethylamine	**48**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
53. N-Nitrosodi-n-propylamine	**75**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
54. N-Nitrosodiphenylamine	**89**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
55. Di-n-octyl Phthalate	**85**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
56. 2,2'-Oxybis(1-chloropropane)	**85**	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
57. Pentachlorophenol	**68**		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
58. Phenanthrene	**79**		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
59. Phenol	**30**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
60. Pyrene	**77**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
61. Pyridine	**47**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
62. 1,2,4-Trichlorobenzene	**50**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
63. 2,4,5-Trichlorophenol	**77**		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS
64. 2,4,6-Trichlorophenol	**76**		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 13:18	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-018

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 (3-3.5)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**12:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-018** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB12 (3-3.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡	1. Percent Moisture (Water Content)	**20**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-018** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB12 (3-3.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Arsenic	**17000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	2. Barium	**47000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	3. Cadmium	**310**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	4. Chromium	**13000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	5. Copper	**12000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	6. Lead	**25000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	7. Selenium	**540**		µg/kg	200	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
	8. Silver	U		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
	9. Zinc	**68000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-018** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: SB12 (3-3.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Mercury	U		µg/kg	50	10	08/15/22	PM22H15C	08/16/22	M722H16A	JLH

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-018A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB12 (3-3.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	7. Bromoform	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-018

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 (3-3.5)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**12:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-018A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB12 (3-3.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
14. Carbon Tetrachloride	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
19. 2-Chlorotoluene	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
28. 1,2-Dichloroethane	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
31. trans-1,2-Dichloroethene	U	V+	µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
32. 1,2-Dichloropropane	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
33. cis-1,3-Dichloropropene	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-018

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 (3-3.5)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**12:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-018A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: SB12 (3-3.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	73	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 08:15	VP22H16B	ART

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-018** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB12 (3-3.5)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
3. Anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
9. Chrysene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
12. Fluorene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-018

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 (3-3.5)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**12:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-018** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8270E **Description: SB12 (3-3.5)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
15. Naphthalene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
16. Phenanthrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD
17. Pyrene (SIM)	U		µg/kg	330	1.0	08/17/22	PS22H17D	08/17/22 21:16	SN22H17C	SJD

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-019

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 -GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**12:45**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-019A** **Matrix: Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: SB12 -GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**28**		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	**110**		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	U		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	U		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	U		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	U		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	U		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	U		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-019A** **Matrix: Ground Water**
Method: EPA 7470A **Description: SB12 -GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-019B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB12 -GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
3. Benzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
4. Bromobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
5. Bromochloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
6. Bromodichloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
7. Bromoform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
‡ 8. Bromoform (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
9. Bromomethane	U	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
10. 2-Butanone	U		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
11. n-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
12. sec-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
13. tert-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
14. Carbon Disulfide	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
15. Carbon Tetrachloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-019

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 -GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**12:45**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-019B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB12 -GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
16. Chlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
17. Chloroethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
18. Chloroform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
19. Chloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
20. 2-Chlorotoluene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
22. Dibromochloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
23. Dibromomethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
24. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
25. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
26. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
27. Dichlorodifluoromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
28. 1,1-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
29. 1,2-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
30. 1,1-Dichloroethene	U	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
31. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
32. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
33. 1,2-Dichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
34. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
35. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
36. Ethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
37. Ethylene Dibromide	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
39. Isopropylbenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
41. Methylene Chloride	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
43. MTBE	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
44. Naphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
45. n-Propylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
46. Styrene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
49. Tetrachloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
50. Toluene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
52. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-019

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB12 -GW (1-6)**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**12:45**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-019B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: SB12 -GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 53. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
54. Trichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
55. Trichlorofluoromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
56. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
60. Vinyl Chloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
61. m&p-Xylene	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
62. o-Xylene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC
‡ 63. Xylenes	U		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 05:02	VI22H16B	SNC

Polynuclear Aromatic Hydrocarbons (PNAs) **Aliquot ID: A10254-019** **Matrix: Ground Water**
Method: EPA 3535A/EPA 8270E **Description: SB12 -GW (1-6)**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
3. Anthracene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
9. Chrysene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
11. Fluoranthene (SIM)	U		µg/L	1.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
12. Fluorene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
15. Naphthalene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
16. Phenanthrene (SIM)	U		µg/L	2.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG
17. Pyrene (SIM)	U		µg/L	5.0	1.0	08/16/22	PS22H16G	08/17/22 01:05	SJ22H16C	KDG

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-020

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Equipment Blank**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Equipment**	Collect Time:	**13:13**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-020A** **Matrix: Blank: Equipment**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	U		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	U		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	U		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	U		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	U		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	U		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	U		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-020A** **Matrix: Blank: Equipment**
Method: EPA 7470A **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-020** **Matrix: Blank: Equipment**
Method: EPA 3510C/EPA 8082A **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
2. Aroclor-1221	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
3. Aroclor-1232	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
4. Aroclor-1242	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
5. Aroclor-1248	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
6. Aroclor-1254	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
7. Aroclor-1260	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
‡ 8. Aroclor-1262	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT
‡ 9. Aroclor-1268	U		µg/L	0.20	1.0	08/19/22	PS22H19E	08/23/22 20:36	SF22H23A	TKT

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-020B** **Matrix: Blank: Equipment**
Method: EPA 5030C/EPA 8260D **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-020

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Equipment Blank**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Equipment**	Collect Time:	**13:13**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-020B** **Matrix: Blank: Equipment**
Method: EPA 5030C/EPA 8260D **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
3. Benzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
4. Bromobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
5. Bromochloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
6. Bromodichloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
7. Bromoform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
8. Bromomethane	U	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
9. 2-Butanone	U		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
10. n-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
11. sec-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
12. tert-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
13. Carbon Disulfide	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
15. Chlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
16. Chloroethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
17. Chloroform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
18. Chloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
‡ 20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
21. Dibromochloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
22. Dibromomethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
29. 1,1-Dichloroethene	U	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
35. Ethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
36. Ethylene Dibromide	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
37. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
38. Isopropylbenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-020

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Equipment Blank**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Equipment**	Collect Time:	**13:13**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-020B** **Matrix: Blank: Equipment**
Method: EPA 5030C/EPA 8260D **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
39. 4-Methyl-2-pentanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
40. Methylene Chloride	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
‡ 41. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
42. MTBE	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
43. Naphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
44. n-Propylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
45. Styrene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
46. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
47. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
48. Tetrachloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
49. Toluene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
50. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
51. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
‡ 52. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
53. Trichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
54. Trichlorofluoromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
55. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
‡ 56. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
57. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
58. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
59. Vinyl Chloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
60. m&p-Xylene	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
61. o-Xylene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC
‡ 62. Xylenes	U		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 01:58	VI22H16B	SNC

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-020** **Matrix: Blank: Equipment**
Method: EPA 3510C/EPA 8270E **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
2. Acenaphthylene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
3. Aniline	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
4. Anthracene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
6. Benzo(a)anthracene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
7. Benzo(a)pyrene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-020

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Equipment Blank**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Equipment**	Collect Time:	**13:13**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-020** **Matrix: Blank: Equipment**
Method: EPA 3510C/EPA 8270E **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
8. Benzo(b)fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
9. Benzo(ghi)perylene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
10. Benzo(k)fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
11. Benzyl Alcohol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
12. Bis(2-chloroethoxy)methane	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
13. Bis(2-chloroethyl)ether	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
15. 4-Bromophenyl Phenylether	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
16. Butyl Benzyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
17. Di-n-butyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
‡ 18. Carbazole	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
19. 4-Chloro-3-methylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
20. 2-Chloronaphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
21. 2-Chlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
22. 4-Chlorophenyl Phenylether	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
23. Chrysene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
24. Dibenzo(a,h)anthracene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
25. Dibenzofuran	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
26. 2,4-Dichlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
27. Diethyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
28. 2,4-Dimethylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
29. Dimethyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
30. 2,4-Dinitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
33. Fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
34. Fluorene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
35. Hexachlorobenzene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
36. Hexachlorobutadiene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
37. Hexachlorocyclopentadiene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
38. Hexachloroethane	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
‡ 40. Isophorone	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
41. 2-Methyl-4,6-dinitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
43. 2-Methylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
‡ 44. 3&4-Methylphenol	U		µg/L	10	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-020

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Equipment Blank**	Chain of Custody:	**204157**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Equipment**	Collect Time:	**13:13**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-020** **Matrix: Blank: Equipment**
Method: EPA 3510C/EPA 8270E **Description: Equipment Blank**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
45. Naphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
46. 2-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
47. 3-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
48. 4-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
49. Nitrobenzene	U		µg/L	3.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
50. 2-Nitrophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
51. 4-Nitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
52. N-Nitrosodimethylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
53. N-Nitrosodi-n-propylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
54. N-Nitrosodiphenylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
55. Di-n-octyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
56. 2,2'-Oxybis(1-chloropropane)	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
57. Pentachlorophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
58. Phenanthrene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
59. Phenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
60. Pyrene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
61. Pyridine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
62. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
63. 2,4,5-Trichlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS
64. 2,4,6-Trichlorophenol	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 14:35	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-021

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Soil DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**14**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Michigan 10 Elements by ICP/MS **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	**13000**		µg/kg	100	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
2. Barium	**47000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
3. Cadmium	**530**		µg/kg	50	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
4. Chromium	**11000**		µg/kg	500	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
5. Copper	**140000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA
6. Lead	**85000**		µg/kg	1000	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
7. Selenium	**320**		µg/kg	200	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
8. Silver	**280**		µg/kg	100	20	08/17/22	PT22H17F	08/17/22	T422H17A	CJA
9. Zinc	**110000**		µg/kg	1000	20	08/17/22	PT22H17F	08/18/22	T422H18A	CJA

Mercury by CVAAS **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: EPA 7471B **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	**61**		µg/kg	50	10	08/15/22	PM22H15D	08/16/22	M722H16A	JLH

Polychlorinated Biphenyls (PCBs) **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: EPA 3546/EPA 8082A **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	08/17/22	PS22H17C	08/18/22 10:57	SO22H18A	TKT

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Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-021

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Soil DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-021A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: Soil DUP**

	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
‡	2. Acrylonitrile	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	3. Benzene	**110**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	7. Bromoform	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	10. n-Butylbenzene	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	14. Carbon Tetrachloride	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	19. 2-Chlorotoluene	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
‡	20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	21. Dibromochloromethane	U	V+ L+	µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	28. 1,2-Dichloroethane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	31. trans-1,2-Dichloroethene	U	V+	µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	32. 1,2-Dichloropropane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	33. cis-1,3-Dichloropropene	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	35. Ethylbenzene	**260**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
	36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-021

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Soil DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-021A** **Matrix: Soil/Solid**
Method: EPA 5035A/EPA 8260D **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
42. MTBE	U	V+	µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
45. Styrene	**78**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
48. Tetrachloroethene	**58**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
49. Toluene	**360**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
52. 1,1,2-Trichloroethane	U		µg/kg	69	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
53. Trichloroethene	**50**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
55. 1,2,3-Trichloropropane	U		µg/kg	140	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
60. m&p-Xylene	**210**		µg/kg	100	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
61. o-Xylene	**63**		µg/kg	50	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART
‡ 62. Xylenes	**270**		µg/kg	150	1.0	08/16/22	VP22H16B	08/17/22 08:42	VP22H16B	ART

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
2. Acenaphthylene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
3. Aniline	U	L+ Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
4. Anthracene	**500**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-021

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Soil DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
6. Benzo(a)anthracene	**1300**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
7. Benzo(a)pyrene	**1200**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
8. Benzo(b)fluoranthene	**1800**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
9. Benzo(ghi)perylene	**1000**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
10. Benzo(k)fluoranthene	**600**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
11. Benzyl Alcohol	U		µg/kg	3300	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
12. Bis(2-chloroethoxy)methane	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
13. Bis(2-chloroethyl)ether	U	L+ Y1	µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
15. 4-Bromophenyl Phenylether	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
16. Butyl Benzyl Phthalate	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
17. Di-n-butyl Phthalate	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
‡ 18. Carbazole	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
19. 4-Chloro-3-methylphenol	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
20. 2-Chloronaphthalene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
21. 2-Chlorophenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
22. 4-Chlorophenyl Phenylether	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
23. Chrysene	**1400**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
24. Dibenzo(a,h)anthracene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
25. Dibenzofuran	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
26. 2,4-Dichlorophenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
27. Diethyl Phthalate	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
28. 2,4-Dimethylphenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
29. Dimethyl Phthalate	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
30. 2,4-Dinitrophenol	U	V- Y1	µg/kg	7800	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
33. Fluoranthene	**2800**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
34. Fluorene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
35. Hexachlorobenzene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
36. Hexachlorobutadiene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
37. Hexachlorocyclopentadiene	U	V- Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
38. Hexachloroethane	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
39. Indeno(1,2,3-cd)pyrene	**890**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-021

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Soil DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-021** **Matrix: Soil/Solid**
Method: EPA 3550C/EPA 8270E **Description: Soil DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 40. Isophorone	U	L+	µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
41. 2-Methyl-4,6-dinitrophenol	U	Y1	µg/kg	1900	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
42. 2-Methylnaphthalene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
43. 2-Methylphenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
‡ 44. 3&4-Methylphenol	U	L-	µg/kg	660	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
45. Naphthalene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
46. 2-Nitroaniline	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
47. 3-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
48. 4-Nitroaniline	U		µg/kg	830	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
49. Nitrobenzene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
50. 2-Nitrophenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
51. 4-Nitrophenol	U	Y1	µg/kg	7800	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
52. N-Nitrosodimethylamine	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
53. N-Nitrosodi-n-propylamine	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
54. N-Nitrosodiphenylamine	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
55. Di-n-octyl Phthalate	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
56. 2,2'-Oxybis(1-chloropropane)	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
57. Pentachlorophenol	U	L- Y1	µg/kg	7800	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
58. Phenanthrene	**2200**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
59. Phenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
60. Pyrene	**2500**		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
61. Pyridine	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
‡ 62. 1,2,4-Trichlorobenzene	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
63. 2,4,5-Trichlorophenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS
64. 2,4,6-Trichlorophenol	U		µg/kg	390	10	08/22/22	PS22H18I	08/24/22 04:00	S622H23B	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-022

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**GW DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable **Aliquot ID: A10254-022A** **Matrix: Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
2. Barium	**130**		µg/L	100	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
3. Cadmium	U		µg/L	1.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
4. Chromium	U		µg/L	10	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
5. Copper	U		µg/L	4.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
6. Lead	**4.6**		µg/L	3.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
7. Selenium	U		µg/L	5.0	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
8. Silver	U		µg/L	0.20	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA
9. Zinc	**75**		µg/L	50	10	08/17/22	PT22H17D	08/18/22	T422H18A	CJA

Mercury by CVAAS, Total **Aliquot ID: A10254-022A** **Matrix: Ground Water**
Method: EPA 7470A **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	08/18/22	PM22H18A	08/18/22	M722H18B	JLH

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-022B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
3. Benzene	**4.4**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
4. Bromobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
5. Bromochloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
6. Bromodichloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
7. Bromoform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
‡ 8. Bromoform (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
9. Bromomethane	U	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
10. 2-Butanone	U		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
11. n-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
12. sec-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
13. tert-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
14. Carbon Disulfide	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
15. Carbon Tetrachloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-022

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**GW DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-022B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
16. Chlorobenzene	**100**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
17. Chloroethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
18. Chloroform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
19. Chloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
20. 2-Chlorotoluene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
22. Dibromochloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
23. Dibromomethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
24. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
25. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
26. 1,4-Dichlorobenzene	**12**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
27. Dichlorodifluoromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
28. 1,1-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
29. 1,2-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
30. 1,1-Dichloroethene	U	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
31. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
32. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
33. 1,2-Dichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
34. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
35. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
36. Ethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
37. Ethylene Dibromide	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
39. Isopropylbenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
41. Methylene Chloride	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
43. MTBE	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
44. Naphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
45. n-Propylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
46. Styrene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
49. Tetrachloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
50. Toluene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
52. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-022

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**GW DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-022B** **Matrix: Ground Water**
Method: EPA 5030C/EPA 8260D **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
‡ 53. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
54. Trichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
55. Trichlorofluoromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
56. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	**3.6**		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
60. Vinyl Chloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
61. m&p-Xylene	**2.1**		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
62. o-Xylene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC
‡ 63. Xylenes	U		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 05:28	VI22H16B	SNC

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-022** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
1. Acenaphthene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
2. Acenaphthylene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
3. Aniline	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
4. Anthracene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
‡ 5. 1,2-Diphenylhydrazine (as Azobenzene)	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
6. Benzo(a)anthracene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
7. Benzo(a)pyrene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
8. Benzo(b)fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
9. Benzo(ghi)perylene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
10. Benzo(k)fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
11. Benzyl Alcohol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
12. Bis(2-chloroethoxy)methane	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
13. Bis(2-chloroethyl)ether	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
14. Bis(2-ethylhexyl)phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
15. 4-Bromophenyl Phenylether	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
16. Butyl Benzyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
17. Di-n-butyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
‡ 18. Carbazole	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
19. 4-Chloro-3-methylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
20. 2-Chloronaphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS

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Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-022

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**GW DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-022** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: GW DUP**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
21. 2-Chlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
22. 4-Chlorophenyl Phenylether	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
23. Chrysene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
24. Dibenzo(a,h)anthracene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
25. Dibenzofuran	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
26. 2,4-Dichlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
27. Diethyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
28. 2,4-Dimethylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
29. Dimethyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
30. 2,4-Dinitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
‡ 31. 2,4-Dinitrotoluene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
‡ 32. 2,6-Dinitrotoluene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
33. Fluoranthene	U		µg/L	1.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
34. Fluorene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
35. Hexachlorobenzene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
36. Hexachlorobutadiene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
37. Hexachlorocyclopentadiene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
38. Hexachloroethane	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
39. Indeno(1,2,3-cd)pyrene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
‡ 40. Isophorone	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
41. 2-Methyl-4,6-dinitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
43. 2-Methylphenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
‡ 44. 3&4-Methylphenol	U		µg/L	10	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
45. Naphthalene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
46. 2-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
47. 3-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
48. 4-Nitroaniline	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
49. Nitrobenzene	U		µg/L	3.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
50. 2-Nitrophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
51. 4-Nitrophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
52. N-Nitrosodimethylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
53. N-Nitrosodi-n-propylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
54. N-Nitrosodiphenylamine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
55. Di-n-octyl Phthalate	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
56. 2,2'-Oxybis(1-chloropropane)	U	L+	µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
57. Pentachlorophenol	U		µg/L	20	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-022

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**GW DUP**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Ground Water**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Base/Neutral/Acid Semivolatiles by GC/MS **Aliquot ID: A10254-022** **Matrix: Ground Water**
Method: EPA 3510C/EPA 8270E **Description: GW DUP**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
58. Phenanthrene	U		µg/L	2.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
59. Phenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
60. Pyrene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
61. Pyridine	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
62. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
63. 2,4,5-Trichlorophenol	U		µg/L	5.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS
64. 2,4,6-Trichlorophenol	U		µg/L	4.0	1.0	08/16/22	PS22H16B	08/18/22 15:14	S622H18A	ALS

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-024

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Meth Blank**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Methanol**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-024** **Matrix: Blank: Methanol**
Method: EPA 5035A/EPA 8260D **Description: Meth Blank**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Acetone	U		µg/kg	1000	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
‡	2. Acrylonitrile	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	3. Benzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	4. Bromobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	5. Bromochloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	6. Bromodichloromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	7. Bromoform	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	8. Bromomethane	U		µg/kg	200	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	9. 2-Butanone	U		µg/kg	750	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	10. n-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	11. sec-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	12. tert-Butylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	13. Carbon Disulfide	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	14. Carbon Tetrachloride	U	V+	µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	15. Chlorobenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	16. Chloroethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	17. Chloroform	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	18. Chloromethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	19. 2-Chlorotoluene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
‡	20. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	21. Dibromochloromethane	U	V+	µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	22. Dibromomethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	26. Dichlorodifluoromethane	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	27. 1,1-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	28. 1,2-Dichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	29. 1,1-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	31. trans-1,2-Dichloroethene	U	V+	µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	32. 1,2-Dichloropropane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	35. Ethylbenzene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	36. Ethylene Dibromide	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
	37. 2-Hexanone	U		µg/kg	2500	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-024

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Meth Blank**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Methanol**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035 **Aliquot ID: A10254-024** **Matrix: Blank: Methanol**
Method: EPA 5035A/EPA 8260D **Description: Meth Blank**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
38. Isopropylbenzene	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
39. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
40. Methylene Chloride	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
‡ 41. 2-Methylnaphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
42. MTBE	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
43. Naphthalene	U		µg/kg	330	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
44. n-Propylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
45. Styrene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
48. Tetrachloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
49. Toluene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
53. Trichloroethene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
54. Trichlorofluoromethane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
59. Vinyl Chloride	U		µg/kg	40	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
60. m&p-Xylene	U		µg/kg	100	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
61. o-Xylene	U		µg/kg	50	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC
‡ 62. Xylenes	U		µg/kg	150	1.0	08/16/22	VP22H16A	08/16/22 14:38	VP22H16A	BRC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-025

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**TB005533**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Trip**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-025** **Matrix: Blank: Trip**
Method: EPA 5030C/EPA 8260D **Description: TB005533**

	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
	1. Acetone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡	2. Acrylonitrile	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	3. Benzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	4. Bromobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	5. Bromochloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	6. Bromodichloromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	7. Bromoform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡	8. Bromoform (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	9. Bromomethane	U	V+	µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	10. 2-Butanone	U		µg/L	25	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	11. n-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	12. sec-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	13. tert-Butylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	14. Carbon Disulfide	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	15. Carbon Tetrachloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	16. Chlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	17. Chloroethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	18. Chloroform	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	19. Chloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	20. 2-Chlorotoluene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡	21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	22. Dibromochloromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	23. Dibromomethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	24. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	25. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	26. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	27. Dichlorodifluoromethane	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	28. 1,1-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	29. 1,2-Dichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	30. 1,1-Dichloroethene	U	L-	µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	31. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	32. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	33. 1,2-Dichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	34. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	35. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	36. Ethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
	37. Ethylene Dibromide	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC

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Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-025

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**TB005533**	Chain of Custody:	**204154**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Blank: Trip**	Collect Time:	**NA**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS **Aliquot ID: A10254-025** **Matrix: Blank: Trip**
Method: EPA 5030C/EPA 8260D **Description: TB005533**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation P. Date	Preparation P. Batch	Analysis A. Date	Analysis A. Batch	Init.
38. 2-Hexanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
39. Isopropylbenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
41. Methylene Chloride	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡ 42. 2-Methylnaphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
43. MTBE	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
44. Naphthalene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
45. n-Propylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
46. Styrene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
47. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
48. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
49. Tetrachloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
50. Toluene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
51. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
52. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡ 53. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
54. Trichloroethene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
55. Trichlorofluoromethane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
56. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡ 57. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
58. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
59. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
60. Vinyl Chloride	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
61. m&p-Xylene	U		µg/L	2.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
62. o-Xylene	U		µg/L	1.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC
‡ 63. Xylenes	U		µg/L	3.0	1.0	08/16/22	VI22H16B	08/17/22 02:24	VI22H16B	SNC

Definitions/ Qualifiers:

A: Spike recovery or precision unusable due to dilution.
B: The analyte was detected in the associated method blank.
E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
J: The concentration is an estimated value.
M: Modified Method
U: The analyte was not detected at or above the reporting limit.
X: Matrix Interference has resulted in a raised reporting limit or distorted result.
W: Results reported on a wet-weight basis.
***:** Value reported is outside QC limits

Exception Summary:

*****	:	Duplicate analysis not within control limits.
F-	:	Recovery from the spiked aliquot exceeds the lower control limit (matrix spike or matrix spike duplicate).
F+	:	Recovery from the spiked aliquot exceeds the upper control limit (matrix spike or matrix spike duplicate).
L-	:	Recovery in the associated laboratory sample (LCS) exceeds the lower control limit. Results may be biased low.
L+	:	Recovery in the associated laboratory sample (LCS) exceeds the upper control limit. Results may be biased high.
V-	:	Recovery in the associated continuing calibration verification sample (CCV) exceeds the lower control limit. Results may be biased low.
V+	:	Recovery in the associated continuing calibration verification sample (CCV) exceeds the upper control limit. Results may be biased high.
Y1	:	Sample was diluted due to a sample matrix issue.

Analysis Locations:

All analyses performed in Holt.

NELAP ACCREDITED TNI LABORATORY

Accreditation Number(s):

T104704518-22-14 (TX)

Fibertec environmental services

Matrix Spike Report
Laboratory Project Number: A10254

A10254-007: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8270E

Run Time: A10254-007 (OS): 08/22/22 11:37 [S622H22A] A10254-008 (MS): 08/26/22 00:27 [S622H25B] A10254-009 (MSD): 08/25/22 23:48 [S622H25B]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Acenaphthene	U	3050	2580	85	50 - 114		2970	2480	83		1	30	
Acenaphthylene	U	3050	2600	85	53 - 115		2970	2480	83		2	30	
Aniline	U	3050	3860	126	34 - 77	*	2970	0	0	*	200	30	*
Anthracene	U	3050	2710	89	48 - 119		2970	2570	86		3	30	
Azobenzene	U	3050	2360	77	65 - 102		2970	2160	73		6	30	
Benzo(a)anthracene	U	3050	2660	87	56 - 120		2970	2530	85		2	30	
Benzo(a)pyrene	U	3050	2310	76	57 - 122		2970	2190	74		3	30	
Benzo(b)fluoranthene	U	3050	2640	87	50 - 131		2970	2540	85		1	30	
Benzo(ghi)perylene	U	3050	2890	95	41 - 132		2970	2740	92		3	30	
Benzo(k)fluoranthene	U	3050	2860	94	39 - 137		2970	2720	91		2	30	
Benzyl Alcohol	U	3050	0	0	64 - 102	*	2970	0	0	*	0	30	
Bis(2-chloroethoxy)methane	U	3050	2480	81	62 - 98		2970	2370	80		2	30	
Bis(2-chloroethyl)ether	U	3050	2710	89	52 - 100		2970	2630	88		0	30	
Bis(2-ethylhexyl)phthalate	U	3050	2740	90	68 - 128		2970	2650	89		1	30	
4-Bromophenyl Phenylether	U	3050	2630	86	55 - 118		2970	2490	84		3	30	
Butyl Benzyl Phthalate	U	3050	0	0	70 - 127	*	2970	0	0	*	0	30	
Di-n-butyl Phthalate	U	3050	2730	89	45 - 124		2970	2600	87		2	30	
Carbazole	U	3050	2920	96	72 - 132		2970	2760	93		3	30	
4-Chloro-3-methylphenol	U	3050	0	0	57 - 120	*	2970	0	0	*	0	30	
2-Chloronaphthalene	U	3050	2480	81	53 - 106		2970	2420	81		0	30	
2-Chlorophenol	U	3050	1940	64	61 - 99		2970	1830	62		3	30	
4-Chlorophenyl Phenylether	U	3050	2640	87	50 - 119		2970	2530	85		2	30	
Chrysene	U	3050	2680	88	53 - 124		2970	2540	85		3	30	
Dibenzo(a,h)anthracene	U	3050	2710	89	53 - 126		2970	2560	86		3	30	
Dibenzofuran	U	3050	2610	86	51 - 116		2970	2490	84		2	30	
2,4-Dichlorophenol	U	3050	1960	64	56 - 113		2970	1930	65		1	30	
Diethyl Phthalate	U	3050	2740	90	46 - 128		2970	2580	87		3	30	
2,4-Dimethylphenol	U	3050	2160	71	63 - 106		2970	2130	72		1	30	
Dimethyl Phthalate	U	3050	2650	87	63 - 115		2970	2510	84		3	30	
2,4-Dinitrophenol	U	3050	0	0	10 - 96	*	2970	0	0	*	0	30	
2,4-Dinitrotoluene	U	3050	2420	79	52 - 121		2970	2260	76		4	30	
2,6-Dinitrotoluene	U	3050	2570	84	57 - 118		2970	2500	84		0	30	
Fluoranthene	U	3050	2690	88	48 - 135		2970	2560	86		2	30	

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Matrix Spike Report
Laboratory Project Number: A10254

A10254-007: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8270E

Run Time: A10254-007 (OS): 08/22/22 11:37 [S622H22A] A10254-008 (MS): 08/26/22 00:27 [S622H25B] A10254-009 (MSD): 08/25/22 23:48 [S622H25B]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Fluorene	U	3050	2620	86	49 - 126		2970	2490	84		3	30	
Hexachlorobenzene	U	3050	2540	83	54 - 118		2970	2390	80		4	30	
Hexachlorobutadiene	U	3050	2240	73	35 - 136		2970	2170	73		1	30	
Hexachlorocyclopentadiene	U	3050	0	0	43 - 101	*	2970	0	0	*	0	30	
Hexachloroethane	U	3050	1910	63	52 - 104		2970	1940	65		4	30	
Indeno(1,2,3-cd)pyrene	U	3050	2740	90	51 - 132		2970	2490	84		7	30	
Isophorone	U	3050	2840	93	64 - 102		2970	2770	93		0	30	
2-Methyl-4,6-dinitrophenol	U	3050	0	0	46 - 109	*	2970	0	0	*	0	30	
2-Methylnaphthalene	U	3050	2340	77	46 - 105		2970	2220	75		3	30	
2-Methylphenol	U	3050	2010	66	60 - 100		2970	1970	66		1	30	
3&4-Methylphenol	U	3050	1900	62	58 - 104		2970	1830	62		1	30	
Naphthalene	U	3050	2260	74	53 - 110		2970	2160	73		2	30	
2-Nitroaniline	U	3050	2250	74	66 - 112		2970	2200	74		0	30	
3-Nitroaniline	U	3050	2480	81	45 - 144		2970	2510	84		4	30	
4-Nitroaniline	U	3050	2770	91	67 - 162		2970	2620	88		3	30	
Nitrobenzene	U	3050	2030	67	61 - 99		2970	1960	66		1	30	
2-Nitrophenol	U	3050	1770	58	61 - 105	*	2970	1720	58	*	0	30	
4-Nitrophenol	U	3050	0	0	41 - 105	*	2970	0	0	*	0	30	
N-Nitrosodimethylamine	U	3050	1830	60	36 - 119		2970	1760	59		1	30	
N-Nitrosodi-n-propylamine	U	3050	2150	70	59 - 107		2970	1980	67		6	30	
N-Nitrosodiphenylamine	U	3050	3170	104	67 - 117		2970	3020	102		2	30	
Di-n-octyl Phthalate	U	3050	2590	85	65 - 120		2970	2460	83		3	30	
2,2'-Oxybis(1-chloropropane)	U	3050	2370	78	37 - 107		2970	2290	77		1	30	
Pentachlorophenol	U	3050	0	0	53 - 107	*	2970	0	0	*	0	30	
Phenanthrene	U	3050	2700	88	53 - 119		2970	2520	85		4	30	
Phenol	U	3050	2070	68	55 - 91		2970	1990	67		1	30	
Pyrene	U	3050	2710	89	55 - 127		2970	2590	87		2	30	
Pyridine	U	3050	1690	55	10 - 77		2970	1610	54		2	30	
1,2,4-Trichlorobenzene	U	3050	2190	72	55 - 110		2970	2100	71		2	30	
2,4,5-Trichlorophenol	U	3050	2410	79	52 - 119		2970	2310	78		2	30	
2,4,6-Trichlorophenol	U	3050	2210	72	53 - 114		2970	2110	71		2	30	

A10254-007: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 7471B

Run Time: A10254-007 (OS): 08/16/22 13:28 [M722H16A] A10254-008 (MS): 08/16/22 13:01 [M722H16A] A10254-009 (MSD): 08/16/22 13:02 [M722H16A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Mercury	52.7	212	266	101	70 - 130		191	258	108		7	20	

A10254-007: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 6020A

Run Time: A10254-007 (OS): 08/18/22 15:48 [T422H18A] A10254-008 (MS): 08/17/22 14:58 [T422H17A] A10254-009 (MSD): 08/17/22 14:59 [T422H17A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Arsenic	12500	10000	23800	113	70 - 130		10000	23300	108		5	20	
Barium	49100	50000	96600	95	70 - 130		50000	105000	112		16	20	
Cadmium	533	10000	10800	103	70 - 130		10000	10500	100		3	20	
Chromium	11600	20000	32800	106	70 - 130		20000	31700	100		5	20	
Lead	74700	20000	106000	156	70 - 130	*	20000	114000	196	*	23	20	*
Selenium	468	10000	10700	102	70 - 130		10000	10100	96		6	20	
Silver	155	10000	10700	105	70 - 130		10000	10400	102		3	20	
Zinc	121000	50000	172000	102	70 - 130		50000	169000	96		6	20	

A10254-007: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 6020A

Run Time: A10254-007 (OS): 08/18/22 15:48 [T422H18A] A10254-008 (MS): 08/18/22 16:37 [T422H18A] A10254-009 (MSD): 08/18/22 16:39 [T422H18A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Copper	119000	20000	383000	1321	70 - 130	*	20000	887000	3841	*	98	20	*

A10254-007: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8082A

Run Time: A10254-007 (OS): 08/18/22 10:34 [SO22H18A] A10254-008 (MS): 08/18/22 09:47 [SO22H18A] A10254-009 (MSD): 08/18/22 09:59 [SO22H18A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Aroclor-1016	U	763	497	65	60 - 120		743	534	72		10	20	
Aroclor-1260	U	763	501	66	60 - 120		743	500	67		2	20	

A10254-007A: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8260D

Run Time: A10254-007A (OS): 08/17/22 01:12 [VP22H16B] A10254-008A (MS): 08/17/22 01:39 [VP22H16B] A10254-009A (MSD): 08/17/22 02:05 [VP22H16

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Acetone	U	3340	2530	76	50 - 149		3100	2360	76		0	20	
Acrylonitrile	U	3340	3020	90	70 - 130		3100	2910	94		4	20	
Benzene	U	3340	3350	100	75 - 125		3100	3090	100		1	20	
Bromobenzene	U	3340	3500	105	70 - 120		3100	3210	103		1	20	
Bromochloromethane	U	3340	3250	97	70 - 125		3100	2900	93		4	20	
Bromodichloromethane	U	3340	3810	114	70 - 130		3100	3520	113		1	20	
Bromoform	U	3340	3260	98	70 - 130		3100	3160	102		4	20	
Bromomethane	U	3340	3250	97	66 - 134		3100	2880	93		5	20	
2-Butanone	U	3340	2810	84	67 - 131		3100	2660	86		2	20	
n-Butylbenzene	U	3340	3530	106	70 - 130		3100	3230	104		2	20	
sec-Butylbenzene	U	3340	3630	109	70 - 130		3100	3330	107		1	20	
tert-Butylbenzene	U	3340	3630	109	70 - 130		3100	3350	108		1	20	
Carbon Disulfide	U	3340	3790	113	70 - 130		3100	3590	116		2	20	
Carbon Tetrachloride	U	3340	3820	114	70 - 130		3100	3610	116		2	20	
Chlorobenzene	U	3340	3570	107	75 - 125		3100	3300	106		1	20	
Chloroethane	U	3340	3190	95	70 - 141		3100	2910	94		2	20	
Chloroform	U	3340	3340	100	80 - 120		3100	3100	100		0	20	
Chloromethane	U	3340	3240	97	63 - 130		3100	2920	94		3	20	
2-Chlorotoluene	U	3340	3690	110	70 - 130		3100	3290	106		4	20	
1,2-Dibromo-3-chloropropane (SIM)	U	3340	2960	89	70 - 130		3100	2880	93		5	20	
Dibromochloromethane	U	3340	4260	128	70 - 130		3100	3930	127		1	20	
Dibromomethane	U	3340	3720	111	70 - 130		3100	3350	108		3	20	
1,2-Dichlorobenzene	U	3340	3470	104	75 - 120		3100	3190	103		1	20	
1,3-Dichlorobenzene	U	3340	3580	107	70 - 125		3100	3300	106		1	20	
1,4-Dichlorobenzene	U	3340	3490	103	70 - 125		3100	3210	102		1	20	
Dichlorodifluoromethane	U	3340	3900	117	65 - 135		3100	3500	113		3	20	
1,1-Dichloroethane	U	3340	3130	94	75 - 125		3100	2880	93		1	20	
1,2-Dichloroethane	U	3340	3150	94	70 - 130		3100	2880	93		2	20	
1,1-Dichloroethene	U	3340	2550	76	75 - 120		3100	2310	74	*	3	20	
cis-1,2-Dichloroethene	U	3340	3020	90	70 - 125		3100	2740	88		2	20	
trans-1,2-Dichloroethene	U	3340	3900	117	70 - 130		3100	3650	118		1	20	
1,2-Dichloropropane	U	3340	3430	103	80 - 120		3100	3120	101		2	20	
cis-1,3-Dichloropropene	U	3340	3600	108	70 - 125		3100	3220	104		4	20	

A10254-007A: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8260D

Run Time: A10254-007A (OS): 08/17/22 01:12 [VP22H16B] A10254-008A (MS): 08/17/22 01:39 [VP22H16B] A10254-009A (MSD): 08/17/22 02:05 [VP22H16

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
trans-1,3-Dichloropropene	U	3340	3610	108	70 - 125		3100	3330	107		1	20	
Ethylbenzene	178	3340	3780	108	80 - 120		3100	3500	107		1	20	
Ethylene Dibromide	U	3340	3320	99	70 - 125		3100	3180	102		3	20	
2-Hexanone	U	3340	3020	90	70 - 130		3100	2970	96		6	20	
Isopropylbenzene	U	3340	3710	110	75 - 130		3100	3430	109		1	20	
4-Methyl-2-pentanone	U	3340	3540	106	70 - 130		3100	3560	115		8	20	
Methylene Chloride	U	3340	3570	107	70 - 130		3100	3200	103		4	20	
2-Methylnaphthalene	U	3340	1720	51	61 - 136	*	3100	2150	69		29	20	*
MTBE	U	3340	4270	128	70 - 130		3100	3910	126		1	20	
Naphthalene	U	3340	2560	77	70 - 125		3100	2520	81		6	20	
n-Propylbenzene	U	3340	3730	110	70 - 130		3100	3420	108		1	20	
Styrene	U	3340	3340	100	75 - 125		3100	3100	100		0	20	
1,1,1,2-Tetrachloroethane	U	3340	3810	114	75 - 125		3100	3500	113		1	20	
1,1,2,2-Tetrachloroethane	U	3340	3580	107	70 - 130		3100	3280	106		1	20	
Tetrachloroethene	223	3340	3350	94	70 - 130		3100	3130	94		0	20	
Toluene	178	3340	3650	104	80 - 120		3100	3420	104		0	20	
1,2,4-Trichlorobenzene	U	3340	2930	88	70 - 130		3100	2720	88		0	20	
1,1,1-Trichloroethane	U	3340	3860	116	70 - 130		3100	3500	113		2	20	
1,1,2-Trichloroethane	U	3340	3420	102	70 - 125		3100	3140	101		1	20	
Trichloroethene	U	3340	3370	101	75 - 125		3100	3180	102		2	20	
Trichlorofluoromethane	U	3340	4150	124	50 - 150		3100	3650	118		5	20	
1,2,3-Trichloropropane	U	3340	3430	103	70 - 130		3100	3160	102		1	20	
1,2,3-Trimethylbenzene	U	3340	3440	102	70 - 130		3100	3110	99		3	20	
1,2,4-Trimethylbenzene	U	3340	3720	108	70 - 130		3100	3380	106		3	20	
1,3,5-Trimethylbenzene	U	3340	3710	111	70 - 130		3100	3390	109		2	20	
Vinyl Chloride	U	3340	3420	102	69 - 120		3100	3030	98		5	20	
m&p-Xylene	213	6680	7270	106	80 - 125		6210	6730	105		1	20	
o-Xylene	108	3340	3520	102	75 - 125		3100	3270	102		0	20	

A10254-015: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8270E

Run Time: A10254-015 (OS): 08/18/22 13:57 [S622H18A] A10254-016 (MS): 08/18/22 12:40 [S622H18A] A10254-017 (MSD): 08/18/22 13:18 [S622H18A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Acenaphthene	U	80.0	66.3	83	60 - 107		80.0	70.6	88		6	30	
Acenaphthylene	U	80.0	64.6	81	54 - 107		80.0	68.8	86		6	30	
Aniline	U	80.0	60.4	76	19 - 117		80.0	67.2	84		11	30	
Anthracene	U	80.0	71.6	90	55 - 112		80.0	75.5	94		5	30	
Azobenzene	U	80.0	66.8	84	59 - 105		80.0	70.6	88		6	30	
Benzo(a)anthracene	U	80.0	69.8	87	59 - 116		80.0	74.7	93		7	30	
Benzo(a)pyrene	U	80.0	63.4	79	60 - 118		80.0	66.9	84		5	30	
Benzo(b)fluoranthene	U	80.0	77.0	96	58 - 118		80.0	81.6	102		6	30	
Benzo(ghi)perylene	U	80.0	80.9	101	47 - 122		80.0	84.9	106		5	30	
Benzo(k)fluoranthene	U	80.0	72.2	90	56 - 120		80.0	76.1	95		5	30	
Benzyl Alcohol	U	80.0	59.7	75	39 - 100		80.0	65.0	81		9	30	
Bis(2-chloroethoxy)methane	U	80.0	82.2	103	60 - 112		80.0	85.9	107		4	30	
Bis(2-chloroethyl)ether	U	80.0	74.1	93	53 - 110		80.0	74.5	93		1	30	
Bis(2-ethylhexyl)phthalate	U	80.0	77.2	97	57 - 126		80.0	82.7	103		7	30	
4-Bromophenyl Phenylether	U	80.0	70.6	88	65 - 109		80.0	73.6	92		4	30	
Butyl Benzyl Phthalate	U	80.0	76.0	95	60 - 120		80.0	81.8	102		7	30	
Di-n-butyl Phthalate	U	80.0	76.0	95	60 - 114		80.0	80.5	101		6	30	
Carbazole	U	80.0	79.2	99	59 - 120		80.0	83.8	105		6	30	
4-Chloro-3-methylphenol	U	80.0	68.8	86	50 - 120		80.0	73.9	92		7	30	
2-Chloronaphthalene	U	80.0	62.0	78	65 - 118		80.0	67.3	84		8	30	
2-Chlorophenol	U	80.0	60.1	73	43 - 110		80.0	63.0	77		5	30	
4-Chlorophenyl Phenylether	U	80.0	69.1	86	59 - 106		80.0	72.9	91		5	30	
Chrysene	U	80.0	69.0	86	56 - 117		80.0	73.8	92		7	30	
Dibenzo(a,h)anthracene	U	80.0	73.9	92	48 - 128		80.0	77.9	97		5	30	
Dibenzofuran	U	80.0	66.8	84	56 - 106		80.0	70.7	88		6	30	
2,4-Dichlorophenol	U	80.0	65.8	82	53 - 118		80.0	70.3	88		7	30	
Diethyl Phthalate	U	80.0	68.2	85	54 - 114		80.0	73.4	92		7	30	
2,4-Dimethylphenol	U	80.0	72.9	91	51 - 114		80.0	79.1	99		8	30	
Dimethyl Phthalate	U	80.0	72.8	91	64 - 111		80.0	77.7	97		7	30	
2,4-Dinitrophenol	U	80.0	34.4	43	43 - 132		80.0	39.8	50		15	30	
2,4-Dinitrotoluene	U	80.0	71.0	89	68 - 119		80.0	76.0	95		7	30	
2,6-Dinitrotoluene	U	80.0	67.9	85	68 - 114		80.0	73.0	91		7	30	
Fluoranthene	U	80.0	73.2	92	57 - 119		80.0	77.1	96		5	30	

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Matrix Spike Report
Laboratory Project Number: A10254

A10254-015: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8270E

Run Time: A10254-015 (OS): 08/18/22 13:57 [S622H18A] A10254-016 (MS): 08/18/22 12:40 [S622H18A] A10254-017 (MSD): 08/18/22 13:18 [S622H18A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Fluorene	U	80.0	66.5	83	70 - 112		80.0	70.2	88		5	30	
Hexachlorobenzene	U	80.0	66.4	83	60 - 113		80.0	69.4	87		4	30	
Hexachlorobutadiene	U	80.0	34.9	44	38 - 116		80.0	40.1	50		14	30	
Hexachlorocyclopentadiene	U	80.0	9.02	11	17 - 89	*	80.0	11.0	14	*	20	30	
Hexachloroethane	U	80.0	25.4	32	55 - 113	*	80.0	30.8	39	*	19	30	
Indeno(1,2,3-cd)pyrene	U	80.0	79.6	100	54 - 130		80.0	80.8	101		1	30	
Isophorone	U	80.0	98.9	124	55 - 123	*	80.0	104	130	*	5	30	
2-Methyl-4,6-dinitrophenol	U	80.0	47.0	59	53 - 116		80.0	51.6	65		9	30	
2-Methylnaphthalene	U	80.0	59.4	74	42 - 100		80.0	63.1	79		6	30	
2-Methylphenol	U	80.0	63.1	79	39 - 103		80.0	67.4	84		7	30	
3&4-Methylphenol	U	80.0	49.8	62	30 - 86		80.0	54.5	68		9	30	
Naphthalene	U	80.0	58.4	73	39 - 100		80.0	61.0	76		4	30	
2-Nitroaniline	U	80.0	77.8	97	59 - 121		80.0	83.9	105		8	30	
3-Nitroaniline	U	80.0	63.3	79	45 - 120		80.0	75.9	95		18	30	
4-Nitroaniline	U	80.0	70.4	88	46 - 126		80.0	80.2	100		13	30	
Nitrobenzene	U	80.0	71.0	89	56 - 111		80.0	72.7	91		2	30	
2-Nitrophenol	U	80.0	63.0	79	56 - 112		80.0	65.3	82		4	30	
4-Nitrophenol	U	80.0	37.2	47	21 - 59		80.0	42.0	53		12	30	
N-Nitrosodimethylamine	U	80.0	45.6	57	29 - 89		80.0	47.8	60		5	30	
N-Nitrosodi-n-propylamine	U	80.0	72.1	90	59 - 118		80.0	74.8	94		4	30	
N-Nitrosodiphenylamine	U	80.0	85.0	101	70 - 129		80.0	88.6	106		4	30	
Di-n-octyl Phthalate	U	80.0	80.5	101	60 - 124		80.0	85.0	106		5	30	
2,2'-Oxybis(1-chloropropane)	U	80.0	84.9	106	63 - 116		80.0	85.4	107		1	30	
Pentachlorophenol	U	80.0	64.6	81	46 - 115		80.0	67.8	85		5	30	
Phenanthrene	U	80.0	73.5	92	65 - 112		80.0	79.1	99		7	30	
Phenol	U	80.0	28.0	35	17 - 54		80.0	30.2	38		8	30	
Pyrene	U	80.0	72.0	90	70 - 115		80.0	77.3	97		7	30	
Pyridine	U	80.0	42.8	54	15 - 68		80.0	46.7	58		9	30	
1,2,4-Trichlorobenzene	U	80.0	46.7	58	57 - 130		80.0	50.5	63		8	30	
2,4,5-Trichlorophenol	U	80.0	70.7	88	55 - 112		80.0	77.5	97		9	30	
2,4,6-Trichlorophenol	U	80.0	71.9	90	60 - 115		80.0	76.4	96		6	30	

A10254-015: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

EPA 8082A

Run Time: A10254-015 (OS): 08/23/22 20:25 [SF22H23A] A10254-016 (MS): 08/23/22 20:03 [SF22H23A] A10254-017 (MSD): 08/23/22 20:14 [SF22H23A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Aroclor-1016	U	2.00	2.21	111	60 - 120		2.00	2.09	105		6	20	
Aroclor-1260	U	2.00	2.00	100	60 - 120		2.00	1.78	89		12	20	

A10254-015A: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 7470A

Run Time: A10254-015A (OS): 08/18/22 12:51 [M722H18B] A10254-016A (MS): 08/18/22 12:45 [M722H18B] A10254-017A (MSD): 08/18/22 12:46 [M722H18

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Mercury	U	0.250	0.257	103	70 - 130		0.250	0.260	104		1	20	

A10254-015A: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 6020A

Run Time: A10254-015A (OS): 08/18/22 12:36 [T422H18A] A10254-016A (MS): 08/18/22 12:06 [T422H18A] A10254-017A (MSD): 08/18/22 12:08 [T422H18A

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Arsenic	U	100	101	98	70 - 130		100	105	102		4	20	
Barium	132	500	636	101	70 - 130		500	658	105		4	20	
Cadmium	U	100	100	100	70 - 130		100	105	105		5	20	
Chromium	U	200	200	100	70 - 130		200	208	104		4	20	
Copper	4.47	200	204	100	70 - 130		200	219	107		7	20	
Lead	5.29	200	185	90	70 - 130		200	195	95		5	20	
Selenium	U	100	102	102	70 - 130		100	106	106		4	20	
Silver	U	100	104	104	70 - 130		100	108	108		4	20	
Zinc	76.6	500	549	94	70 - 130		500	586	102		8	20	

A10254-015B: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

EPA 8260D

Run Time: A10254-015B (OS): 08/17/22 06:21 [VI22H16B] A10254-016B (MS): 08/17/22 06:48 [VI22H16B] A10254-017B (MSD): 08/17/22 07:14 [VI22H16B]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Acetone	U	50.0	29.2	58	40 - 130		50.0	30.5	61		4	20	
Acrylonitrile	U	50.0	44.6	89	70 - 130		50.0	46.7	93		5	20	
Benzene	4.45	50.0	52.4	96	80 - 120		50.0	52.8	97		1	20	
Bromobenzene	U	50.0	44.6	89	75 - 125		50.0	45.4	91		2	20	
Bromochloromethane	U	50.0	43.7	87	70 - 130		50.0	43.9	88		0	20	
Bromodichloromethane	U	50.0	49.0	98	75 - 120		50.0	49.5	99		1	20	
Bromoform	U	50.0	50.5	101	70 - 130		50.0	52.6	105		4	20	
Bromomethane	U	50.0	38.6	77	68 - 135		50.0	48.4	97		23	20	*
2-Butanone	U	50.0	41.8	84	40 - 129		50.0	43.9	88		5	20	
n-Butylbenzene	U	50.0	49.5	99	70 - 133		50.0	51.4	103		4	20	
sec-Butylbenzene	U	50.0	49.2	98	70 - 125		50.0	51.0	102		4	20	
tert-Butylbenzene	U	50.0	50.3	101	70 - 130		50.0	51.0	102		1	20	
Carbon Disulfide	U	50.0	50.6	101	70 - 130		50.0	52.1	104		3	20	
Carbon Tetrachloride	U	50.0	51.6	103	70 - 130		50.0	52.3	105		1	20	
Chlorobenzene	99.5	50.0	148	97	80 - 120		50.0	151	103		6	20	
Chloroethane	U	50.0	52.2	104	61 - 130		50.0	52.6	105		1	20	
Chloroform	U	50.0	46.2	92	80 - 120		50.0	47.3	95		2	20	
Chloromethane	U	50.0	46.1	92	67 - 125		50.0	46.4	93		1	20	
2-Chlorotoluene	U	50.0	50.3	101	75 - 125		50.0	51.2	102		2	20	
1,2-Dibromo-3-chloropropane (SIM)	U	50.0	48.2	96	70 - 130		50.0	50.9	102		5	20	
Dibromochloromethane	U	50.0	50.0	100	70 - 130		50.0	51.2	102		2	20	
Dibromomethane	U	50.0	46.6	93	75 - 125		50.0	47.3	95		1	20	
1,2-Dichlorobenzene	U	50.0	49.4	99	70 - 120		50.0	50.8	102		3	20	
1,3-Dichlorobenzene	U	50.0	48.4	97	75 - 125		50.0	49.2	98		2	20	
1,4-Dichlorobenzene	12.6	50.0	58.5	92	75 - 125		50.0	60.0	95		3	20	
Dichlorodifluoromethane	U	50.0	54.3	109	70 - 136		50.0	55.7	111		3	20	
1,1-Dichloroethane	U	50.0	44.6	89	70 - 130		50.0	44.9	90		1	20	
1,2-Dichloroethane	U	50.0	42.6	85	70 - 130		50.0	43.3	87		2	20	
1,1-Dichloroethene	U	50.0	40.2	80	78 - 120		50.0	40.6	81		1	20	
cis-1,2-Dichloroethene	U	50.0	43.2	86	70 - 125		50.0	43.4	87		0	20	
trans-1,2-Dichloroethene	U	50.0	42.5	85	70 - 130		50.0	43.4	87		2	20	
1,2-Dichloropropane	U	50.0	47.3	95	80 - 121		50.0	47.9	96		1	20	
cis-1,3-Dichloropropene	U	50.0	48.0	96	70 - 130		50.0	49.0	98		2	20	

Fibertec environmental services

Matrix Spike Report
Laboratory Project Number: A10254

A10254-015B: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD) — EPA 8260D

Run Time: A10254-015B (OS): 08/17/22 06:21 [VI22H16B] A10254-016B (MS): 08/17/22 06:48 [VI22H16B] A10254-017B (MSD): 08/17/22 07:14 [VI22H16B]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
trans-1,3-Dichloropropene	U	50.0	49.6	99	70 - 132		50.0	51.1	102		3	20	
Ethylbenzene	U	50.0	50.6	101	80 - 120		50.0	51.8	104		2	20	
Ethylene Dibromide	U	50.0	49.4	99	80 - 120		50.0	50.4	101		2	20	
2-Hexanone	U	50.0	44.1	88	70 - 130		50.0	45.8	92		4	20	
Isopropylbenzene	U	50.0	53.5	104	75 - 125		50.0	54.4	106		2	20	
4-Methyl-2-pentanone	U	50.0	57.0	114	70 - 130		50.0	58.0	116		2	20	
Methylene Chloride	U	50.0	38.9	78	70 - 130		50.0	39.4	79		1	20	
2-Methylnaphthalene	U	50.0	52.4	105	70 - 130		50.0	58.4	117		11	20	
MTBE	U	50.0	50.7	101	70 - 125		50.0	51.4	103		1	20	
Naphthalene	U	50.0	47.8	96	70 - 130		50.0	49.0	98		2	20	
n-Propylbenzene	U	50.0	51.5	103	70 - 130		50.0	52.3	105		2	20	
Styrene	U	50.0	48.0	96	70 - 130		50.0	48.6	97		1	20	
1,1,1,2-Tetrachloroethane	U	50.0	53.7	107	80 - 130		50.0	54.7	109		2	20	
1,1,2,2-Tetrachloroethane	U	50.0	59.7	119	70 - 130		50.0	61.9	124		4	20	
Tetrachloroethene	U	50.0	52.2	104	70 - 130		50.0	53.1	106		2	20	
Toluene	U	50.0	48.7	97	80 - 120		50.0	49.8	100		2	20	
1,2,4-Trichlorobenzene	U	50.0	45.5	91	70 - 130		50.0	44.1	88		3	20	
1,1,1-Trichloroethane	U	50.0	53.7	107	70 - 130		50.0	54.6	109		2	20	
1,1,2-Trichloroethane	U	50.0	49.4	99	75 - 125		50.0	50.1	100		1	20	
Trichloroethene	U	50.0	42.9	86	71 - 125		50.0	43.3	87		1	20	
Trichlorofluoromethane	U	50.0	60.5	121	70 - 133		50.0	58.0	116		4	20	
1,2,3-Trichloropropane	U	50.0	49.9	100	75 - 125		50.0	50.4	101		1	20	
1,2,3-Trimethylbenzene	U	50.0	47.6	94	70 - 130		50.0	48.4	95		2	20	
1,2,4-Trimethylbenzene	3.68	50.0	53.9	100	75 - 130		50.0	54.9	102		2	20	
1,3,5-Trimethylbenzene	U	50.0	49.5	99	75 - 130		50.0	50.5	101		2	20	
Vinyl Chloride	U	50.0	50.8	102	74 - 125		50.0	52.0	104		2	20	
m&p-Xylene	U	100	104	102	75 - 130		100	105	103		1	20	
o-Xylene	U	50.0	49.3	99	80 - 120		50.0	49.7	99		1	20	

A10254-021: Original Sample (OS)/Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

EPA 7471B

Run Time: A10254-021 (OS): 08/16/22 12:30 [M722H16A] A10254-021 (MS): 08/16/22 12:27 [M722H16A] A10254-021 (MSD): 08/16/22 12:28 [M722H16A]

Analyte	Original Result	MS Spike Amount	MS Result	MS Rec.	Rec. Limits	MS Qualifier	MSD Spike Amount	MSD Result	MSD Rec.	MSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/kg (dry wt)	µg/kg (dry wt)	µg/kg (dry wt)	%	%		µg/kg (dry wt)	µg/kg (dry wt)	%		%	%	
Mercury	60.9	195	239	91	70 - 130		201	268	103		12	20	
Mercury	60.9	195	239	91	70 - 130		201	268	103		12	20	

Definitions/ Qualifiers:

U: The analyte was not detected at or above the Reporting Limit (RL).
***:** Value reported is outside QC limits

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:

By Anthony Donnelly at 1:15 PM, Sep 12, 2022

PM22H15C: Method Blank (MB)

EPA 7471B

Run Time: PM22H15C.MB 08/16/2022 12:58 [M722H16A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Mercury	U		50

PM22H15C: Laboratory Control Sample (LCS)

EPA 7471B

Run Time: PM22H15C.LCS: 08/16/2022 12:59 [M722H16A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	200	202	101	85-115	

PM22H15D: Method Blank (MB) — EPA 7471B

Run Time: PM22H15D.MB 08/16/2022 12:24 [M722H16A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Mercury	U		50

PM22H15D: Laboratory Control Sample (LCS) — EPA 7471B

Run Time: PM22H15D.LCS: 08/16/2022 12:25 [M722H16A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	200	205	103	85-115	

PM22H18A: Method Blank (MB)

EPA 7470A

Run Time: PM22H18A.MB 08/18/2022 12:42 [M722H18B]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/L		µg/L
Mercury	U		0.20

PM22H18A: Laboratory Control Sample (LCS)

EPA 7470A

Run Time: PM22H18A.LCS: 08/18/2022 12:43 [M722H18B]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/L	µg/L	%	%	
Mercury	0.250	0.263	105	85-115	

PS22H16B: Method Blank (MB)

EPA 8270E

Run Time: PS22H16B.MB 08/18/2022 10:06 [S622H18A]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Acenaphthene	U		5.0
Acenaphthylene	U		5.0
Aniline	U		4.0
Anthracene	U		5.0
Azobenzene	U		5.0
Benzo(a)anthracene	U		1.0
Benzo(a)pyrene	U		1.0
Benzo(b)fluoranthene	U		1.0
Benzo(ghi)perylene	U		1.0
Benzo(k)fluoranthene	U		1.0
Benzyl Alcohol	U		5.0
Bis(2-chloroethoxy)methane	U		5.0
Bis(2-chloroethyl)ether	U		1.0
Bis(2-ethylhexyl)phthalate	U		5.0
4-Bromophenyl Phenylether	U		5.0
Butyl Benzyl Phthalate	U		5.0
Di-n-butyl Phthalate	U		5.0
Carbazole	U		5.0
4-Chloro-3-methylphenol	U		5.0
2-Chloronaphthalene	U		5.0
2-Chlorophenol	U		5.0
4-Chlorophenyl Phenylether	U		5.0
Chrysene	U		1.0
Dibenzo(a,h)anthracene	U		2.0
Dibenzofuran	U		4.0
2,4-Dichlorophenol	U		5.0
Diethyl Phthalate	U		5.0
2,4-Dimethylphenol	U		5.0
Dimethyl Phthalate	U		5.0
2,4-Dinitrophenol	U		20
2,4-Dinitrotoluene	U		5.0
2,6-Dinitrotoluene	U		5.0
Fluoranthene	U		1.0

PS22H16B: Method Blank (MB)

EPA 8270E

Run Time: PS22H16B.MB 08/18/2022 10:06 [S622H18A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/L		µg/L
Fluorene	U		5.0
Hexachlorobenzene	U		5.0
Hexachlorobutadiene	U		5.0
Hexachlorocyclopentadiene	U		5.0
Hexachloroethane	U		1.0
Indeno(1,2,3-cd)pyrene	U		2.0
Isophorone	U		5.0
2-Methyl-4,6-dinitrophenol	U		20
2-Methylnaphthalene	U		5.0
2-Methylphenol	U		5.0
3&4-Methylphenol	U		10
Naphthalene	U		5.0
2-Nitroaniline	U		20
3-Nitroaniline	U		20
4-Nitroaniline	U		20
Nitrobenzene	U		3.0
2-Nitrophenol	U		5.0
4-Nitrophenol	U		20
N-Nitrosodimethylamine	U		5.0
N-Nitrosodi-n-propylamine	U		5.0
N-Nitrosodiphenylamine	U		5.0
Di-n-octyl Phthalate	U		5.0
2,2'-Oxybis(1-chloropropane)	U		5.0
Pentachlorophenol	U		20
Phenanthrene	U		2.0
Phenol	U		5.0
Pyrene	U		5.0
Pyridine	U		5.0
1,2,4-Trichlorobenzene	U		5.0
2,4,5-Trichlorophenol	U		5.0
2,4,6-Trichlorophenol	U		4.0
2-Fluorobiphenyl(S)	*85*		*44-109*
1-Fluoronaphthalene(S)	*74*		*44-103*

PS22H16B: Method Blank (MB)

EPA 8270E

Run Time: PS22H16B.MB 08/18/2022 10:06 [S622H18A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/L		µg/L
2-Fluorophenol(S)	*62*		*22-85*
Phenol-d6(S)	*40*		*11-60*
4-Terphenyl-d14(S)	*95*		*44-124*
2,4,6-Tribromophenol(S)	*98*		*38-138*

PS22H16B: Laboratory Control Sample (LCS)

EPA 8270E

Run Time: PS22H16B.LCS: 08/18/2022 10:44 [S622H18A]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/L	µg/L	%	%	
Acenaphthene	80.0	73.7	92	60-107	
Acenaphthylene	80.0	71.4	89	54-107	
Aniline	80.0	76.3	95	19-117	
Anthracene	80.0	78.1	98	55-112	
Azobenzene	80.0	76.6	96	59-105	
Benzo(a)anthracene	80.0	78.0	97	59-116	
Benzo(a)pyrene	80.0	68.7	86	60-118	
Benzo(b)fluoranthene	80.0	86.1	108	58-118	
Benzo(ghi)perylene	80.0	84.1	105	47-122	
Benzo(k)fluoranthene	80.0	79.6	99	56-120	
Benzyl Alcohol	80.0	65.0	81	39-100	
Bis(2-chloroethoxy)methane	80.0	90.9	114	60-112	*
Bis(2-chloroethyl)ether	80.0	83.6	105	53-110	
Bis(2-ethylhexyl)phthalate	80.0	83.0	104	57-126	
4-Bromophenyl Phenylether	80.0	74.8	93	65-109	
Butyl Benzyl Phthalate	80.0	84.4	106	60-120	
Di-n-butyl Phthalate	80.0	83.7	105	60-114	
Carbazole	80.0	76.9	96	59-120	
4-Chloro-3-methylphenol	80.0	71.9	90	50-120	
2-Chloronaphthalene	80.0	70.4	88	65-118	
2-Chlorophenol	80.0	66.6	83	43-110	
4-Chlorophenyl Phenylether	80.0	75.7	95	59-106	
Chrysene	80.0	75.3	94	56-117	
Dibenzo(a,h)anthracene	80.0	78.4	98	48-128	
Dibenzofuran	80.0	73.1	91	56-106	
2,4-Dichlorophenol	80.0	70.7	88	53-118	
Diethyl Phthalate	80.0	79.7	100	54-114	
2,4-Dimethylphenol	80.0	72.0	90	51-114	
Dimethyl Phthalate	80.0	78.8	98	64-111	
2,4-Dinitrophenol	80.0	48.1	60	43-132	
2,4-Dinitrotoluene	80.0	81.4	102	68-119	
2,6-Dinitrotoluene	80.0	80.9	101	68-114	
Fluoranthene	80.0	80.0	100	57-119	

PS22H16B: Laboratory Control Sample (LCS) — EPA 8270E

Run Time: PS22H16B.LCS: 08/18/2022 10:44 [S622H18A]

Analyte	LCS Spike Amount µg/L	LCS Result µg/L	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	80.0	72.6	91	70-112	
Hexachlorobenzene	80.0	70.1	88	60-113	
Hexachlorobutadiene	80.0	45.7	57	38-116	
Hexachlorocyclopentadiene	80.0	33.2	42	17-89	
Hexachloroethane	80.0	46.4	58	55-113	
Indeno(1,2,3-cd)pyrene	80.0	84.5	106	54-130	
Isophorone	80.0	107	134	55-123	*
2-Methyl-4,6-dinitrophenol	80.0	74.1	93	53-116	
2-Methylnaphthalene	80.0	67.3	84	42-100	
2-Methylphenol	80.0	69.5	87	39-103	
3&4-Methylphenol	80.0	55.9	70	30-86	
Naphthalene	80.0	65.2	81	39-100	
2-Nitroaniline	80.0	83.5	104	59-121	
3-Nitroaniline	80.0	79.6	99	45-120	
4-Nitroaniline	80.0	77.0	96	46-126	
Nitrobenzene	80.0	78.4	98	56-111	
2-Nitrophenol	80.0	68.7	86	56-112	
4-Nitrophenol	80.0	40.3	50	21-59	
N-Nitrosodimethylamine	80.0	57.2	71	29-89	
N-Nitrosodi-n-propylamine	80.0	82.2	103	59-118	
N-Nitrosodiphenylamine	80.0	85.2	107	70-129	
Di-n-octyl Phthalate	80.0	90.0	113	60-124	
2,2'-Oxybis(1-chloropropane)	80.0	95.2	119	63-116	*
Pentachlorophenol	80.0	50.9	64	46-115	
Phenanthrene	80.0	77.0	96	65-112	
Phenol	80.0	32.0	40	17-54	
Pyrene	80.0	80.2	100	70-115	
Pyridine	80.0	45.8	57	15-68	
1,2,4-Trichlorobenzene	80.0	55.1	69	57-130	
2,4,5-Trichlorophenol	80.0	77.0	96	55-112	
2,4,6-Trichlorophenol	80.0	74.2	93	60-115	
2-Fluorobiphenyl(S)			*83*	*44-109*	
1-Fluoronaphthalene(S)			*74*	*44-103*	

PS22H16B: Laboratory Control Sample (LCS)

EPA 8270E

Run Time: PS22H16B.LCS: 08/18/2022 10:44 [S622H18A]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/L	µg/L	%	%	
2-Fluorophenol(S)			*64*	*22-85*	
Phenol-d6(S)			*42*	*11-60*	
4-Terphenyl-d14(S)			*96*	*44-124*	
2,4,6-Tribromophenol(S)			*95*	*38-138*	

PS22H16G: Method Blank (MB)

EPA 8270E

Run Time: PS22H16G.MB 08/16/2022 18:46 [SJ22H16C]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/L		µg/L
Acenaphthene (SIM)	U		5.0
Acenaphthylene (SIM)	U		5.0
Anthracene (SIM)	U		5.0
Benzo(a)anthracene (SIM)	U		1.0
Benzo(a)pyrene (SIM)	U		1.0
Benzo(b)fluoranthene (SIM)	U		1.0
Benzo(ghi)perylene (SIM)	U		1.0
Benzo(k)fluoranthene (SIM)	U		1.0
Chrysene (SIM)	U		1.0
Dibenzo(a,h)anthracene (SIM)	U		2.0
Fluoranthene (SIM)	U		1.0
Fluorene (SIM)	U		5.0
Indeno(1,2,3-cd)pyrene (SIM)	U		2.0
2-Methylnaphthalene (SIM)	U		5.0
Naphthalene (SIM)	U		5.0
Phenanthrene (SIM)	U		2.0
Pyrene (SIM)	U		5.0
2-Fluorobiphenyl(S)	*56*		*44-109*
1-Fluoronaphthalene(S)	*60*		*44-103*
4-Terphenyl-d14(S)	*70*		*44-124*

PS22H16G: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) — EPA 8270E

Run Time: PS22H16G.LCS: 08/18/2022 20:28 [SN22H18C] PS22H16G.LCSD: 08/18/2022 20:54 [SN22H18C]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	LCSD Spike Amount	LCSD Result	LCSD Rec.	LCSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Acenaphthene (SIM)	80.0	54.5	68	60-107		80.0	51.6	65		5	30	
Acenaphthylene (SIM)	80.0	61.9	77	54-107		80.0	58.0	73		5	30	
Anthracene (SIM)	80.0	69.6	87	55-112		80.0	68.4	86		1	30	
Benzo(a)anthracene (SIM)	80.0	74.4	93	56-112		80.0	72.0	90		3	30	
Benzo(a)pyrene (SIM)	80.0	75.5	94	59-113		80.0	75.1	94		0	30	
Benzo(b)fluoranthene (SIM)	80.0	74.7	93	59-113		80.0	74.6	93		0	30	
Benzo(ghi)perylene (SIM)	80.0	79.3	99	46-124		80.0	65.5	82		19	30	
Benzo(k)fluoranthene (SIM)	80.0	77.5	97	59-111		80.0	77.1	96		1	30	
Chrysene (SIM)	80.0	77.0	96	53-112		80.0	74.3	93		3	30	
Dibenzo(a,h)anthracene (SIM)	80.0	77.6	97	48-131		80.0	63.2	79		20	30	
Fluoranthene (SIM)	80.0	60.6	76	69-112		80.0	73.5	92		19	30	
Fluorene (SIM)	80.0	62.5	78	70-112		80.0	59.6	75		4	30	
Indeno(1,2,3-cd)pyrene (SIM)	80.0	74.7	93	54-128		80.0	61.4	77		19	30	
2-Methylnaphthalene (SIM)	80.0	55.4	69	31-113		80.0	46.3	58		17	30	
Naphthalene (SIM)	80.0	55.3	69	37-107		80.0	48.3	60		14	30	
Phenanthrene (SIM)	80.0	69.1	86	65-112		80.0	66.5	83		4	30	
Pyrene (SIM)	80.0	73.6	92	70-115		80.0	72.8	91		1	30	
2-Fluorobiphenyl(S)			*71*	*44-109*				*73*				
1-Fluoronaphthalene(S)			*81*	*44-103*				*79*				
4-Terphenyl-d14(S)			*93*	*44-124*				*91*				

PS22H17C: Method Blank (MB) — EPA 8082A

Run Time: PS22H17C.MB 08/18/2022 09:24 [SO22H18A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Aroclor-1016	U		100
Aroclor-1260	U		100
Decachlorobiphenyl-PCB(S)	*64*		*40-143*
2,4,5,6-Tetrachloro-m-xylene-PCB(S)	*68*		*42-133*

PS22H17C: Laboratory Control Sample (LCS) — EPA 8082A

Run Time: PS22H17C.LCS: 08/18/2022 14:43 [SO22H18A]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/kg	µg/kg	%	%	
Aroclor-1016	667	456	68	60-120	
Aroclor-1260	667	443	66	60-120	
Decachlorobiphenyl-PCB(S)			*57*	*40-143*	
2,4,5,6-Tetrachloro-m-xylene-PCB(S)			*70*	*42-133*	

PS22H17D: Method Blank (MB) — EPA 8270E

Run Time: PS22H17D.MB 08/17/2022 17:44 [SN22H17C]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Acenaphthene (SIM)	U		330
Acenaphthylene (SIM)	U		330
Anthracene (SIM)	U		330
Benzo(a)anthracene (SIM)	U		330
Benzo(a)pyrene (SIM)	U		330
Benzo(b)fluoranthene (SIM)	U		330
Benzo(ghi)perylene (SIM)	U		330
Benzo(k)fluoranthene (SIM)	U		330
Chrysene (SIM)	U		330
Dibenzo(a,h)anthracene (SIM)	U		330
Fluoranthene (SIM)	U		330
Fluorene (SIM)	U		330
Indeno(1,2,3-cd)pyrene (SIM)	U		330
2-Methylnaphthalene (SIM)	U		330
Naphthalene (SIM)	U		330
Phenanthrene (SIM)	U		330
Pyrene (SIM)	U		330
2-Fluorobiphenyl(S)	*72*		*49-115*
1-Fluoronaphthalene(S)	*73*		*46-114*
4-Terphenyl-d14(S)	*78*		*48-117*

PS22H17D: Laboratory Control Sample (LCS)

EPA 8270E

Run Time: PS22H17D.LCS: 08/17/2022 18:10 [SN22H17C]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/kg	µg/kg	%	%	
Acenaphthene (SIM)	5330	3590	67	35-93	
Acenaphthylene (SIM)	5330	3860	72	33-100	
Anthracene (SIM)	5330	4050	76	43-91	
Benzo(a)anthracene (SIM)	5330	3980	75	47-102	
Benzo(a)pyrene (SIM)	5330	4370	82	45-117	
Benzo(b)fluoranthene (SIM)	5330	4350	82	48-121	
Benzo(ghi)perylene (SIM)	5330	3850	72	48-111	
Benzo(k)fluoranthene (SIM)	5330	4260	80	52-117	
Chrysene (SIM)	5330	4100	77	51-108	
Dibenzo(a,h)anthracene (SIM)	5330	4130	77	51-113	
Fluoranthene (SIM)	5330	3980	75	50-101	
Fluorene (SIM)	5330	3730	70	40-97	
Indeno(1,2,3-cd)pyrene (SIM)	5330	3980	75	54-122	
2-Methylnaphthalene (SIM)	5330	3580	67	30-95	
Naphthalene (SIM)	5330	3640	68	27-87	
Phenanthrene (SIM)	5330	3770	71	41-92	
Pyrene (SIM)	5330	3730	70	46-109	
2-Fluorobiphenyl(S)			*69*	*49-115*	
1-Fluoronaphthalene(S)			*74*	*46-114*	
4-Terphenyl-d14(S)			*79*	*48-117*	

PS22H18I: Method Blank (MB) — EPA 8270E

Run Time: PS22H18I.MB 08/22/2022 09:41 [S622H22A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acenaphthene	U		330
Acenaphthylene	U		330
Aniline	U		330
Anthracene	U		330
Azobenzene	U		330
Benzo(a)anthracene	U		330
Benzo(a)pyrene	U		330
Benzo(b)fluoranthene	U		330
Benzo(ghi)perylene	U		330
Benzo(k)fluoranthene	U		330
Benzyl Alcohol	U		3300
Bis(2-chloroethoxy)methane	U		330
Bis(2-chloroethyl)ether	U		100
Bis(2-ethylhexyl)phthalate	U		330
4-Bromophenyl Phenylether	U		330
Butyl Benzyl Phthalate	U		330
Di-n-butyl Phthalate	U		330
Carbazole	U		330
4-Chloro-3-methylphenol	U		280
2-Chloronaphthalene	U		330
2-Chlorophenol	U		330
4-Chlorophenyl Phenylether	U		330
Chrysene	U		330
Dibenzo(a,h)anthracene	U		330
Dibenzofuran	U		330
2,4-Dichlorophenol	U		330
Diethyl Phthalate	U		330
2,4-Dimethylphenol	U		330
Dimethyl Phthalate	U		330
2,4-Dinitrophenol	U		830
2,4-Dinitrotoluene	U		330
2,6-Dinitrotoluene	U		330
Fluoranthene	U		330

PS22H18I: Method Blank (MB)

EPA 8270E

Run Time: PS22H18I.MB 08/22/2022 09:41 [S622H22A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Fluorene	U		330
Hexachlorobenzene	U		330
Hexachlorobutadiene	U		330
Hexachlorocyclopentadiene	U		330
Hexachloroethane	U		330
Indeno(1,2,3-cd)pyrene	U		330
Isophorone	U		330
2-Methyl-4,6-dinitrophenol	U		830
2-Methylnaphthalene	U		330
2-Methylphenol	U		330
3&4-Methylphenol	U		660
Naphthalene	U		330
2-Nitroaniline	U		330
3-Nitroaniline	U		830
4-Nitroaniline	U		830
Nitrobenzene	U		330
2-Nitrophenol	U		330
4-Nitrophenol	U		830
N-Nitrosodimethylamine	U		330
N-Nitrosodi-n-propylamine	U		330
N-Nitrosodiphenylamine	U		330
Di-n-octyl Phthalate	U		330
2,2'-Oxybis(1-chloropropane)	U		330
Pentachlorophenol	U		800
Phenanthrene	U		330
Phenol	U		330
Pyrene	U		330
Pyridine	U		330
1,2,4-Trichlorobenzene	U		330
2,4,5-Trichlorophenol	U		330
2,4,6-Trichlorophenol	U		330
2-Fluorobiphenyl(S)	*79*		*49-115*
1-Fluoronaphthalene(S)	*72*		*46-114*

PS22H18I: Method Blank (MB) — EPA 8270E

Run Time: PS22H18I.MB 08/22/2022 09:41 [S622H22A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
2-Fluorophenol(S)	*78*		*31-112*
Phenol-d6(S)	*79*		*32-113*
4-Terphenyl-d14(S)	*76*		*48-117*
2,4,6-Tribromophenol(S)	*89*		*25-118*

PS22H18I: Laboratory Control Sample (LCS) — EPA 8270E

Run Time: PS22H18I.LCS: 08/22/2022 10:20 [S622H22A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	2670	2320	87	50-114	
Acenaphthylene	2670	2290	86	53-115	
Aniline	2670	4460	167	34-77	*
Anthracene	2670	2380	89	48-119	
Azobenzene	2670	2050	77	65-102	
Benzo(a)anthracene	2670	2350	88	56-120	
Benzo(a)pyrene	2670	2100	79	57-122	
Benzo(b)fluoranthene	2670	2590	97	50-131	
Benzo(ghi)perylene	2670	2500	94	41-132	
Benzo(k)fluoranthene	2670	2400	90	39-137	
Benzyl Alcohol	2670	2530	95	64-102	
Bis(2-chloroethoxy)methane	2670	1960	74	62-98	
Bis(2-chloroethyl)ether	2670	2950	111	52-100	*
Bis(2-ethylhexyl)phthalate	2670	2450	92	68-128	
4-Bromophenyl Phenylether	2670	2390	90	55-118	
Butyl Benzyl Phthalate	2670	2430	91	70-127	
Di-n-butyl Phthalate	2670	2450	92	45-124	
Carbazole	2670	2380	89	72-132	
4-Chloro-3-methylphenol	2670	1980	74	57-120	
2-Chloronaphthalene	2670	2290	86	53-106	
2-Chlorophenol	2670	2070	78	61-99	
4-Chlorophenyl Phenylether	2670	2390	90	50-119	
Chrysene	2670	2230	84	53-124	
Dibenzo(a,h)anthracene	2670	2320	87	53-126	
Dibenzofuran	2670	2310	87	51-116	
2,4-Dichlorophenol	2670	1820	68	56-113	
Diethyl Phthalate	2670	2190	82	46-128	
2,4-Dimethylphenol	2670	1760	66	63-106	
Dimethyl Phthalate	2670	2120	80	63-115	
2,4-Dinitrophenol	2670	963	36	10-96	
2,4-Dinitrotoluene	2670	2430	91	52-121	
2,6-Dinitrotoluene	2670	2180	82	57-118	
Fluoranthene	2670	2390	90	48-135	

PS22H18I: Laboratory Control Sample (LCS) — EPA 8270E

Run Time: PS22H18I.LCS: 08/22/2022 10:20 [S622H22A]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/kg	µg/kg	%	%	
Fluorene	2670	2270	85	49-126	
Hexachlorobenzene	2670	2220	83	54-118	
Hexachlorobutadiene	2670	2070	78	35-136	
Hexachlorocyclopentadiene	2670	1560	59	43-101	
Hexachloroethane	2670	1920	72	52-104	
Indeno(1,2,3-cd)pyrene	2670	2530	95	51-132	
Isophorone	2670	3030	114	64-102	*
2-Methyl-4,6-dinitrophenol	2670	1890	71	46-109	
2-Methylnaphthalene	2670	2230	84	46-105	
2-Methylphenol	2670	1750	66	60-100	
3&4-Methylphenol	2670	1450	54	58-104	*
Naphthalene	2670	2150	81	53-110	
2-Nitroaniline	2670	2300	86	66-112	
3-Nitroaniline	2670	2270	85	45-144	
4-Nitroaniline	2670	2090	78	67-162	
Nitrobenzene	2670	2160	81	61-99	
2-Nitrophenol	2670	2020	76	61-105	
4-Nitrophenol	2670	1820	68	41-105	
N-Nitrosodimethylamine	2670	2220	83	36-119	
N-Nitrosodi-n-propylamine	2670	1710	64	59-107	
N-Nitrosodiphenylamine	2670	2520	95	67-117	
Di-n-octyl Phthalate	2670	2580	97	65-120	
2,2'-Oxybis(1-chloropropane)	2670	2510	94	37-107	
Pentachlorophenol	2670	1240	47	53-107	*
Phenanthrene	2670	2360	89	53-119	
Phenol	2670	1620	61	55-91	
Pyrene	2670	2380	89	55-127	
Pyridine	2670	1750	66	10-77	
1,2,4-Trichlorobenzene	2670	2090	78	55-110	
2,4,5-Trichlorophenol	2670	2250	85	52-119	
2,4,6-Trichlorophenol	2670	2020	76	53-114	
2-Fluorobiphenyl(S)			*86*	*49-115*	
1-Fluoronaphthalene(S)			*79*	*46-114*	

PS22H18I: Laboratory Control Sample (LCS)

EPA 8270E

Run Time: PS22H18I.LCS: 08/22/2022 10:20 [S622H22A]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/kg	µg/kg	%	%	
2-Fluorophenol(S)			*80*	*31-112*	
Phenol-d6(S)			*60*	*32-113*	
4-Terphenyl-d14(S)			*85*	*48-117*	
2,4,6-Tribromophenol(S)			*86*	*25-118*	

PS22H19E: Method Blank (MB) — EPA 8082A

Run Time: PS22H19E.MB 08/23/2022 19:40 [SF22H23A]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Aroclor-1016	U		0.20
Aroclor-1260	U		0.20
Decachlorobiphenyl-PCB(S)	*97*		*14-124*
2,4,5,6-Tetrachloro-m-xylene-PCB(S)	*53*		*26-136*

PS22H19E: Laboratory Control Sample (LCS) — EPA 8082A

Run Time: PS22H19E.LCS: 08/23/2022 19:52 [SF22H23A]

Analyte	LCS Spike Amount µg/L	LCS Result µg/L	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aroclor-1016	2.00	1.61	81	60-120	
Aroclor-1260	2.00	1.77	89	60-120	
Decachlorobiphenyl-PCB(S)			*97*	*14-124*	
2,4,5,6-Tetrachloro-m-xylene-PCB(S)			*53*	*26-136*	

PS22H25I: Method Blank (MB) — EPA 8270E

Run Time: PS22H25I.MB 08/26/2022 09:10 [S622H26A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acenaphthene	U		330
Acenaphthylene	U		330
Aniline	U		330
Anthracene	U		330
Azobenzene	U		330
Benzo(a)anthracene	U		330
Benzo(a)pyrene	U		330
Benzo(b)fluoranthene	U		330
Benzo(ghi)perylene	U		330
Benzo(k)fluoranthene	U		330
Benzyl Alcohol	U		3300
Bis(2-chloroethoxy)methane	U		330
Bis(2-chloroethyl)ether	U		100
Bis(2-ethylhexyl)phthalate	U		330
4-Bromophenyl Phenylether	U		330
Butyl Benzyl Phthalate	U		330
Di-n-butyl Phthalate	U		330
Carbazole	U		330
4-Chloro-3-methylphenol	U		280
2-Chloronaphthalene	U		330
2-Chlorophenol	U		330
4-Chlorophenyl Phenylether	U		330
Chrysene	U		330
Dibenzo(a,h)anthracene	U		330
Dibenzofuran	U		330
2,4-Dichlorophenol	U		330
Diethyl Phthalate	U		330
2,4-Dimethylphenol	U		330
Dimethyl Phthalate	U		330
2,4-Dinitrophenol	U		830
2,4-Dinitrotoluene	U		330
2,6-Dinitrotoluene	U		330
Fluoranthene	U		330

PS22H25I: Method Blank (MB) — EPA 8270E

Run Time: PS22H25I.MB 08/26/2022 09:10 [S622H26A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Fluorene	U		330
Hexachlorobenzene	U		330
Hexachlorobutadiene	U		330
Hexachlorocyclopentadiene	U		330
Hexachloroethane	U		330
Indeno(1,2,3-cd)pyrene	U		330
Isophorone	U		330
2-Methyl-4,6-dinitrophenol	U		830
2-Methylnaphthalene	U		330
2-Methylphenol	U		330
3&4-Methylphenol	U		660
Naphthalene	U		330
2-Nitroaniline	U		330
3-Nitroaniline	U		830
4-Nitroaniline	U		830
Nitrobenzene	U		330
2-Nitrophenol	U		330
4-Nitrophenol	U		830
N-Nitrosodimethylamine	U		330
N-Nitrosodi-n-propylamine	U		330
N-Nitrosodiphenylamine	U		330
Di-n-octyl Phthalate	U		330
2,2'-Oxybis(1-chloropropane)	U		330
Pentachlorophenol	U		800
Phenanthrene	U		330
Phenol	U		330
Pyrene	U		330
Pyridine	U		330
1,2,4-Trichlorobenzene	U		330
2,4,5-Trichlorophenol	U		330
2,4,6-Trichlorophenol	U		330
2-Fluorobiphenyl(S)	*75*		*49-115*
1-Fluoronaphthalene(S)	*69*		*46-114*

PS22H25I: Method Blank (MB)

EPA 8270E

Run Time: PS22H25I.MB 08/26/2022 09:10 [S622H26A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
2-Fluorophenol(S)	*74*		*31-112*
Phenol-d6(S)	*56*		*32-113*
4-Terphenyl-d14(S)	*89*		*48-117*
2,4,6-Tribromophenol(S)	*89*		*25-118*

PS22H25I: Laboratory Control Sample (LCS)

EPA 8270E

Run Time: PS22H25I.LCS: 08/26/2022 13:04 [S522H26A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	2670	2290	86	50-114	
Acenaphthylene	2670	2300	86	53-115	
Aniline	2670	3350	126	34-77	*
Anthracene	2670	2290	86	48-119	
Azobenzene	2670	2180	82	65-102	
Benzo(a)anthracene	2670	2290	86	56-120	
Benzo(a)pyrene	2670	2080	78	57-122	
Benzo(b)fluoranthene	2670	2340	88	50-131	
Benzo(ghi)perylene	2670	2180	82	41-132	
Benzo(k)fluoranthene	2670	2400	90	39-137	
Benzyl Alcohol	2670	2320	87	64-102	
Bis(2-chloroethoxy)methane	2670	2630	99	62-98	*
Bis(2-chloroethyl)ether	2670	2230	84	52-100	
Bis(2-ethylhexyl)phthalate	2670	2620	98	68-128	
4-Bromophenyl Phenylether	2670	2290	86	55-118	
Butyl Benzyl Phthalate	2670	2540	95	70-127	
Di-n-butyl Phthalate	2670	2390	90	45-124	
Carbazole	2670	2040	76	72-132	
4-Chloro-3-methylphenol	2670	2090	78	57-120	
2-Chloronaphthalene	2670	2250	84	53-106	
2-Chlorophenol	2670	2030	76	61-99	
4-Chlorophenyl Phenylether	2670	2280	86	50-119	
Chrysene	2670	2320	87	53-124	
Dibenzo(a,h)anthracene	2670	2370	89	53-126	
Dibenzofuran	2670	2180	82	51-116	
2,4-Dichlorophenol	2670	2030	76	56-113	
Diethyl Phthalate	2670	2370	89	46-128	
2,4-Dimethylphenol	2670	2040	76	63-106	
Dimethyl Phthalate	2670	2340	88	63-115	
2,4-Dinitrophenol	2670	1590	60	10-96	
2,4-Dinitrotoluene	2670	2410	90	52-121	
2,6-Dinitrotoluene	2670	2510	94	57-118	
Fluoranthene	2670	2220	83	48-135	

PS22H25I: Laboratory Control Sample (LCS) — EPA 8270E

Run Time: PS22H25I.LCS: 08/26/2022 13:04 [S522H26A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	2670	2160	81	49-126	
Hexachlorobenzene	2670	2250	84	54-118	
Hexachlorobutadiene	2670	1950	73	35-136	
Hexachlorocyclopentadiene	2670	2080	78	43-101	
Hexachloroethane	2670	1800	67	52-104	
Indeno(1,2,3-cd)pyrene	2670	2440	91	51-132	
Isophorone	2670	2860	107	64-102	*
2-Methyl-4,6-dinitrophenol	2670	2140	80	46-109	
2-Methylnaphthalene	2670	2170	81	46-105	
2-Methylphenol	2670	2320	87	60-100	
3&4-Methylphenol	2670	2010	75	58-104	
Naphthalene	2670	2030	76	53-110	
2-Nitroaniline	2670	2640	99	66-112	
3-Nitroaniline	2670	2280	86	45-144	
4-Nitroaniline	2670	2450	92	67-162	
Nitrobenzene	2670	2280	86	61-99	
2-Nitrophenol	2670	2100	79	61-105	
4-Nitrophenol	2670	2310	87	41-105	
N-Nitrosodimethylamine	2670	2080	78	36-119	
N-Nitrosodi-n-propylamine	2670	2250	84	59-107	
N-Nitrosodiphenylamine	2670	2710	101	67-117	
Di-n-octyl Phthalate	2670	2510	94	65-120	
2,2'-Oxybis(1-chloropropane)	2670	2540	95	37-107	
Pentachlorophenol	2670	1820	68	53-107	
Phenanthrene	2670	2260	85	53-119	
Phenol	2670	2040	76	55-91	
Pyrene	2670	2350	88	55-127	
Pyridine	2670	1050	39	10-77	
1,2,4-Trichlorobenzene	2670	1980	74	55-110	
2,4,5-Trichlorophenol	2670	2290	86	52-119	
2,4,6-Trichlorophenol	2670	2250	84	53-114	
2-Fluorobiphenyl(S)			*84*	*49-115*	
1-Fluoronaphthalene(S)			*75*	*46-114*	

PS22H25I: Laboratory Control Sample (LCS)

EPA 8270E

Run Time: PS22H25I.LCS: 08/26/2022 13:04 [S522H26A]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	µg/kg	µg/kg	%	%	
2-Fluorophenol(S)			*79*	*31-112*	
Phenol-d6(S)			*84*	*32-113*	
4-Terphenyl-d14(S)			*86*	*48-117*	
2,4,6-Tribromophenol(S)			*77*	*25-118*	

PT22H17D: Method Blank (MB) — EPA 6020A

Run Time: PT22H17D.MB 08/18/2022 12:04 [T422H18A]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Arsenic	U		5.0
Barium	U		100
Cadmium	U		1.0
Chromium	U		10
Copper	U		4.0
Lead	U		3.0
Selenium	U		5.0
Silver	U		0.20
Zinc	U		50

PT22H17D: Laboratory Control Sample (LCS) — EPA 6020A

Run Time: PT22H17D.LCS: 08/18/2022 12:05 [T422H18A]

Analyte	LCS Spike Amount µg/L	LCS Result µg/L	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.6	98	85-115	
Barium	500	498	100	85-115	
Cadmium	100	96.9	97	85-115	
Chromium	200	202	101	85-115	
Copper	200	207	104	85-115	
Lead	200	187	94	85-115	
Selenium	100	99.0	99	85-115	
Silver	100	102	102	85-115	
Zinc	500	503	101	85-115	

PT22H17F: Method Blank (MB) — EPA 6020A

Run Time: PT22H17F.MB 08/17/2022 14:52 [T422H17A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Arsenic	U		100
Barium	U		1000
Cadmium	U		50
Chromium	U		500
Copper	U		1000
Lead	U		1000
Selenium	U		200
Silver	U		100
Zinc	U		1000

PT22H17F: Laboratory Control Sample (LCS) — EPA 6020A

Run Time: PT22H17F.LCS: 08/17/2022 14:53 [T422H17A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	10000	9820	98	85-115	
Barium	50000	51200	102	85-115	
Cadmium	10000	9710	97	85-115	
Chromium	20000	20100	100	85-115	
Copper	20000	20300	102	85-115	
Lead	20000	19500	97	85-115	
Selenium	10000	9660	97	85-115	
Silver	10000	10500	105	85-115	
Zinc	50000	52200	104	85-115	

VI22H16B: Method Blank (MB)

EPA 8260D

Run Time: VI22H16B.MB 08/16/2022 23:45 [VI22H16B]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Acetone	U		50
Acrylonitrile	U		2.0
Benzene	U		1.0
Bromobenzene	U		1.0
Bromochloromethane	U		1.0
Bromodichloromethane	U		1.0
Bromoform	U		1.0
Bromomethane	U		5.0
2-Butanone	U		25
n-Butylbenzene	U		1.0
sec-Butylbenzene	U		1.0
tert-Butylbenzene	U		1.0
Carbon Disulfide	U		5.0
Carbon Tetrachloride	U		1.0
Chlorobenzene	U		1.0
Chloroethane	U		5.0
Chloroform	U		1.0
Chloromethane	U		5.0
2-Chlorotoluene	U		5.0
1,2-Dibromo-3-chloropropane (SIM)	U		1.0
Dibromochloromethane	U		5.0
Dibromomethane	U		5.0
1,2-Dichlorobenzene	U		1.0
1,3-Dichlorobenzene	U		1.0
1,4-Dichlorobenzene	U		1.0
Dichlorodifluoromethane	U		5.0
1,1-Dichloroethane	U		1.0
1,2-Dichloroethane	U		1.0
1,1-Dichloroethene	U		1.0
cis-1,2-Dichloroethene	U		1.0
trans-1,2-Dichloroethene	U		1.0
1,2-Dichloropropane	U		1.0
cis-1,3-Dichloropropene	U		0.50

VI22H16B: Method Blank (MB) — EPA 8260D

Run Time: VI22H16B.MB 08/16/2022 23:45 [VI22H16B]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/L		µg/L
trans-1,3-Dichloropropene	U		0.50
Ethylbenzene	U		1.0
Ethylene Dibromide	U		1.0
2-Hexanone	U		50
Isopropylbenzene	U		5.0
4-Methyl-2-pentanone	U		50
Methylene Chloride	U		5.0
2-Methylnaphthalene	U		5.0
MTBE	U		5.0
Naphthalene	U		5.0
n-Propylbenzene	U		1.0
Styrene	U		1.0
1,1,1,2-Tetrachloroethane	U		1.0
1,1,2,2-Tetrachloroethane	U		1.0
Tetrachloroethene	U		1.0
Toluene	U		1.0
1,2,4-Trichlorobenzene	U		5.0
1,1,1-Trichloroethane	U		1.0
1,1,2-Trichloroethane	U		1.0
Trichloroethene	U		1.0
Trichlorofluoromethane	U		1.0
1,2,3-Trichloropropane	U		1.0
1,2,3-Trimethylbenzene	U		1.0
1,2,4-Trimethylbenzene	U		1.0
1,3,5-Trimethylbenzene	U		1.0
Vinyl Chloride	U		1.0
m&p-Xylene	U		2.0
o-Xylene	U		1.0
4-Bromofluorobenzene(S)	*99*		*80-120*
Dibromofluoromethane(S)	*102*		*80-120*
1,2-Dichloroethane-d4(S)	*102*		*80-120*
Toluene-d8(S)	*101*		*80-120*

VI22H16B: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260D

Run Time: VI22H16B.LCS: 08/16/2022 22:25 [VI22H16B] VI22H16B.LCSD: 08/16/2022 22:52 [VI22H16B]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	LCSD Spike Amount	LCSD Result	LCSD Rec.	LCSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
Acetone	50.0	34.4	69	40-130		50.0	31.4	63		9	20	
Acrylonitrile	50.0	49.2	98	70-130		50.0	47.7	95		3	20	
Benzene	50.0	47.6	95	80-120		50.0	45.2	90		5	20	
Bromobenzene	50.0	45.4	91	75-125		50.0	42.5	85		7	20	
Bromochloromethane	50.0	45.3	91	70-130		50.0	43.6	87		4	20	
Bromodichloromethane	50.0	49.6	99	75-120		50.0	47.6	95		4	20	
Bromoform	50.0	54.6	109	70-130		50.0	52.6	105		4	20	
Bromomethane	50.0	59.6	119	68-135		50.0	59.7	119		0	20	
2-Butanone	50.0	45.6	91	40-129		50.0	44.9	90		1	20	
n-Butylbenzene	50.0	52.6	105	70-133		50.0	49.7	99		6	20	
sec-Butylbenzene	50.0	50.5	101	70-125		50.0	47.3	95		6	20	
tert-Butylbenzene	50.0	50.5	101	70-130		50.0	47.4	95		6	20	
Carbon Disulfide	50.0	50.0	100	70-130		50.0	46.9	94		6	20	
Carbon Tetrachloride	50.0	48.7	97	70-130		50.0	46.3	93		4	20	
Chlorobenzene	50.0	49.8	100	80-120		50.0	47.7	95		5	20	
Chloroethane	50.0	48.7	97	61-130		50.0	46.0	92		5	20	
Chloroform	50.0	47.0	94	80-120		50.0	44.4	89		5	20	
Chloromethane	50.0	48.9	98	67-125		50.0	47.0	94		4	20	
2-Chlorotoluene	50.0	50.9	102	75-125		50.0	47.8	96		6	20	
1,2-Dibromo-3-chloropropane (SIM)	50.0	51.0	102	70-130		50.0	48.4	97		5	20	
Dibromochloromethane	50.0	52.2	104	70-130		50.0	50.4	101		3	20	
Dibromomethane	50.0	47.7	95	75-125		50.0	46.6	93		2	20	
1,2-Dichlorobenzene	50.0	51.3	103	70-120		50.0	48.7	97		6	20	
1,3-Dichlorobenzene	50.0	49.8	100	75-125		50.0	47.1	94		6	20	
1,4-Dichlorobenzene	50.0	47.7	95	75-125		50.0	45.4	91		4	20	
Dichlorodifluoromethane	50.0	52.5	105	70-136		50.0	48.4	97		8	20	
1,1-Dichloroethane	50.0	44.6	89	70-130		50.0	42.4	85		5	20	
1,2-Dichloroethane	50.0	43.8	88	70-130		50.0	42.5	85		3	20	
1,1-Dichloroethene	50.0	39.2	78	78-120		50.0	36.4	73	*	7	20	
cis-1,2-Dichloroethene	50.0	43.8	88	70-125		50.0	41.3	83		6	20	
trans-1,2-Dichloroethene	50.0	42.9	86	70-130		50.0	40.2	80		7	20	
1,2-Dichloropropane	50.0	48.0	96	80-121		50.0	45.8	92		4	20	
cis-1,3-Dichloropropene	50.0	50.6	101	70-130		50.0	48.7	97		4	20	

VI22H16B: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) — EPA 8260D

Run Time: VI22H16B.LCS: 08/16/2022 22:25 [VI22H16B] VI22H16B.LCSD: 08/16/2022 22:52 [VI22H16B]

Analyte	LCS Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	LCSD Spike Amount	LCSD Result	LCSD Rec.	LCSD Qualifier	RPD	RPD Limits	RPD Qualifier
	µg/L	µg/L	%	%		µg/L	µg/L	%		%	%	
trans-1,3-Dichloropropene	50.0	53.1	106	70-132		50.0	51.2	102		4	20	
Ethylbenzene	50.0	50.8	102	80-120		50.0	48.2	96		6	20	
Ethylene Dibromide	50.0	51.9	104	80-120		50.0	49.9	100		4	20	
2-Hexanone	50.0	41.7	83	70-130		50.0	41.0	82		1	20	
Isopropylbenzene	50.0	52.6	105	75-125		50.0	50.1	100		5	20	
4-Methyl-2-pentanone	50.0	55.6	111	70-130		50.0	53.5	107		4	20	
Methylene Chloride	50.0	40.4	81	70-130		50.0	38.8	78		4	20	
2-Methylnaphthalene	50.0	51.9	104	70-130		50.0	46.1	92		12	20	
MTBE	50.0	53.3	107	70-125		50.0	51.1	102		5	20	
Naphthalene	50.0	49.2	98	70-130		50.0	45.7	91		7	20	
n-Propylbenzene	50.0	51.7	103	70-130		50.0	48.4	97		6	20	
Styrene	50.0	49.6	99	70-130		50.0	47.9	96		3	20	
1,1,1,2-Tetrachloroethane	50.0	54.2	108	80-130		50.0	53.0	106		2	20	
1,1,2,2-Tetrachloroethane	50.0	62.5	125	70-130		50.0	59.6	119		5	20	
Tetrachloroethene	50.0	51.8	104	70-130		50.0	49.4	99		5	20	
Toluene	50.0	47.9	96	80-120		50.0	45.9	92		4	20	
1,2,4-Trichlorobenzene	50.0	49.4	99	70-130		50.0	46.3	93		6	20	
1,1,1-Trichloroethane	50.0	52.6	105	70-130		50.0	49.3	99		6	20	
1,1,2-Trichloroethane	50.0	52.1	104	75-125		50.0	49.6	99		5	20	
Trichloroethene	50.0	41.9	84	71-125		50.0	40.0	80		5	20	
Trichlorofluoromethane	50.0	55.1	110	70-133		50.0	51.8	104		6	20	
1,2,3-Trichloropropane	50.0	52.1	104	75-125		50.0	48.8	98		6	20	
1,2,3-Trimethylbenzene	50.0	48.1	96	70-130		50.0	45.1	90		6	20	
1,2,4-Trimethylbenzene	50.0	51.2	102	75-130		50.0	48.1	96		6	20	
1,3,5-Trimethylbenzene	50.0	50.4	101	75-130		50.0	46.9	94		7	20	
Vinyl Chloride	50.0	50.1	100	74-125		50.0	47.1	94		6	20	
m&p-Xylene	100	103	103	75-130		100	97.8	98		5	20	
o-Xylene	50.0	50.0	100	80-120		50.0	47.6	95		5	20	
4-Bromofluorobenzene(S)			*101*	*80-120*				*101*				
Dibromofluoromethane(S)			*99*	*80-120*				*98*				
1,2-Dichloroethane-d4(S)			*95*	*80-120*				*96*				
Toluene-d8(S)			*98*	*80-120*				*99*				

VP22H16A: Method Blank (MB)

EPA 8260D

Run Time: VP22H16A.MB 08/16/2022 12:26 [VP22H16A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acetone	U		1000
Acrylonitrile	U		100
Benzene	U		50
Bromobenzene	U		100
Bromochloromethane	U		100
Bromodichloromethane	U		100
Bromoform	U		100
Bromomethane	U		200
2-Butanone	U		750
n-Butylbenzene	U		50
sec-Butylbenzene	U		50
tert-Butylbenzene	U		50
Carbon Disulfide	U		250
Carbon Tetrachloride	U		50
Chlorobenzene	U		50
Chloroethane	U		250
Chloroform	U		50
Chloromethane	U		250
2-Chlorotoluene	U		50
1,2-Dibromo-3-chloropropane (SIM)	U		250
Dibromochloromethane	U		100
Dibromomethane	U		250
1,2-Dichlorobenzene	U		100
1,3-Dichlorobenzene	U		100
1,4-Dichlorobenzene	U		100
Dichlorodifluoromethane	U		250
1,1-Dichloroethane	U		50
1,2-Dichloroethane	U		50
1,1-Dichloroethene	U		50
cis-1,2-Dichloroethene	U		50
trans-1,2-Dichloroethene	U		50
1,2-Dichloropropane	U		50
cis-1,3-Dichloropropene	U		50

VP22H16A: Method Blank (MB)

EPA 8260D

Run Time: VP22H16A.MB 08/16/2022 12:26 [VP22H16A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
trans-1,3-Dichloropropene	U		50
Ethylbenzene	U		50
Ethylene Dibromide	U		50
2-Hexanone	U		2500
Isopropylbenzene	U		250
4-Methyl-2-pentanone	U		2500
Methylene Chloride	U		100
2-Methylnaphthalene	U		330
MTBE	U		250
Naphthalene	U		330
n-Propylbenzene	U		100
Styrene	U		50
1,1,1,2-Tetrachloroethane	U		100
1,1,2,2-Tetrachloroethane	U		50
Tetrachloroethene	U		50
Toluene	U		50
1,2,4-Trichlorobenzene	U		250
1,1,1-Trichloroethane	U		50
1,1,2-Trichloroethane	U		50
Trichloroethene	U		50
Trichlorofluoromethane	U		100
1,2,3-Trichloropropane	U		100
1,2,3-Trimethylbenzene	U		100
1,2,4-Trimethylbenzene	U		100
1,3,5-Trimethylbenzene	U		100
Vinyl Chloride	U		40
m&p-Xylene	U		100
o-Xylene	U		50
4-Bromofluorobenzene(S)	*102*		*76-127*
Dibromofluoromethane(S)	*98*		*76-126*
1,2-Dichloroethane-d4(S)	*100*		*75-120*
Toluene-d8(S)	*100*		*80-120*

VP22H16A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) — EPA 8260D

Run Time: VP22H16A.LCS: 08/16/2022 11:06 [VP22H16A] VP22H16A.LCSD: 08/16/2022 11:33 [VP22H16A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier	LCSD Spike Amount µg/kg	LCSD Result µg/kg	LCSD Rec. %	LCSD Qualifier	RPD %	RPD Limits %	RPD Qualifier
Acetone	2500	2930	117	50-149		2500	2680	107		9	20	
Acrylonitrile	2500	2360	94	70-130		2500	2340	94		0	20	
Benzene	2500	2430	97	75-125		2500	2360	94		3	20	
Bromobenzene	2500	2610	104	70-120		2500	2530	101		3	20	
Bromochloromethane	2500	2370	95	70-125		2500	2350	94		1	20	
Bromodichloromethane	2500	2820	113	70-130		2500	2830	113		0	20	
Bromoform	2500	2640	105	70-130		2500	2510	100		5	20	
Bromomethane	2500	2450	98	66-134		2500	2520	101		3	20	
2-Butanone	2500	2900	116	67-131		2500	2730	109		6	20	
n-Butylbenzene	2500	2740	110	70-130		2500	2580	103		7	20	
sec-Butylbenzene	2500	2710	108	70-130		2500	2570	103		5	20	
tert-Butylbenzene	2500	2670	107	70-130		2500	2540	102		5	20	
Carbon Disulfide	2500	3030	121	70-130		2500	2940	118		3	20	
Carbon Tetrachloride	2500	2780	111	70-130		2500	2720	109		2	20	
Chlorobenzene	2500	2640	106	75-125		2500	2560	102		4	20	
Chloroethane	2500	2380	95	70-141		2500	2310	92		3	20	
Chloroform	2500	2410	96	80-120		2500	2450	98		2	20	
Chloromethane	2500	2360	94	63-130		2500	2270	91		3	20	
2-Chlorotoluene	2500	2670	107	70-130		2500	2600	104		3	20	
1,2-Dibromo-3-chloropropane (SIM)	2500	2660	107	70-130		2500	2450	98		9	20	
Dibromochloromethane	2500	3080	123	70-130		2500	3170	127		3	20	
Dibromomethane	2500	2780	111	70-130		2500	2790	111		0	20	
1,2-Dichlorobenzene	2500	2630	105	75-120		2500	2560	102		3	20	
1,3-Dichlorobenzene	2500	2650	106	70-125		2500	2580	103		3	20	
1,4-Dichlorobenzene	2500	2620	105	70-125		2500	2560	102		3	20	
Dichlorodifluoromethane	2500	2870	115	65-135		2500	2650	106		8	20	
1,1-Dichloroethane	2500	2250	90	75-125		2500	2260	90		0	20	
1,2-Dichloroethane	2500	2290	92	70-130		2500	2390	96		4	20	
1,1-Dichloroethene	2500	1890	76	58-104		2500	1880	75		1	20	
cis-1,2-Dichloroethene	2500	2160	86	70-125		2500	2210	89		3	20	
trans-1,2-Dichloroethene	2500	2810	112	70-130		2500	2810	112		0	20	
1,2-Dichloropropane	2500	2470	99	80-120		2500	2480	99		0	20	
cis-1,3-Dichloropropene	2500	2690	108	70-125		2500	2650	106		2	20	

VP22H16A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) — EPA 8260D

Run Time: VP22H16A.LCS: 08/16/2022 11:06 [VP22H16A] VP22H16A.LCSD: 08/16/2022 11:33 [VP22H16A]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier	LCSD Spike Amount µg/kg	LCSD Result µg/kg	LCSD Rec. %	LCSD Qualifier	RPD %	RPD Limits %	RPD Qualifier
trans-1,3-Dichloropropene	2500	2750	110	70-125		2500	2720	109		1	20	
Ethylbenzene	2500	2750	110	80-120		2500	2640	106		4	20	
Ethylene Dibromide	2500	2570	103	70-125		2500	2540	102		1	20	
2-Hexanone	2500	3160	126	70-130		2500	2890	116		8	20	
Isopropylbenzene	2500	2770	111	75-130		2500	2640	106		5	20	
4-Methyl-2-pentanone	2500	2790	112	70-130		2500	2660	107		5	20	
Methylene Chloride	2500	2080	83	70-130		2500	2400	96		15	20	
2-Methylnaphthalene	2500	2030	81	61-136		2500	1750	70		15	20	
MTBE	2500	3160	127	70-130		2500	3230	129		2	20	
Naphthalene	2500	2340	93	70-125		2500	2170	87		7	20	
n-Propylbenzene	2500	2740	110	70-130		2500	2660	106		4	20	
Styrene	2500	2540	102	75-125		2500	2430	97		5	20	
1,1,1,2-Tetrachloroethane	2500	2860	114	75-125		2500	2720	109		4	20	
1,1,2,2-Tetrachloroethane	2500	2790	112	70-130		2500	2610	105		6	20	
Tetrachloroethene	2500	2370	95	70-130		2500	2470	99		4	20	
Toluene	2500	2620	105	80-120		2500	2560	102		3	20	
1,2,4-Trichlorobenzene	2500	2580	103	70-130		2500	2470	99		4	20	
1,1,1-Trichloroethane	2500	2720	109	70-130		2500	2760	110		1	20	
1,1,2-Trichloroethane	2500	2510	100	70-125		2500	2570	103		3	20	
Trichloroethene	2500	2490	99	75-125		2500	2460	98		1	20	
Trichlorofluoromethane	2500	3110	125	50-150		2500	2930	117		7	20	
1,2,3-Trichloropropane	2500	2570	103	70-130		2500	2550	102		1	20	
1,2,3-Trimethylbenzene	2500	2540	102	70-130		2500	2450	98		4	20	
1,2,4-Trimethylbenzene	2500	2700	108	70-130		2500	2610	104		4	20	
1,3,5-Trimethylbenzene	2500	2720	109	70-130		2500	2640	106		3	20	
Vinyl Chloride	2500	2510	100	69-120		2500	2460	99		1	20	
m&p-Xylene	5000	5390	108	80-125		5000	5140	103		5	20	
o-Xylene	2500	2600	104	75-125		2500	2530	101		3	20	
4-Bromofluorobenzene(S)			*102*	*76-127*				*102*				
Dibromofluoromethane(S)			*99*	*76-126*				*103*				
1,2-Dichloroethane-d4(S)			*97*	*75-120*				*101*				
Toluene-d8(S)			*101*	*80-120*				*102*				

VP22H16B: Method Blank (MB)

EPA 8260D

Run Time: VP22H16B.MB 08/17/2022 00:46 [VP22H16B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acetone	U		1000
Acrylonitrile	U		100
Benzene	U		50
Bromobenzene	U		100
Bromochloromethane	U		100
Bromodichloromethane	U		100
Bromoform	U		100
Bromomethane	U		200
2-Butanone	U		750
n-Butylbenzene	U		50
sec-Butylbenzene	U		50
tert-Butylbenzene	U		50
Carbon Disulfide	U		250
Carbon Tetrachloride	U		50
Chlorobenzene	U		50
Chloroethane	U		250
Chloroform	U		50
Chloromethane	U		250
2-Chlorotoluene	U		50
1,2-Dibromo-3-chloropropane (SIM)	U		250
Dibromochloromethane	U		100
Dibromomethane	U		250
1,2-Dichlorobenzene	U		100
1,3-Dichlorobenzene	U		100
1,4-Dichlorobenzene	U		100
Dichlorodifluoromethane	U		250
1,1-Dichloroethane	U		50
1,2-Dichloroethane	U		50
1,1-Dichloroethene	U		50
cis-1,2-Dichloroethene	U		50
trans-1,2-Dichloroethene	U		50
1,2-Dichloropropane	U		50
cis-1,3-Dichloropropene	U		50

VP22H16B: Method Blank (MB)

EPA 8260D

Run Time: VP22H16B.MB 08/17/2022 00:46 [VP22H16B]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
trans-1,3-Dichloropropene	U		50
Ethylbenzene	U		50
Ethylene Dibromide	U		50
2-Hexanone	U		2500
Isopropylbenzene	U		250
4-Methyl-2-pentanone	U		2500
Methylene Chloride	U		100
2-Methylnaphthalene	U		330
MTBE	U		250
Naphthalene	U		330
n-Propylbenzene	U		100
Styrene	U		50
1,1,1,2-Tetrachloroethane	U		100
1,1,2,2-Tetrachloroethane	U		50
Tetrachloroethene	U		50
Toluene	U		50
1,2,4-Trichlorobenzene	U		250
1,1,1-Trichloroethane	U		50
1,1,2-Trichloroethane	U		50
Trichloroethene	U		50
Trichlorofluoromethane	U		100
1,2,3-Trichloropropane	U		100
1,2,3-Trimethylbenzene	U		100
1,2,4-Trimethylbenzene	U		100
1,3,5-Trimethylbenzene	U		100
Vinyl Chloride	U		40
m&p-Xylene	U		100
o-Xylene	U		50
4-Bromofluorobenzene(S)	*105*		*76-127*
Dibromofluoromethane(S)	*97*		*76-126*
1,2-Dichloroethane-d4(S)	*100*		*75-120*
Toluene-d8(S)	*98*		*80-120*

VP22H16B: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) — EPA 8260D

Run Time: VP22H16B.LCS: 08/16/2022 23:27 [VP22H16B] VP22H16B.LCSD: 08/16/2022 23:53 [VP22H16B]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier	LCSD Spike Amount µg/kg	LCSD Result µg/kg	LCSD Rec. %	LCSD Qualifier	RPD %	RPD Limits %	RPD Qualifier
Acetone	2500	2810	113	50-149		2500	2660	106		6	20	
Acrylonitrile	2500	2390	95	70-130		2500	2310	93		2	20	
Benzene	2500	2330	93	75-125		2500	2400	96		3	20	
Bromobenzene	2500	2530	101	70-120		2500	2570	103		2	20	
Bromochloromethane	2500	2400	96	70-125		2500	2360	94		2	20	
Bromodichloromethane	2500	2760	110	70-130		2500	2850	114		4	20	
Bromoform	2500	2530	101	70-130		2500	2650	106		5	20	
Bromomethane	2500	2250	90	66-134		2500	2250	90		0	20	
2-Butanone	2500	2870	115	67-131		2500	2760	110		4	20	
n-Butylbenzene	2500	2460	98	70-130		2500	2570	103		5	20	
sec-Butylbenzene	2500	2510	100	70-130		2500	2610	105		5	20	
tert-Butylbenzene	2500	2510	101	70-130		2500	2630	105		4	20	
Carbon Disulfide	2500	2740	109	70-130		2500	2680	107		2	20	
Carbon Tetrachloride	2500	2620	105	70-130		2500	2770	111		6	20	
Chlorobenzene	2500	2540	102	75-125		2500	2620	105		3	20	
Chloroethane	2500	2260	90	70-141		2500	2170	87		3	20	
Chloroform	2500	2410	96	80-120		2500	2430	97		1	20	
Chloromethane	2500	2270	91	63-130		2500	2260	91		0	20	
2-Chlorotoluene	2500	2560	102	70-130		2500	2630	105		3	20	
1,2-Dibromo-3-chloropropane (SIM)	2500	2420	97	70-130		2500	2380	95		2	20	
Dibromochloromethane	2500	3190	128	70-130		2500	3300	132	*	3	20	
Dibromomethane	2500	2810	112	70-130		2500	2860	114		2	20	
1,2-Dichlorobenzene	2500	2540	102	75-120		2500	2630	105		3	20	
1,3-Dichlorobenzene	2500	2610	105	70-125		2500	2660	106		1	20	
1,4-Dichlorobenzene	2500	2500	100	70-125		2500	2580	103		3	20	
Dichlorodifluoromethane	2500	2620	105	65-135		2500	2680	107		2	20	
1,1-Dichloroethane	2500	2240	90	75-125		2500	2220	89		1	20	
1,2-Dichloroethane	2500	2320	93	70-130		2500	2380	95		2	20	
1,1-Dichloroethene	2500	1760	70	58-104		2500	1680	67		4	20	
cis-1,2-Dichloroethene	2500	2150	86	70-125		2500	2190	88		2	20	
trans-1,2-Dichloroethene	2500	2750	110	70-130		2500	2620	105		5	20	
1,2-Dichloropropane	2500	2460	99	80-120		2500	2510	101		2	20	
cis-1,3-Dichloropropene	2500	2610	105	70-125		2500	2650	106		1	20	

VP22H16B: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) — EPA 8260D

Run Time: VP22H16B.LCS: 08/16/2022 23:27 [VP22H16B] VP22H16B.LCSD: 08/16/2022 23:53 [VP22H16B]

Analyte	LCS Spike Amount µg/kg	LCS Result µg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier	LCSD Spike Amount µg/kg	LCSD Result µg/kg	LCSD Rec. %	LCSD Qualifier	RPD %	RPD Limits %	RPD Qualifier
trans-1,3-Dichloropropene	2500	2710	108	70-125		2500	2740	110		2	20	
Ethylbenzene	2500	2590	104	80-120		2500	2660	107		3	20	
Ethylene Dibromide	2500	2620	105	70-125		2500	2610	104		1	20	
2-Hexanone	2500	2890	116	70-130		2500	2900	116		0	20	
Isopropylbenzene	2500	2600	104	75-130		2500	2690	108		4	20	
4-Methyl-2-pentanone	2500	2780	111	70-130		2500	2750	110		1	20	
Methylene Chloride	2500	2630	105	70-130		2500	2410	96		9	20	
2-Methylnaphthalene	2500	1830	73	61-136		2500	1830	73		0	20	
MTBE	2500	3260	130	70-130		2500	3110	124		5	20	
Naphthalene	2500	2110	84	70-125		2500	2160	86		2	20	
n-Propylbenzene	2500	2580	103	70-130		2500	2690	108		5	20	
Styrene	2500	2440	98	75-125		2500	2500	100		2	20	
1,1,1,2-Tetrachloroethane	2500	2770	111	75-125		2500	2790	111		0	20	
1,1,2,2-Tetrachloroethane	2500	2540	101	70-130		2500	2490	99		2	20	
Tetrachloroethene	2500	2350	94	70-130		2500	2430	97		3	20	
Toluene	2500	2490	100	80-120		2500	2520	101		1	20	
1,2,4-Trichlorobenzene	2500	2210	88	70-130		2500	2340	94		7	20	
1,1,1-Trichloroethane	2500	2650	106	70-130		2500	2680	107		1	20	
1,1,2-Trichloroethane	2500	2530	101	70-125		2500	2570	103		2	20	
Trichloroethene	2500	2500	100	75-125		2500	2610	104		4	20	
Trichlorofluoromethane	2500	2820	113	50-150		2500	2840	114		1	20	
1,2,3-Trichloropropane	2500	2440	98	70-130		2500	2660	106		8	20	
1,2,3-Trimethylbenzene	2500	2440	97	70-130		2500	2530	101		4	20	
1,2,4-Trimethylbenzene	2500	2590	104	70-130		2500	2650	106		2	20	
1,3,5-Trimethylbenzene	2500	2630	105	70-130		2500	2740	110		5	20	
Vinyl Chloride	2500	2330	93	69-120		2500	2350	94		1	20	
m&p-Xylene	5000	5040	101	80-125		5000	5160	103		2	20	
o-Xylene	2500	2490	99	75-125		2500	2560	102		3	20	
4-Bromofluorobenzene(S)			*105*	*76-127*				*106*				
Dibromofluoromethane(S)			*104*	*76-126*				*101*				
1,2-Dichloroethane-d4(S)			*99*	*75-120*				*97*				
Toluene-d8(S)			*101*	*80-120*				*103*				

Definitions/ Qualifiers:

U: The analyte was not detected at or above the Reporting Limit (RL).
***:** Value reported is outside QC limits

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:

By Katherine Jones at 4:33 PM, Sep 15, 2022

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Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #
204156
PAGEL of **3**

Client Name: Sn I=
Contact Person: f"\"\\a [illegible] art'.71 [illegible] l3flfJl\ R.eJ"ef
Project Name/ Number: i [illegible] vi ro f.1tl>- co7
Email distribution list: f1'()'-<-) Jqt t::}-10,/\ [illegible] fr [illegible]
A-\<t [illegible] -t [illegible] "\or [illegible] ,S'}e';n
Quote#
Purchase Order#

PARAMETERS

Matrix Code

S	Saa	GW	Ground Water
A	Air	SW	Surface Water
0	011	WW	waste Water
P	Wipe	X	Other: Specify

Deliverables: Level 2 / Level 3 / Level 4 / EDD

Date	Time	Sample#	Client Sa_mple Descriptor
[illegible]-'2--'	n:o<t	·	S;\ C1-.S-3 J
	ID:3S		S\ J'z.. tY-[illegible].s--
	C\: 55	·,	i) [illegible]3 (-z-2.5
	q':)D	:	SB[illegible](Z.$-3)
	\4:YO	-	SH 5 ('3.S-[illegible]f)
	li-\:.[illegible])	,,	' [illegible]f). r.. r-? - 7.S\
	q._0>	;	[illegible]7 (3_ 4}'
	t0S	·;	1B7 Cs ""\1) t""5
	q:o5	,	Si37 (3[illegible]4) MSD
	)tY ,..S	-	[illegible](2)5? (4-[illegible]. S)

Remarks:

Keceived By Lab
A I I[illegible] 1 1 '>MI)
Initials: ::r .2

Comments: 1 [illegible]/L , \a_r(V'\, Cc.J[illegible]rll/_ C1'.rcl\ ,\rn.. Co[illegible]{LV' lt7te_). ' (uVCvr) [illegible]U/ltlVV\'\ SrlvJ[illegible] -ztfl"l(_

Sampled/Relinquished B[illegible]':\\Q,,) '[illegible](1\vv
Relinquished By: S(-'1..£._ [illegible] Lc(..1._ -[illegible] · lJ
Date/Time 1i :O
Received B[illegible] M_[(d_Jl [illegible],Je/(1¼_
Da te/T:ifam [illegible] fl I /7
Receiv[illegible]
Relinquished By: ✓ d-/'
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Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

LAB USE ONLY

— 1 bus.day ___ 2 bus. days ___ 3 bus. days ___ 4 bus. days 1/

/-s-7 bus. days (standard) Other (specify time/date requirement): _____

Fibertec project number: [illegible]OZSl.J

Temperature upon receipt at Lab:[illegible] .[illegible]" (...

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Fibertec environmental services

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email: lab@fibertec.us

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Fax: 231 775 8584

Geoprobe
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Brighton, MI 48116
Phone: 810 *220* 3300
Fax: 810 *220* 3311

Chain of Custody # **204157**

PAGEk of **2....**

Cllanl Name:
Contact Person:
Project Name/ Number:
Email distribution list:
Quote#
Purchase Order#

PARAMETERS

Matrix Code: S Soil; A Air; O Oil; P Wipe; GW Ground Water; SW Surface Water; WW Waste Water; X Other: Specify

Deliverables: Level2; Level 3; Leve14; EDD

Date	Time	Sample#	Client SamP,! f:I Descriptor
1-li-1,			

Remarks:

Received By Lab

Initials:

Co+ents:

Sampled/Relinquished By:

Relinquished By:

Relinquishedy

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

__ 1 bus.day __ 2 bus. days __ 3 bus. days __ 4 bus. days

V 5-7 bus. days (standard) Other (specify time/date requirement):

LAB USE ONLY

Fibertec project number:

Temperature upon receipt at Lab:

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Fibertec
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services

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email: lab@fibertec.us

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Chain of Custody #
204154
PAGE.3- of **.2.**_

CllenI Name: S/1I-=

Contact Person: t" k,[illegible] JII(I[illegible] PitG'I fje/vJ'

Project Name/ Number: %1\I_q) (():)S. co7

Email distribution list: f'l[illegible]\Q._<j 'Jt(**P1r,**

Q\(_\ t\'-1__,r [illegible]J-- f..w,S I\

PARAMETERS

Matrix Code

_S Soil _GW Ground Water
_**A Air** _SW Surface Water
_OOil _WW Wa,teWater
P Wipe X Oliier: Specify

Deliverables

, __ Level2
,__ Level3
, __ Level 4
EDD

v

Quote#

Purchase Order#

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Date .	nme	Sample#	Client Sample Descriptor	ale	**Remarks:**
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		Gtw D\J\[illegible]		X 7i ;X	

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Analytical Laboratory **Geoprobe** Chain of Custody #

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Received Bv Lab

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Analytical Laboratory **Geoprobe** Chain of Custody #

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Analytical Laboratory **Geoprobe** Chain of Custody #

Initials:

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Sampled/Relinquished By:

Relinquished By:

Analytical Laboratory

Dale//4Ti e.;;

Geoprobe

Chain of Custody #

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Analytical Laboratory **Geoprobe** Chain of Custody #

Re2:

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Analytical Laboratory **Geoprobe** Chain of Custody #

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Analytical Laboratory **Geoprobe** Chain of Custody #

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Relinquished By: Da"re/Tim6 '8-11-?Z /")3:;:,

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

l bus.day ___ 2 bus. days ___ 3 bus. days ___ **4** bus. days

Analytical Laboratory **Geoprobe**

Chain of Custody #

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Analytical Laboratory **Geoprobe** Chain of Custody #

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LAB USE ONLY

Fibertec project number: AlCJ2SJ,/

Analytical Laboratory **Geoprobe** Chain of Custody #

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Analytical Laboratory **Geoprobe** Chain of Custody #

--f.-,_, bos. days fdaodacdf Other (specify time/date requirement):

Temperature upon receipt at Lab: 1, 4 "L

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Fibertec environmental services

Case Narrative

Client: Soil and Materials Engineers, Inc.
Project Name: 88212.00.005.007

Sixteen soil and eight water samples, including blanks, were collected on August 9, 2022 and received by Fibertec, Inc. on August 11, 2022. The shipping cooler temperature was within specifications (0 – 6 °C), and the sample containers arrived without any visible signs of tampering or breakage. Containers were checked for correct pH, where appropriate. The samples were prepared and analyzed within the required hold times.

Please note, due to the amount of sample received for sample "GW DUP" (-022), PCB was not able to be analyzed and is omitted from this report.

Exceptions are noted below.

Cross Reference

Lab ID #	Client ID #	Matrix	Requested Tests
A10254-001	SB1 (2.5-3)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-002	SB2 (4-4.5)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-003	SB3 (2-2.5)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-004	SB4 (2.5-3)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-005	SB5 (3.5-4)	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-006	SB6 (7-7.5)	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-007	SB7 (3-4)	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-008	SB7 (3-4) MS	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-009	SB7 (3-4) MSD	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-010	SB8 (4-4.5)	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-011	SB9 (7.5-8)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-012	SB10 (3.5-4)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-013	SB10-GW (5-10)	Water	Trace Metals, VOCs, SVOCs
A10254-014	SB11 (3.5-4)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-015	SB11-GW (1-6)	Water	Trace Metals, PCBs, VOCs, SVOCs
A10254-016	SB11-GW (1-6) MS	Water	Trace Metals, PCBs, VOCs, SVOCs
A10254-017	SB11-GW (1-6) MSD	Water	Trace Metals, PCBs, VOCs, SVOCs
A10254-018	SB12 (3-3.5)	Soil	%Moisture, Trace Metals, VOCs, SVOCs
A10254-019	SB12 -GW (1-6)	Water	Trace Metals, VOCs, SVOCs
A10254-020	Equipment Blank	Water	Trace Metals, PCBs, VOCs, SVOCs
A10254-021	Soil DUP	Soil	%Moisture, Trace Metals, PCBs, VOCs, SVOCs
A10254-022	GW DUP	Water	Trace Metals, VOCs, SVOCs
A10254-024	Meth Blank	Soil	VOCs

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Fibertec environmental services

Case Narrative

Lab ID #	Client ID #	Matrix	Requested Tests
A10254-025	TB005533	Water	VOCs

Exceptions

Volatile Organic Compounds Method: EPA 5035A/EPA 8260D

Multiple compounds on various samples were qualified as estimated due to high Continuing Calibration Verification. Results may be biased high.

Carbon Tetrachloride: Samples -001, -002, and -024: CCV 122% recovery with criteria being 80-120%

Dibromochloromethane: Samples -001, -002 and -024: CCV 134% recovery with criteria being 80-120%

trans-1, 2-Dichloroethene: Samples -001, -002 and -024: CCV 127% recovery with criteria being 80-120%

trans-1, 2-Dichloroethene: Samples -006 through -012, -014, -018, and -021: CCV 131% recovery with criteria being 80-120%

MTBE: Samples -003 through -012, -014, -018, and -021: CCV 126% recovery with criteria being 80-120%

Samples -003 through -012, -014, -018, and -021 were qualified as estimated due to high Laboratory Control Sample Duplicate and Continuing Calibration Verification as listed below. Results may be biased high.

Dibromochloromethane: CCV 130% recovery with criteria being 80-120%, LCSD 132% recovery with criteria being 70-130%.

Sample -007 was qualified for the listed compounds as the spiked sample recovery was low for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD). The Laboratory Control Sample (LCS) was acceptable. Results may be biased low.

2-Methylnaphthalene: MS 52% recovery with criteria being 61-136%, LCS 73% recovery

1, 1-Dichloroethene: MSD 74% recovery with criteria being 75-120%, LCS 70% recovery

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair exhibited an RPD for 2-Methylnaphthalene (29%) exceeding criteria (RPD ≤20%) associated with sample -007. This indicates increased variability with the results.

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Fibertec environmental services

Case Narrative

Michigan 10 Elements Method: EPA 0200.2/EPA 6020A

Sample -007 was qualified for Lead as the spiked sample recovery was high for the Matrix Spike (156% recovery) and the Matrix Spike Duplicate (196% recovery) with criteria being 70-130%. The Laboratory Control Sample was acceptable at 97% recovery. Results may be biased high, but were non-detect.

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair exhibited an RPD for Lead (23%) exceeding criteria (RPD ≤20%) associated with sample -007. This indicates increased variability with the results.

Base/Neutral/Acid Semivolatiles Method: EPA 3550C/EPA 8270E

Samples -004, -005, -007 through -010, and -021 were qualified as estimated due to high Laboratory Control Sample and Continuing Calibration Verification as listed below. Results may be biased high.

Aniline: Samples -004, -005, and -007: CCV 194% recovery with criteria being 80-120%, LCS 167% recovery with criteria being 34-77%

Aniline: Samples -008 and -009: CCV 175% recovery with criteria being 80-120%, LCS 126% recovery with criteria being 34-77%

Bis(2-chloroethyl)ether: Samples -004, -005, and -007: CCV 131% recovery with criteria being 80-120%, LCS 111% recovery with criteria being 52-100%

Bis(2-chloroethyl)ether: Samples -008 and -009: CCV 124% recovery with criteria being 80-120%, LCS 99% recovery with criteria being 62-98%

The following samples were qualified as estimated for the listed compounds due to low Continuing Calibration Verification. Results may be biased low.

2, 4-Dinitrophenol: Samples -004, -006, -007, -010, and -021: 72% recovery with criteria being 80-120%

4-Nitroaniline: Samples -004 and -007: 72% recovery with criteria being 80-120%

Pentachlorophenol: Samples -004, -005, and -007: 73% recovery with criteria being 80-120%

Pentachlorophenol: Samples -008 and -009: 79% recovery with criteria being 80-120%

Hexachlorocyclopentadiene: Samples -006, -007, -010, and -021: 79% recovery with criteria being 80-120%

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Fibertec environmental services

Case Narrative

The following samples are qualified for the listed compounds due to high Laboratory Control Sample (LCS). Results may be biased high.

Samples -004 through -007, -010, and -021: Isophorone: LCS 114% recovery with criteria being 64-102%

Samples -008 and -009: Isophorone: LCS 107% recovery with criteria being 64-102%

Samples -004 through -007, -010 and -021: Aniline: LCS 167% recovery with criteria being 34-77%

Samples -004 through -007, -010, and -021: Bis(2-chloroethyl)ether: LCS 111% recovery with criteria being 52-100%

The following samples are qualified for the listed compounds due to low Laboratory Control Sample (LCS). Results may be biased low.

Samples -004 through -007, 010, and -021: 3&4-Methylphenol: LCS 54% recovery with criteria being 58-104%.

Samples -004 through -007, 010, and -021: Pentachlorophenol: LCS 47% recovery with criteria being 53-107%.

Sample -007 was qualified for the listed compounds as the spiked sample recovery was low for the Matrix Spike (MS) and Matrix Spike Duplicate (MSD). The Laboratory Control Sample (LCS) was acceptable. Results may be biased low.

Benzyl Alcohol: MS 0% recovery / MSD 0% recovery, with criteria being 64-102%, LCS 95% recovery

Butyl Benzyl Phthalate: MS 0% recovery / MSD 0% recovery, with criteria being 70-127%, LCS 91% recovery

4-Chloro-3-methylphenol: MS 0% recovery / MSD 0% recovery, with criteria being 57-120%, LCS 74% recovery

2, 4-Dinitrophenol: MS 0% recovery / MSD 0% recovery, with criteria being 10-96%, LCS 36% recovery

Hexachlorocyclopentadiene: MS 0% recovery / MSD 0% recovery, with criteria being 43-101%, LCS 59% recovery

2-Methyl-4, 6-dinitrophenol: MS 0% recovery / MSD 0% recovery, with criteria being 46-109%, LCS 71% recovery

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2-Nitrophenol: MS 58% recovery / MSD 58% recovery, with criteria being 61-105%, LCS 76% recovery

4-Nitrophenol: MS 0% recovery / MSD 0% recovery, with criteria being 41-105%, LCS 68% recovery

Pentachlorophenol: MS 0% recovery / MSD 0% recovery, with criteria being 53-107%, LCS was below criteria

Sample -007 was qualified for Aniline as the spiked sample recovery was high for the Matrix Spike (127% recovery) with criteria being 34-77%. Results may be biased high, but were non-detect.

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair exhibited an RPD for Aniline (200%) exceeding criteria (RPD ≤30%) associated with sample -007. This indicates increased variability with the results.

Samples -005, -006, -008, -009, -010, and -021 were diluted due to matrix issues. Reporting limits may be raised.

Volatile Organic Compounds Method: EPA 5030C/EPA 8260D

Samples -013, -015, -016, -017, -019, -020, -022, and -025 were qualified as estimated for the listed compounds due to high Continuing Calibration Verification. Results may be biased high.

Bromomethane: CCV 124% recovery with criteria being 80-120%

Samples -013, -015, -016, -017, -019, -020, -022, and -025 were qualified for 1, 1-Dichloroethene due to low Laboratory Control Sample Duplicate (73% recovery) with criteria being 78-120%. Results may be biased low.

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) pair exhibited an RPD for Bromomethane (23%) exceeding criteria (RPD ≤20%) associated with sample -015. This indicates increased variability with the results.

Base/Neutral/Acid Semivolatiles Method: EPA 3510C/EPA 8270E

Samples -015, -016, -017, -020, and -022 were qualified for the listed compounds due to high Laboratory Control Sample (LCS). Results may be biased high.

Bis(2-chloroethoxy)methane: LCS 114% with criteria being 60-112%

Isophorone: LCS 134% with criteria being 55-123%

2,2'-Oxybis (1-chloropropane): LCS 119% with criteria being 63-116%

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Case Narrative

Sample -015 was qualified for the listed compounds as the spiked sample recovery was low for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD). The Laboratory Control Sample (LCS) was acceptable. Results may be biased low.

Hexachlorocyclopentadiene: MS 11% recovery / MSD 14% recovery, with criteria being 17-89%, LCS 42% recovery

Hexachloroethane: MS 32% recovery / MSD 39% recovery, with criteria being 55-113%, LCS 58% recovery

Sample -015 was qualified for Isophorone as the spiked sample recovery was high for the Matrix Spike (124% recovery) and the Matrix Spike Duplicate (130% recovery) with criteria being 55-123%. Results may be biased high, but were non-detect.

No further exceptions were observed.

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Friday, September 16, 2022

Fibertec Project Number:	A10254 Supplemental
Project Identification:	88212.00.005.007 /88212.00.005.007
Submittal Date:	08/11/2022

Mr. Myles Jackman
Soil and Materials Engineers, Inc. - Saginaw
1685 Champagne Dr East
Saginaw, MI 48604

Dear Mr. Jackman,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 7 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

Bailey Welch

By Bailey Welch at 8:04 AM, Sep 16, 2022

For Daryl P. Strandbergh
Laboratory Director

Enclosures

Fibertec environmental services

Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-001

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB1 (2.5-3)**	Chain of Custody:	**204156**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:08**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB1 (2.5-3)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	**16**		%	1	1.0	08/15/22	MC220815	08/16/22	MC220815	KAS

Lead, MDEQ Criteria **Aliquot ID: A10254-001B** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB1 (2.5-3)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	**546000**		µg/kg	1000	100	09/15/22	PT22I15A	09/15/22	T422I15A	CJA
2. Lead, Fine Fraction	**760000**		µg/kg	2000	100	09/15/22	PT22I15A	09/15/22	T422I15A	CJA
3. Lead, Total (Calculated)	**597000**		µg/kg	1000	1.0	NA	NA	09/15/22	NA	CJA
‡ 4. Percent Total Solids	**76.4**		%	0.1	1.0	NA	NA	09/15/22	NA	CJA

Chromium, Hexavalent **Aliquot ID: A10254-001** **Matrix: Soil/Solid**
Method: EPA 3060A/EPA 7196A **Description: SB1 (2.5-3)**

						Preparation		Analysis		
Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
1. Chromium VI	U	H F-	µg/kg	480	1.0	09/08/22	W322I08A	09/08/22	W322I08A	AVC

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-004

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB4 (2.5-3)**	Chain of Custody:	**na**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**09:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria **Aliquot ID: A10254-004B** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB4 (2.5-3)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Lead, Coarse Fraction	**30300**		µg/kg	1000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	2. Lead, Fine Fraction	**52500**		µg/kg	2000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	3. Lead, Total (Calculated)	**33700**		µg/kg	1000	1.0	NA	NA	09/13/22	NA	CJA
‡	4. Percent Total Solids	**89.3**		%	0.1	1.0	NA	NA	09/13/22	NA	CJA

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-006

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB6 (7-7.5)**	Chain of Custody:	**na**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**14:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria **Aliquot ID: A10254-006B** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB6 (7-7.5)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Lead, Coarse Fraction	**705000**		µg/kg	1000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	2. Lead, Fine Fraction	**625000**		µg/kg	2000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	3. Lead, Total (Calculated)	**701000**		µg/kg	1000	1.0	NA	NA	09/13/22	NA	CJA
‡	4. Percent Total Solids	**77.0**		%	0.1	1.0	NA	NA	09/13/22	NA	CJA

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-012

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**SB10 (3.5-4)**	Chain of Custody:	**na**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**13:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria **Aliquot ID: A10254-012B** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: SB10 (3.5-4)**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Lead, Coarse Fraction	**140000**		µg/kg	1000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	2. Lead, Fine Fraction	**210000**		µg/kg	2000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	3. Lead, Total (Calculated)	**147000**		µg/kg	1000	1.0	NA	NA	09/13/22	NA	CJA
‡	4. Percent Total Solids	**85.6**		%	0.1	1.0	NA	NA	09/13/22	NA	CJA

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Analytical Laboratory Report
Laboratory Project Number: A10254
Laboratory Sample Number: A10254-021

Order: A10254
Date: 09/16/22

Client Identification:	**Soil and Materials Engineers, Inc. - Saginaw**	Sample Description:	**Soil DUP**	Chain of Custody:	**na**
Client Project Name:	**88212.00.005.007**	Sample No:		Collect Date:	**08/09/22**
Client Project No:	**88212.00.005.007**	Sample Matrix:	**Soil/Solid**	Collect Time:	**NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria **Aliquot ID: A10254-021B** **Matrix: Soil/Solid**
Method: EPA 0200.2/EPA 6020A **Description: Soil DUP**

							Preparation		Analysis		
	Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	P. Date	P. Batch	A. Date	A. Batch	Init.
	1. Lead, Coarse Fraction	**70700**		µg/kg	1000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	2. Lead, Fine Fraction	**91400**		µg/kg	2000	100	09/13/22	PT22I13D	09/13/22	T422I13A	CJA
	3. Lead, Total (Calculated)	**73500**		µg/kg	1000	1.0	NA	NA	09/13/22	NA	CJA
‡	4. Percent Total Solids	**85.3**		%	0.1	1.0	NA	NA	09/13/22	NA	CJA

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Definitions/ Qualifiers:

A: Spike recovery or precision unusable due to dilution.
B: The analyte was detected in the associated method blank.
E: The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
J: The concentration is an estimated value.
M: Modified Method
U: The analyte was not detected at or above the reporting limit.
X: Matrix Interference has resulted in a raised reporting limit or distorted result.
W: Results reported on a wet-weight basis.
***:** Value reported is outside QC limits

Exception Summary:

F- : Recovery from the spiked aliquot exceeds the lower control limit (matrix spike or matrix spike duplicate).
H : Hold time exceeded.

Analysis Locations:

All analyses performed in Holt.

NELAP ACCREDITED TNI LABORATORY

Accreditation Number(s):

T104704518-22-14 (TX)

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Case Narrative

Client: Soil and Materials Engineers, Inc.
Project Name: 88212.00.005.007

On September 6, 2022 a request for additional analysis was received, as listed below. The samples were prepared and analyzed within the required holding times.

Exceptions are noted below.

Cross Reference

Lab ID #	Client ID #	Matrix	Requested Tests
A10254-001	SB1 (2.5-3)	Soil	%Moisture, F/C Lead, Hexavalent Chromium
A10254-004	SB4 (2.5-3)	Soil	F/C Lead
A10254-006	SB6 (7-7.5)	Soil	F/C Lead
A10254-012	SB10 (3.5-4)	Soil	F/C Lead
A10254-021	Soil DUP	Soil	F/C Lead

Exceptions

Hexavalent Chromium Method: EPA 3060A/EPA 7196A

Sample -001 was qualified as having estimated results for Hexavalent Chromium due to exceeding the hold time (time from sampling to analysis should be within 28 days and was 30 days.

Sample -001 was qualified for Chromium VI as the spiked sample recovery was low for the Matrix Spike (0% recovery), the Matrix Spike – Insoluble (0% recovery) with criteria being 75-125% and the Post – Digestion Spike (35% recovery with criteria being 85-115%). The Laboratory Control Sample was acceptable at 97%. Results may be biased low.

No further exceptions were observed.

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eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Canton
180 S. Van Buren Avenue
Barberton, OH 44203
Tel: (330)497-9396

Laboratory Job ID: 240-171393-1
Client Project/Site: Former Harbor Beach Dump - 088212.00

For:
Soil and Materials Engineers, Inc.
1685 Champagne Drive East
Saginaw, Michigan 48604

Attn: Myles Jackman

Authorized for release by:
9/13/2022 6:58:19 PM

Kris Brooks, Project Manager II
(330)966-9790
Kris.Brooks@et.eurofinsus.com

Table of Contents

Definitions/Glossary

Qualifiers

LCMS

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
H	Sample was prepped or analyzed beyond the specified holding time
	Value is EMPC (estimated maximum possible concentration).
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Job ID: 240-171393-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-171393-1

Comments

The Perfluorinated Hydrocarbons, PFC_IDA, EPA 537, and ASTM Method D2216-80 Percent Solids analyses were performed at the Eurofins Lancaster laboratory.

Receipt

The samples were received on 8/11/2022 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

LCMS

Method 537 (modified): The recovery for the labeled isotope(s) M2-4:2 FTS, M2-8:2 FTS, M2-6:2 FTS and 13C3 PFBS is outside the QC acceptance limits due to the matrix of the sample.

The sample injection standard peak areas is outside of QC acceptance limits in the matrix spike and matrix spike duplicate samples: SB11-GW (1-6) (240-171393-2), SB11-GW (1-6) (240-171393-2[MS]) and SB11-GW (1-6) (240-171393-2[MSD]).

Method 537 (modified): The recovery for the target analytes: FHxSA and FBSA in the laboratory control spike samples associated with the following samples: FB1 (240-171393-3), FB2 (240-171393-4) and Trip Blank (240-171393-7) is outside the QC acceptance limits. The window should be considered advisory therefore the data is reported.

Method 537 (modified): The recovery for the labeled isotope: M2-4:2 FTS in the following samples: FB1 (240-171393-3) and FB2 (240-171393-4) is outside the QC acceptance limits. Since the recovery is high and the native analyte is not detected in the sample, the data is reported.

Method 537 (modified): The recovery for the labeled isotope(s) M2-4:2 FTS in the method blank associated with samples: FB1 (240-171393-3) and Trip Blank (240-171393-7) is outside the QC acceptance limits. Since the recovery is high and the associated native analyte is not detected in the method blank, the data is reported.

Method 537 (modified): The LCS/LCSD labeled isotope(s) M2-4:2 FTS, M2-8:2 FTS, M2-6:2 FTS, 13C5 PFHxA and 13C3 PFHxS recovery associated with samples: FB1 (240-171393-3) and Trip Blank (240-171393-7) are above the QC acceptance limits. Since the recovery for the associated target analytes is within the limits, the data is reported.

Method 537 (modified): Target analytes: Perfluorooctanesulfonic acid were detected in the following field blank sample: FB2 (240-171393-4). The following action was taken: This sample was re-extracted outside the required holding time and the recovery target analytes were detected in the following field blank sample.

Method 537 (modified): The recovery for the labeled isotope(s) 13C2 PFTeDA in the following sample: GW Dup (240-171393-6) is outside the QC acceptance limits. The following action was taken: This sample was re-extracted outside of the required holding time and the recovery for labeled isotope(s) 13C2 PFTeDA was within QC acceptance limits.

Method 537 (modified): The sample injection standard peak areas in the following sample: GW Dup (240-171393-6) are outside of the QC limits for both the initial injection and the re-injection. The values here are from the initial injection of the sample.

The recovery for the labeled isotope(s) M2-4:2 FTS, M2-6:2 FTS, 13C3 PFBS and 13C5 PFPeA in the following sample: GW Dup (240-171393-6) is outside the QC acceptance limits due to the matrix of the sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No additional analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method	Method Description	Protocol	Laboratory
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
Moisture	Percent Moisture	EPA	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
Extract Aliquot	Preparation, Extract Aliquot	None	ELLE
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency
None = None

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

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1
Project/Site: Former Harbor Beach Dump - 088212.00

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-171393-1	SB11 (4-5)	Solid	08/09/22 11:10	08/11/22 09:30
240-171393-2	SB11-GW (1-6)	Water	08/09/22 11:20	08/11/22 09:30
240-171393-3	FB1	Water	08/09/22 15:25	08/11/22 09:30
240-171393-4	FB2	Water	08/09/22 15:30	08/11/22 09:30
240-171393-5	Soil Dup	Solid	08/09/22 00:00	08/11/22 09:30
240-171393-6	GW Dup	Water	08/09/22 00:00	08/11/22 09:30
240-171393-7	Trip Blank	Water	08/09/22 00:00	08/11/22 09:30

Detection Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: SB11 (4-5) Lab Sample ID: 240-171393-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
NEtFOSAA	0.28		0.066	0.024	ng/g	1	☼	537 IDA	Total/NA
Perfluorohexanoic acid	0.028	J	0.066	0.021	ng/g	1	☼	537 IDA	Total/NA
Perfluorooctanesulfonic acid	0.14		0.066	0.038	ng/g	1	☼	537 IDA	Total/NA
Perfluorooctanoic acid	0.059	J	0.066	0.024	ng/g	1	☼	537 IDA	Total/NA

Client Sample ID: SB11-GW (1-6) Lab Sample ID: 240-171393-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid	27	I F1	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid	14		1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid	51		1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorononanoic acid	5.4	I	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorodecanoic acid	1.5	J I	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid	12		1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorohexanesulfonic acid	16	F1	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	40		1.7	0.42	ng/L	1		537 IDA	Total/NA
NEtFOSAA	50		2.5	0.42	ng/L	1		537 IDA	Total/NA
NMeFOSAA	3.7		1.7	0.51	ng/L	1		537 IDA	Total/NA
Perfluoropentanesulfonic acid	8.6		1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluoroheptanesulfonic acid	3.7	I	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide	0.85	J	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorobutanoic acid	8.7		4.2	1.7	ng/L	1		537 IDA	Total/NA
Perfluoropentanoic acid	47	F1	1.7	0.42	ng/L	1		537 IDA	Total/NA
HFPODA	25	F1	2.5	0.85	ng/L	1		537 IDA	Total/NA
Perfluoroundecanoic acid	4.7	I	1.7	0.42	ng/L	1		537 IDA	Total/NA
FBSA	0.38	J F1	1.7	0.25	ng/L	1		537 IDA	Total/NA
Perfluoro-4-ethylcyclohexanesulfonic acid	0.50	J	1.7	0.17	ng/L	1		537 IDA	Total/NA

Client Sample ID: FB1 Lab Sample ID: 240-171393-3

No Detections.

Client Sample ID: FB2 Lab Sample ID: 240-171393-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid	0.59	J	1.7	0.43	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid - RE	0.80	J H B	1.6	0.41	ng/L	1		537 IDA	Total/NA

Client Sample ID: Soil Dup Lab Sample ID: 240-171393-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid	0.030	J I	0.075	0.030	ng/g	1	☼	537 IDA	Total/NA
Perfluorooctanesulfonic acid	0.097		0.075	0.044	ng/g	1	☼	537 IDA	Total/NA
Perfluorooctanoic acid	0.17		0.075	0.027	ng/g	1	☼	537 IDA	Total/NA

Client Sample ID: GW Dup Lab Sample ID: 240-171393-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid	11		1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid	7.7		1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid	61		1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid	5.5		1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluorohexanesulfonic acid	10		1.8	0.46	ng/L	1		537 IDA	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Detection Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: GW Dup (Continued) Lab Sample ID: 240-171393-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid	41		1.8	0.46	ng/L	1		537 IDA	Total/NA
NEtFOSAA	55		2.8	0.46	ng/L	1		537 IDA	Total/NA
NMeFOSAA	3.5		1.8	0.55	ng/L	1		537 IDA	Total/NA
Perfluoropentanesulfonic acid	3.1		1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluoroheptanesulfonic acid	0.96	J	1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide	0.69	J	1.8	0.46	ng/L	1		537 IDA	Total/NA
Perfluorobutanoic acid	12		4.6	1.8	ng/L	1		537 IDA	Total/NA
Perfluoropentanoic acid	6.3		1.8	0.46	ng/L	1		537 IDA	Total/NA
HFPODA	3.2		2.8	0.92	ng/L	1		537 IDA	Total/NA
FBSA	0.46	J	1.8	0.28	ng/L	1		537 IDA	Total/NA
Perfluoro-4-ethylcyclohexanesulfonic acid	0.27	J	1.8	0.18	ng/L	1		537 IDA	Total/NA
Perfluorohexanoic acid - RE	8.6	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid - RE	6.0	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid - RE	46	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid - RE	3.3	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorohexanesulfonic acid - RE	7.6	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid - RE	31	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
NEtFOSAA - RE	41	H	2.5	0.42	ng/L	1		537 IDA	Total/NA
NMeFOSAA - RE	2.7	H	1.7	0.51	ng/L	1		537 IDA	Total/NA
Perfluoropentanesulfonic acid - RE	2.1	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluoroheptanesulfonic acid - RE	0.69	J H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide - RE	0.53	J H	1.7	0.42	ng/L	1		537 IDA	Total/NA
Perfluorobutanoic acid - RE	8.5	H	4.2	1.7	ng/L	1		537 IDA	Total/NA
Perfluoropentanoic acid - RE	5.0	H	1.7	0.42	ng/L	1		537 IDA	Total/NA
HFPODA - RE	1.8	J H	2.5	0.85	ng/L	1		537 IDA	Total/NA
FBSA - RE	0.35	J H *-	1.7	0.25	ng/L	1		537 IDA	Total/NA
Perfluoro-4-ethylcyclohexanesulfonic acid - RE	0.18	J H *-	1.7	0.17	ng/L	1		537 IDA	Total/NA

Client Sample ID: Trip Blank Lab Sample ID: 240-171393-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: SB11 (4-5)

Date Collected: 08/09/22 11:10

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-1

Matrix: Solid

Percent Solids: 90.5

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11Cl-PF3OUdS	0.024	U	0.066	0.024	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
4:2 Fluorotelomer sulfonic acid	0.019	U	0.066	0.019	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
6:2 Fluorotelomer sulfonic acid	0.054	U	0.11	0.054	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
8:2 Fluorotelomer sulfonic acid	0.019	U	0.066	0.019	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
9Cl-PF3ONS	0.026	U	0.066	0.026	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
DONA	0.024	U	0.066	0.024	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
HFPODA	0.22	U	1.1	0.22	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
NEtFOSAA	**0.28**		0.066	0.024	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
NMeFOSAA	0.034	U	0.066	0.034	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorobutanesulfonic acid	0.40	U	0.88	0.40	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorobutanoic acid	0.026	U	0.066	0.026	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorodecanesulfonic acid	0.023	U	0.066	0.023	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorodecanoic acid	0.026	U	0.066	0.026	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorododecanoic acid	0.025	U	0.066	0.025	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluoroheptanesulfonic acid	0.022	U	0.066	0.022	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluoroheptanoic acid	0.026	U	0.066	0.026	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorohexanesulfonic acid	0.021	U	0.066	0.021	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorohexanoic acid	**0.028**	**J**	0.066	0.021	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorononanesulfonic acid	0.024	U	0.066	0.024	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorononanoic acid	0.025	U	0.066	0.025	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorooctanesulfonamide	0.023	U	0.066	0.023	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorooctanesulfonic acid	**0.14**		0.066	0.038	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorooctanoic acid	**0.059**	**J**	0.066	0.024	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluoropentanesulfonic acid	0.024	U	0.066	0.024	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluoropentanoic acid	0.026	U	0.066	0.026	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorotetradecanoic acid	0.026	U	0.066	0.026	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluorotridecanoic acid	0.023	U	0.066	0.023	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluoroundecanoic acid	0.061	U	0.11	0.061	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.021	U	0.066	0.021	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
FBSA	0.022	U F2 F1	0.066	0.022	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1
FHxSA	0.022	U F2 F1	0.066	0.022	ng/g	☼	09/06/22 07:08	09/10/22 03:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*172*		*10 - 200*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
M2-6:2 FTS	*161*		*10 - 200*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
M2-8:2 FTS	*156*		*15 - 200*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C2 PFTeDA	*74*		*10 - 169*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C3 HFPO-DA	*76*		*10 - 169*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C3 PFBS	*83*		*27 - 179*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C4 PFBA	*77*		*28 - 153*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C4 PFHpA	*79*		*10 - 178*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C5 PFPeA	*77*		*24 - 161*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C8 PFOA	*81*		*26 - 159*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C8 PFOS	*86*		*41 - 154*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
d3-NMeFOSAA	*64*		*10 - 178*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
d5-NEtFOSAA	*73*		*10 - 193*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C3 PFHxS	*84*		*24 - 171*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C5 PFHxA	*77*		*10 - 174*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C6 PFDA	*81*		*26 - 161*	*09/06/22 07:08*	*09/10/22 03:55*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: SB11 (4-5)

Lab Sample ID: 240-171393-1

Date Collected: 08/09/22 11:10

Matrix: Solid

Date Received: 08/11/22 09:30

Percent Solids: 90.5

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C7 PFUnA	*81*		*12 - 173*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C8 FOSA	*43*		*14 - 163*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C2-PFDoDA	*74*		*11 - 166*	*09/06/22 07:08*	*09/10/22 03:55*	*1*
13C9 PFNA	*86*		*26 - 165*	*09/06/22 07:08*	*09/10/22 03:55*	*1*

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**9.5**		1.0	1.0	%			08/16/22 10:11	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: SB11-GW (1-6)

Date Collected: 08/09/22 11:20

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-2

Matrix: Water

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	**27**	**I F1**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluoroheptanoic acid	**14**		1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorooctanoic acid	**51**		1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorononanoic acid	**5.4**	**I**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorodecanoic acid	**1.5**	**J I**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorotridecanoic acid	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorotetradecanoic acid	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorobutanesulfonic acid	**12**		1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorohexanesulfonic acid	**16**	**F1**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorooctanesulfonic acid	**40**		1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
NEtFOSAA	**50**		2.5	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
NMeFOSAA	**3.7**		1.7	0.51	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluoropentanesulfonic acid	**8.6**		1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluoroheptanesulfonic acid	**3.7**	**I**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorononanesulfonic acid	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorodecanesulfonic acid	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorooctanesulfonamide	**0.85**	**J**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorobutanoic acid	**8.7**		4.2	1.7	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluoropentanoic acid	**47**	**F1**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
HFPODA	**25**	**F1**	2.5	0.85	ng/L		08/18/22 10:31	08/21/22 22:35	1
DONA	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
9Cl-PF3ONS	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
11Cl-PF3OUdS	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluoroundecanoic acid	**4.7**	**I**	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluorododecanoic acid	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
8:2 Fluorotelomer sulfonic acid	0.85	U	2.5	0.85	ng/L		08/18/22 10:31	08/21/22 22:35	1
4:2 Fluorotelomer sulfonic acid	0.42	U	1.7	0.42	ng/L		08/18/22 10:31	08/21/22 22:35	1
6:2 Fluorotelomer sulfonic acid	3.6	U	4.2	3.6	ng/L		08/18/22 10:31	08/21/22 22:35	1
FHxSA	0.59	U F1	1.7	0.59	ng/L		08/18/22 10:31	08/21/22 22:35	1
FBSA	**0.38**	**J F1**	1.7	0.25	ng/L		08/18/22 10:31	08/21/22 22:35	1
Perfluoro-4-ethylcyclohexanesulfonic acid	**0.50**	**J**	1.7	0.17	ng/L		08/18/22 10:31	08/21/22 22:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*431*	*5+*	*10 - 200*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
M2-8:2 FTS	*305*	*5+*	*33 - 200*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
M2-6:2 FTS	*619*	*5+*	*17 - 200*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C5 PFHxA	*69*		*24 - 179*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C4 PFHpA	*107*		*31 - 182*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C8 PFOA	*98*		*48 - 162*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C9 PFNA	*67*		*51 - 167*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C6 PFDA	*104*		*49 - 163*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C7 PFUnA	*108*		*34 - 174*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C2-PFDoDA	*78*		*17 - 176*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C2 PFTeDA	*47*		*10 - 179*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C3 PFBS	*328*	*5+*	*16 - 200*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C3 PFHxS	*161*		*28 - 188*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
13C8 PFOS	*90*		*51 - 159*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
d3-NMeFOSAA	*105*		*31 - 174*	*08/18/22 10:31*	*08/21/22 22:35*	*1*
d5-NEtFOSAA	*135*		*29 - 195*	*08/18/22 10:31*	*08/21/22 22:35*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: SB11-GW (1-6) **Lab Sample ID: 240-171393-2**

Date Collected: 08/09/22 11:20 **Matrix: Water**

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	25		10 - 168	08/18/22 10:31	08/21/22 22:35	1
13C4 PFBA	109		42 - 165	08/18/22 10:31	08/21/22 22:35	1
13C5 PFPeA	150		38 - 187	08/18/22 10:31	08/21/22 22:35	1
13C3 HFPO-DA	88		17 - 185	08/18/22 10:31	08/21/22 22:35	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: FB1

Date Collected: 08/09/22 15:25

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-3

Matrix: Water

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluoroheptanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorooctanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorononanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorodecanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorotridecanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorotetradecanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorobutanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorohexanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorooctanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
NEtFOSAA	0.45	U	2.7	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
NMeFOSAA	0.54	U	1.8	0.54	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluoropentanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluoroheptanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorononanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorodecanesulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorooctanesulfonamide	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorobutanoic acid	1.8	U	4.5	1.8	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluoropentanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
HFPODA	0.91	U	2.7	0.91	ng/L		08/17/22 08:58	08/26/22 20:40	1
DONA	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
9Cl-PF3ONS	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
11Cl-PF3OUdS	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluoroundecanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluorododecanoic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
8:2 Fluorotelomer sulfonic acid	0.91	U	2.7	0.91	ng/L		08/17/22 08:58	08/26/22 20:40	1
4:2 Fluorotelomer sulfonic acid	0.45	U	1.8	0.45	ng/L		08/17/22 08:58	08/26/22 20:40	1
6:2 Fluorotelomer sulfonic acid	3.8	U	4.5	3.8	ng/L		08/17/22 08:58	08/26/22 20:40	1
FHxSA	0.63	U *-	1.8	0.63	ng/L		08/17/22 08:58	08/26/22 20:40	1
FBSA	0.27	U *-	1.8	0.27	ng/L		08/17/22 08:58	08/26/22 20:40	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.18	U	1.8	0.18	ng/L		08/17/22 08:58	08/26/22 20:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*245*	*5+	*10 - 200*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
M2-8:2 FTS	*151*		*33 - 200*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
M2-6:2 FTS	*193*		*17 - 200*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C5 PFHxA	*142*		*24 - 179*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C4 PFHpA	*149*		*31 - 182*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C8 PFOA	*130*		*48 - 162*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C9 PFNA	*111*		*51 - 167*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C6 PFDA	*122*		*49 - 163*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C7 PFUnA	*119*		*34 - 174*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C2-PFDoDA	*109*		*17 - 176*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C2 PFTeDA	*111*		*10 - 179*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C3 PFBS	*129*		*16 - 200*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C3 PFHxS	*163*		*28 - 188*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
13C8 PFOS	*125*		*51 - 159*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
d3-NMeFOSAA	*77*		*31 - 174*	*08/17/22 08:58*	*08/26/22 20:40*	*1*
d5-NEtFOSAA	*73*		*29 - 195*	*08/17/22 08:58*	*08/26/22 20:40*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: FB1 **Lab Sample ID: 240-171393-3**

Date Collected: 08/09/22 15:25 **Matrix: Water**

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	68		10 - 168	08/17/22 08:58	08/26/22 20:40	1
13C4 PFBA	121		42 - 165	08/17/22 08:58	08/26/22 20:40	1
13C5 PFPeA	118		38 - 187	08/17/22 08:58	08/26/22 20:40	1
13C3 HFPO-DA	124		17 - 185	08/17/22 08:58	08/26/22 20:40	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: FB2

Date Collected: 08/09/22 15:30

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-4

Matrix: Water

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluoroheptanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorooctanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorononanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorodecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorotridecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorotetradecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorobutanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorohexanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorooctanesulfonic acid	**0.59**	**J**	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
NEtFOSAA	0.43	U	2.6	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
NMeFOSAA	0.52	U	1.7	0.52	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluoropentanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluoroheptanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorononanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorodecanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorooctanesulfonamide	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorobutanoic acid	1.7	U	4.3	1.7	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluoropentanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
HFPODA	0.87	U	2.6	0.87	ng/L		08/17/22 08:58	08/26/22 20:51	1
DONA	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
9Cl-PF3ONS	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
11Cl-PF3OUdS	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluoroundecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluorododecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
8:2 Fluorotelomer sulfonic acid	0.87	U	2.6	0.87	ng/L		08/17/22 08:58	08/26/22 20:51	1
4:2 Fluorotelomer sulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 20:51	1
6:2 Fluorotelomer sulfonic acid	3.6	U	4.3	3.6	ng/L		08/17/22 08:58	08/26/22 20:51	1
FHxSA	0.61	U *-	1.7	0.61	ng/L		08/17/22 08:58	08/26/22 20:51	1
FBSA	0.26	U *-	1.7	0.26	ng/L		08/17/22 08:58	08/26/22 20:51	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.17	U	1.7	0.17	ng/L		08/17/22 08:58	08/26/22 20:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*203*	*5+	*10 - 200*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
M2-8:2 FTS	*148*		*33 - 200*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
M2-6:2 FTS	*176*		*17 - 200*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C5 PFHxA	*127*		*24 - 179*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C4 PFHpA	*146*		*31 - 182*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C8 PFOA	*123*		*48 - 162*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C9 PFNA	*118*		*51 - 167*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C6 PFDA	*123*		*49 - 163*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C7 PFUnA	*121*		*34 - 174*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C2-PFDoDA	*121*		*17 - 176*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C2 PFTeDA	*109*		*10 - 179*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C3 PFBS	*127*		*16 - 200*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C3 PFHxS	*151*		*28 - 188*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
13C8 PFOS	*129*		*51 - 159*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
d3-NMeFOSAA	*87*		*31 - 174*	*08/17/22 08:58*	*08/26/22 20:51*	*1*
d5-NEtFOSAA	*80*		*29 - 195*	*08/17/22 08:58*	*08/26/22 20:51*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: FB2

Lab Sample ID: 240-171393-4

Date Collected: 08/09/22 15:30

Matrix: Water

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	73		10 - 168	08/17/22 08:58	08/26/22 20:51	1
13C4 PFBA	116		42 - 165	08/17/22 08:58	08/26/22 20:51	1
13C5 PFPeA	109		38 - 187	08/17/22 08:58	08/26/22 20:51	1
13C3 HFPO-DA	110		17 - 185	08/17/22 08:58	08/26/22 20:51	1

Method: 537 IDA - EPA 537 Isotope Dilution - RE

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluoroheptanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorooctanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorononanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorodecanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorotridecanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorotetradecanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorobutanesulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorohexanesulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorooctanesulfonic acid	**0.80**	**J H B**	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
NEtFOSAA	0.41	U H	2.4	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
NMeFOSAA	0.49	U H	1.6	0.49	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluoropentanesulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluoroheptanesulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorononanesulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorodecanesulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorooctanesulfonamide	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorobutanoic acid	1.6	U H	4.1	1.6	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluoropentanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
HFPODA	0.81	U H	2.4	0.81	ng/L		08/25/22 15:31	08/26/22 14:01	1
DONA	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
9Cl-PF3ONS	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
11Cl-PF3OUdS	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluoroundecanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluorododecanoic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
8:2 Fluorotelomer sulfonic acid	0.81	U H	2.4	0.81	ng/L		08/25/22 15:31	08/26/22 14:01	1
4:2 Fluorotelomer sulfonic acid	0.41	U H	1.6	0.41	ng/L		08/25/22 15:31	08/26/22 14:01	1
6:2 Fluorotelomer sulfonic acid	3.4	U H	4.1	3.4	ng/L		08/25/22 15:31	08/26/22 14:01	1
FHxSA	0.57	U H *-	1.6	0.57	ng/L		08/25/22 15:31	08/26/22 14:01	1
FBSA	0.24	U H	1.6	0.24	ng/L		08/25/22 15:31	08/26/22 14:01	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.16	U H	1.6	0.16	ng/L		08/25/22 15:31	08/26/22 14:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-4:2 FTS	147		10 - 200	08/25/22 15:31	08/26/22 14:01	1
M2-8:2 FTS	116		33 - 200	08/25/22 15:31	08/26/22 14:01	1
M2-6:2 FTS	119		17 - 200	08/25/22 15:31	08/26/22 14:01	1
13C5 PFHxA	107		24 - 179	08/25/22 15:31	08/26/22 14:01	1
13C4 PFHpA	123		31 - 182	08/25/22 15:31	08/26/22 14:01	1
13C8 PFOA	109		48 - 162	08/25/22 15:31	08/26/22 14:01	1
13C9 PFNA	114		51 - 167	08/25/22 15:31	08/26/22 14:01	1
13C6 PFDA	111		49 - 163	08/25/22 15:31	08/26/22 14:01	1
13C7 PFUnA	103		34 - 174	08/25/22 15:31	08/26/22 14:01	1
13C2-PFDoDA	95		17 - 176	08/25/22 15:31	08/26/22 14:01	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: FB2

Lab Sample ID: 240-171393-4

Date Collected: 08/09/22 15:30

Matrix: Water

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFTeDA	92		10 - 179	08/25/22 15:31	08/26/22 14:01	1
13C3 PFBS	112		16 - 200	08/25/22 15:31	08/26/22 14:01	1
13C3 PFHxS	126		28 - 188	08/25/22 15:31	08/26/22 14:01	1
13C8 PFOS	110		51 - 159	08/25/22 15:31	08/26/22 14:01	1
d3-NMeFOSAA	94		31 - 174	08/25/22 15:31	08/26/22 14:01	1
d5-NEtFOSAA	84		29 - 195	08/25/22 15:31	08/26/22 14:01	1
13C8 FOSA	65		10 - 168	08/25/22 15:31	08/26/22 14:01	1
13C4 PFBA	111		42 - 165	08/25/22 15:31	08/26/22 14:01	1
13C5 PFPeA	104		38 - 187	08/25/22 15:31	08/26/22 14:01	1
13C3 HFPO-DA	83		17 - 185	08/25/22 15:31	08/26/22 14:01	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: Soil Dup

Date Collected: 08/09/22 00:00

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-5

Matrix: Solid

Percent Solids: 79.8

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
11Cl-PF3OUdS	0.027	U	0.075	0.027	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
4:2 Fluorotelomer sulfonic acid	0.021	U	0.075	0.021	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
6:2 Fluorotelomer sulfonic acid	0.061	U	0.12	0.061	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
8:2 Fluorotelomer sulfonic acid	0.021	U	0.075	0.021	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
9Cl-PF3ONS	0.030	U	0.075	0.030	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
DONA	0.027	U	0.075	0.027	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
HFPODA	0.25	U	1.2	0.25	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
NEtFOSAA	0.027	U	0.075	0.027	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
NMeFOSAA	0.039	U	0.075	0.039	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorobutanesulfonic acid	0.45	U	1.0	0.45	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorobutanoic acid	0.030	U	0.075	0.030	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorodecanesulfonic acid	0.026	U	0.075	0.026	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorodecanoic acid	0.030	U	0.075	0.030	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorododecanoic acid	0.029	U	0.075	0.029	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluoroheptanesulfonic acid	0.025	U	0.075	0.025	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluoroheptanoic acid	**0.030**	**J I**	0.075	0.030	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorohexanesulfonic acid	0.024	U	0.075	0.024	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorohexanoic acid	0.024	U	0.075	0.024	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorononanesulfonic acid	0.027	U	0.075	0.027	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorononanoic acid	0.029	U	0.075	0.029	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorooctanesulfonamide	0.026	U	0.075	0.026	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorooctanesulfonic acid	**0.097**		0.075	0.044	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorooctanoic acid	**0.17**		0.075	0.027	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluoropentanesulfonic acid	0.027	U	0.075	0.027	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluoropentanoic acid	0.030	U	0.075	0.030	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorotetradecanoic acid	0.030	U	0.075	0.030	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluorotridecanoic acid	0.026	U	0.075	0.026	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluoroundecanoic acid	0.070	U	0.12	0.070	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.024	U	0.075	0.024	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
FBSA	0.025	U	0.075	0.025	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1
FHxSA	0.025	U	0.075	0.025	ng/g	☼	09/06/22 07:08	09/10/22 04:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*127*		*10 - 200*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
M2-6:2 FTS	*112*		*10 - 200*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
M2-8:2 FTS	*100*		*15 - 200*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C2 PFTeDA	*72*		*10 - 169*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C3 HFPO-DA	*82*		*10 - 169*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C3 PFBS	*82*		*27 - 179*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C4 PFBA	*74*		*28 - 153*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C4 PFHpA	*82*		*10 - 178*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C5 PFPeA	*75*		*24 - 161*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C8 PFOA	*76*		*26 - 159*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C8 PFOS	*83*		*41 - 154*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
d3-NMeFOSAA	*22*		*10 - 178*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
d5-NEtFOSAA	*28*		*10 - 193*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C3 PFHxS	*90*		*24 - 171*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C5 PFHxA	*78*		*10 - 174*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C6 PFDA	*73*		*26 - 161*	*09/06/22 07:08*	*09/10/22 04:28*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: Soil Dup

Lab Sample ID: 240-171393-5

Date Collected: 08/09/22 00:00

Matrix: Solid

Date Received: 08/11/22 09:30

Percent Solids: 79.8

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C7 PFUnA	*82*		*12 - 173*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C8 FOSA	*56*		*14 - 163*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C2-PFDoDA	*73*		*11 - 166*	*09/06/22 07:08*	*09/10/22 04:28*	*1*
13C9 PFNA	*76*		*26 - 165*	*09/06/22 07:08*	*09/10/22 04:28*	*1*

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**20.2**		1.0	1.0	%			08/17/22 08:52	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: GW Dup

Date Collected: 08/09/22 00:00

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-6

Matrix: Water

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	**11**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluoroheptanoic acid	**7.7**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorooctanoic acid	**61**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorononanoic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorodecanoic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorotridecanoic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorotetradecanoic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorobutanesulfonic acid	**5.5**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorohexanesulfonic acid	**10**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorooctanesulfonic acid	**41**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
NEtFOSAA	**55**		2.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
NMeFOSAA	**3.5**		1.8	0.55	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluoropentanesulfonic acid	**3.1**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluoroheptanesulfonic acid	**0.96**	**J**	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorononanesulfonic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorodecanesulfonic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorooctanesulfonamide	**0.69**	**J**	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorobutanoic acid	**12**		4.6	1.8	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluoropentanoic acid	**6.3**		1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
HFPODA	**3.2**		2.8	0.92	ng/L		08/18/22 07:33	08/29/22 19:13	1
DONA	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
9Cl-PF3ONS	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
11Cl-PF3OUdS	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluoroundecanoic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluorododecanoic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
8:2 Fluorotelomer sulfonic acid	0.92	U	2.8	0.92	ng/L		08/18/22 07:33	08/29/22 19:13	1
4:2 Fluorotelomer sulfonic acid	0.46	U	1.8	0.46	ng/L		08/18/22 07:33	08/29/22 19:13	1
6:2 Fluorotelomer sulfonic acid	3.9	U	4.6	3.9	ng/L		08/18/22 07:33	08/29/22 19:13	1
FHxSA	0.64	U	1.8	0.64	ng/L		08/18/22 07:33	08/29/22 19:13	1
FBSA	**0.46**	**J**	1.8	0.28	ng/L		08/18/22 07:33	08/29/22 19:13	1
Perfluoro-4-ethylcyclohexanesulfonic acid	**0.27**	**J**	1.8	0.18	ng/L		08/18/22 07:33	08/29/22 19:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*309*	*5+	*10 - 200*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
M2-8:2 FTS	*199*		*33 - 200*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
M2-6:2 FTS	*338*	*5+	*17 - 200*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C5 PFHxA	*76*		*24 - 179*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C4 PFHpA	*102*		*31 - 182*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C8 PFOA	*93*		*48 - 162*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C9 PFNA	*92*		*51 - 167*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C6 PFDA	*98*		*49 - 163*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C7 PFUnA	*108*		*34 - 174*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C2-PFDoDA	*70*		*17 - 176*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C2 PFTeDA	*7*	*5-	*10 - 179*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C3 PFBS	*344*	*5+	*16 - 200*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C3 PFHxS	*152*		*28 - 188*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C8 PFOS	*95*		*51 - 159*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
d3-NMeFOSAA	*89*		*31 - 174*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
d5-NEtFOSAA	*108*		*29 - 195*	*08/18/22 07:33*	*08/29/22 19:13*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: GW Dup

Date Collected: 08/09/22 00:00

Date Received: 08/11/22 09:30

Lab Sample ID: 240-171393-6

Matrix: Water

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C8 FOSA	*18*		*10 - 168*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C4 PFBA	*122*		*42 - 165*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C5 PFPeA	*191*	*5+	*38 - 187*	*08/18/22 07:33*	*08/29/22 19:13*	*1*
13C3 HFPO-DA	*65*		*17 - 185*	*08/18/22 07:33*	*08/29/22 19:13*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution - RE

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	**8.6**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluoroheptanoic acid	**6.0**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorooctanoic acid	**46**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorononanoic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorodecanoic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorotridecanoic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorotetradecanoic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorobutanesulfonic acid	**3.3**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorohexanesulfonic acid	**7.6**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorooctanesulfonic acid	**31**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
NEtFOSAA	**41**	**H**	2.5	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
NMeFOSAA	**2.7**	**H**	1.7	0.51	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluoropentanesulfonic acid	**2.1**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluoroheptanesulfonic acid	**0.69**	**J H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorononanesulfonic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorodecanesulfonic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorooctanesulfonamide	**0.53**	**J H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorobutanoic acid	**8.5**	**H**	4.2	1.7	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluoropentanoic acid	**5.0**	**H**	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
HFPODA	**1.8**	**J H**	2.5	0.85	ng/L		08/25/22 10:13	08/27/22 07:45	1
DONA	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
9Cl-PF3ONS	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
11Cl-PF3OUdS	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluoroundecanoic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluorododecanoic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
8:2 Fluorotelomer sulfonic acid	0.85	U H	2.5	0.85	ng/L		08/25/22 10:13	08/27/22 07:45	1
4:2 Fluorotelomer sulfonic acid	0.42	U H	1.7	0.42	ng/L		08/25/22 10:13	08/27/22 07:45	1
6:2 Fluorotelomer sulfonic acid	3.6	U H	4.2	3.6	ng/L		08/25/22 10:13	08/27/22 07:45	1
FHxSA	0.59	U H *-	1.7	0.59	ng/L		08/25/22 10:13	08/27/22 07:45	1
FBSA	**0.35**	**J H *-**	1.7	0.25	ng/L		08/25/22 10:13	08/27/22 07:45	1
Perfluoro-4-ethylcyclohexanesulfonic acid	**0.18**	**J H *-**	1.7	0.17	ng/L		08/25/22 10:13	08/27/22 07:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*327*	*5+	*10 - 200*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
M2-8:2 FTS	*249*	*5+	*33 - 200*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
M2-6:2 FTS	*392*	*5+	*17 - 200*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C5 PFHxA	*80*		*24 - 179*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C4 PFHpA	*114*		*31 - 182*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C8 PFOA	*99*		*48 - 162*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C9 PFNA	*104*		*51 - 167*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C6 PFDA	*121*		*49 - 163*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C7 PFUnA	*140*		*34 - 174*	*08/25/22 10:13*	*08/27/22 07:45*	*1*
13C2-PFDoDA	*106*		*17 - 176*	*08/25/22 10:13*	*08/27/22 07:45*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: GW Dup **Lab Sample ID: 240-171393-6**

Date Collected: 08/09/22 00:00 **Matrix: Water**

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution - RE (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFTeDA	115		10 - 179	08/25/22 10:13	08/27/22 07:45	1
13C3 PFBS	280	*5+	16 - 200	08/25/22 10:13	08/27/22 07:45	1
13C3 PFHxS	169		28 - 188	08/25/22 10:13	08/27/22 07:45	1
13C8 PFOS	124		51 - 159	08/25/22 10:13	08/27/22 07:45	1
d3-NMeFOSAA	111		31 - 174	08/25/22 10:13	08/27/22 07:45	1
d5-NEtFOSAA	143		29 - 195	08/25/22 10:13	08/27/22 07:45	1
13C8 FOSA	44		10 - 168	08/25/22 10:13	08/27/22 07:45	1
13C4 PFBA	105		42 - 165	08/25/22 10:13	08/27/22 07:45	1
13C5 PFPeA	165		38 - 187	08/25/22 10:13	08/27/22 07:45	1
13C3 HFPO-DA	90		17 - 185	08/25/22 10:13	08/27/22 07:45	1

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: Trip Blank

Lab Sample ID: 240-171393-7

Date Collected: 08/09/22 00:00

Matrix: Water

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluoroheptanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorooctanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorononanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorodecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorotridecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorotetradecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorobutanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorohexanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorooctanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
NEtFOSAA	0.43	U	2.6	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
NMeFOSAA	0.52	U	1.7	0.52	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluoropentanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluoroheptanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorononanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorodecanesulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorooctanesulfonamide	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorobutanoic acid	1.7	U	4.3	1.7	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluoropentanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
HFPODA	0.86	U	2.6	0.86	ng/L		08/17/22 08:58	08/26/22 21:02	1
DONA	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
9Cl-PF3ONS	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
11Cl-PF3OUdS	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluoroundecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluorododecanoic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
8:2 Fluorotelomer sulfonic acid	0.86	U	2.6	0.86	ng/L		08/17/22 08:58	08/26/22 21:02	1
4:2 Fluorotelomer sulfonic acid	0.43	U	1.7	0.43	ng/L		08/17/22 08:58	08/26/22 21:02	1
6:2 Fluorotelomer sulfonic acid	3.6	U	4.3	3.6	ng/L		08/17/22 08:58	08/26/22 21:02	1
FHxSA	0.60	U *-	1.7	0.60	ng/L		08/17/22 08:58	08/26/22 21:02	1
FBSA	0.26	U *-	1.7	0.26	ng/L		08/17/22 08:58	08/26/22 21:02	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.17	U	1.7	0.17	ng/L		08/17/22 08:58	08/26/22 21:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*191*		*10 - 200*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
M2-8:2 FTS	*136*		*33 - 200*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
M2-6:2 FTS	*161*		*17 - 200*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C5 PFHxA	*140*		*24 - 179*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C4 PFHpA	*114*		*31 - 182*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C8 PFOA	*129*		*48 - 162*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C9 PFNA	*126*		*51 - 167*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C6 PFDA	*131*		*49 - 163*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C7 PFUnA	*118*		*34 - 174*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C2-PFDoDA	*115*		*17 - 176*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C2 PFTeDA	*115*		*10 - 179*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C3 PFBS	*120*		*16 - 200*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C3 PFHxS	*139*		*28 - 188*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
13C8 PFOS	*128*		*51 - 159*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
d3-NMeFOSAA	*96*		*31 - 174*	*08/17/22 08:58*	*08/26/22 21:02*	*1*
d5-NEtFOSAA	*84*		*29 - 195*	*08/17/22 08:58*	*08/26/22 21:02*	*1*

Client Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: Trip Blank

Lab Sample ID: 240-171393-7

Date Collected: 08/09/22 00:00

Matrix: Water

Date Received: 08/11/22 09:30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C8 FOSA	82		10 - 168	08/17/22 08:58	08/26/22 21:02	1
13C4 PFBA	125		42 - 165	08/17/22 08:58	08/26/22 21:02	1
13C5 PFPeA	121		38 - 187	08/17/22 08:58	08/26/22 21:02	1
13C3 HFPO-DA	112		17 - 185	08/17/22 08:58	08/26/22 21:02	1

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-286858/1-A
Matrix: Water
Analysis Batch: 290529

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 286858

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
NEtFOSAA	0.50	U	3.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
NMeFOSAA	0.60	U	2.0	0.60	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorodecanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluoroheptanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluoroheptanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorohexanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorohexanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorodecanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorononanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorononanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorobutanoic acid	2.0	U	5.0	2.0	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorooctanesulfonamide	0.602	J	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorooctanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
HFPODA	1.0	U	3.0	1.0	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorooctanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
DONA	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluoropentanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
9Cl-PF3ONS	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluoropentanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
11Cl-PF3OUdS	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorotetradecanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorotridecanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluoroundecanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluorododecanoic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
8:2 Fluorotelomer sulfonic acid	1.0	U	3.0	1.0	ng/L		08/17/22 08:58	08/29/22 11:12	1
4:2 Fluorotelomer sulfonic acid	0.50	U	2.0	0.50	ng/L		08/17/22 08:58	08/29/22 11:12	1
6:2 Fluorotelomer sulfonic acid	4.2	U	5.0	4.2	ng/L		08/17/22 08:58	08/29/22 11:12	1
FBSA	0.30	U	2.0	0.30	ng/L		08/17/22 08:58	08/29/22 11:12	1
FHxSA	0.70	U	2.0	0.70	ng/L		08/17/22 08:58	08/29/22 11:12	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.20	U	2.0	0.20	ng/L		08/17/22 08:58	08/29/22 11:12	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*214*	*5+	*10 - 200*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
M2-6:2 FTS	*193*		*17 - 200*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
M2-8:2 FTS	*184*		*33 - 200*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C2 PFTeDA	*108*		*10 - 179*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C3 PFBS	*111*		*16 - 200*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C4 PFHpA	*142*		*31 - 182*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C8 PFOA	*123*		*48 - 162*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C8 PFOS	*115*		*51 - 159*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
d3-NMeFOSAA	*91*		*31 - 174*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C4 PFBA	*104*		*42 - 165*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
d5-NEtFOSAA	*82*		*29 - 195*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C3 PFHxS	*167*		*28 - 188*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C5 PFPeA	*92*		*38 - 187*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C3 HFPO-DA	*121*		*17 - 185*	*08/17/22 08:58*	*08/29/22 11:12*	*1*
13C5 PFHxA	*144*		*24 - 179*	*08/17/22 08:58*	*08/29/22 11:12*	*1*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-286858/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 290529 **Prep Batch: 286858**

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C6 PFDA	116		49 - 163	08/17/22 08:58	08/29/22 11:12	1
13C7 PFUnA	99		34 - 174	08/17/22 08:58	08/29/22 11:12	1
13C8 FOSA	51		10 - 168	08/17/22 08:58	08/29/22 11:12	1
13C2-PFDoDA	92		17 - 176	08/17/22 08:58	08/29/22 11:12	1
13C9 PFNA	74		51 - 167	08/17/22 08:58	08/29/22 11:12	1

Lab Sample ID: LCS 410-286858/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290065 **Prep Batch: 286858**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	22.7	18.8		ng/L		83	53 - 138
NEtFOSAA	25.6	21.1		ng/L		82	55 - 134
NMeFOSAA	25.6	20.9		ng/L		82	59 - 140
Perfluorodecanoic acid	25.6	20.2		ng/L		79	56 - 138
Perfluoroheptanoic acid	25.6	22.0		ng/L		86	59 - 145
Perfluoroheptanesulfonic acid	24.4	18.9		ng/L		78	56 - 140
Perfluorohexanesulfonic acid	23.3	18.6		ng/L		80	58 - 134
Perfluorohexanoic acid	25.6	21.4		ng/L		84	58 - 139
Perfluorodecanesulfonic acid	24.7	18.1		ng/L		74	55 - 137
Perfluorononanesulfonic acid	24.6	18.3		ng/L		75	59 - 136
Perfluorononanoic acid	25.6	21.4		ng/L		83	61 - 139
Perfluorobutanoic acid	25.6	21.1		ng/L		82	59 - 136
Perfluorooctanesulfonamide	25.6	21.3		ng/L		83	43 - 167
Perfluorooctanesulfonic acid	23.7	19.4		ng/L		82	45 - 150
HFPODA	25.6	27.0		ng/L		105	50 - 135
Perfluorooctanoic acid	25.6	21.4		ng/L		83	51 - 145
DONA	24.2	18.7		ng/L		77	55 - 143
Perfluoropentanesulfonic acid	24.0	19.6		ng/L		82	55 - 140
9Cl-PF3ONS	23.8	18.4		ng/L		77	59 - 135
Perfluoropentanoic acid	25.6	21.1		ng/L		82	57 - 141
11Cl-PF3OUdS	23.8	19.0		ng/L		80	53 - 139
Perfluorotetradecanoic acid	25.6	21.6		ng/L		85	62 - 139
Perfluorotridecanoic acid	25.6	24.5		ng/L		96	58 - 146
Perfluoroundecanoic acid	25.6	20.8		ng/L		81	60 - 141
Perfluorododecanoic acid	25.6	19.6		ng/L		77	59 - 143
8:2 Fluorotelomer sulfonic acid	24.5	18.7		ng/L		76	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	20.0		ng/L		84	55 - 139
6:2 Fluorotelomer sulfonic acid	24.3	20.0		ng/L		82	28 - 173
FBSA	25.6	11.6	*-	ng/L		45	70 - 130
FHxSA	25.6	9.29	*-	ng/L		36	70 - 130
Perfluoro-4-ethylcyclohexanesulfonic acid	23.6	18.7		ng/L		79	70 - 130

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-4:2 FTS	528	*5+	10 - 200
M2-6:2 FTS	412	*5+	17 - 200
M2-8:2 FTS	284	*5+	33 - 200
13C2 PFTeDA	145		10 - 179

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-286858/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290065 **Prep Batch: 286858**

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C3 PFBS	*154*		*16 - 200*
13C4 PFHpA	*173*		*31 - 182*
13C8 PFOA	*155*		*48 - 162*
13C8 PFOS	*146*		*51 - 159*
d3-NMeFOSAA	*70*		*31 - 174*
13C4 PFBA	*137*		*42 - 165*
d5-NEtFOSAA	*67*		*29 - 195*
13C3 PFHxS	*213*	*5+	*28 - 188*
13C5 PFPeA	*122*		*38 - 187*
13C3 HFPO-DA	*154*		*17 - 185*
13C5 PFHxA	*184*	*5+	*24 - 179*
13C6 PFDA	*146*		*49 - 163*
13C7 PFUnA	*131*		*34 - 174*
13C8 FOSA	*69*		*10 - 168*
13C2-PFDoDA	*131*		*17 - 176*
13C9 PFNA	*101*		*51 - 167*

Lab Sample ID: LCSD 410-286858/3-A **Client Sample ID: Lab Control Sample Dup**

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

Analysis Batch: 290065 **Prep Batch: 286858**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid			22.7	19.0		ng/L		84	53 - 138	1	30
NEtFOSAA			25.6	21.8		ng/L		85	55 - 134	4	30
NMeFOSAA			25.6	21.6		ng/L		85	59 - 140	3	30
Perfluorodecanoic acid			25.6	21.1		ng/L		82	56 - 138	4	30
Perfluoroheptanoic acid			25.6	21.7		ng/L		85	59 - 145	1	30
Perfluoroheptanesulfonic acid			24.4	18.4		ng/L		76	56 - 140	3	30
Perfluorohexanesulfonic acid			23.3	19.0		ng/L		81	58 - 134	2	30
Perfluorohexanoic acid			25.6	20.6		ng/L		81	58 - 139	4	30
Perfluorodecanesulfonic acid			24.7	17.5		ng/L		71	55 - 137	4	30
Perfluorononanesulfonic acid			24.6	18.7		ng/L		76	59 - 136	2	30
Perfluorononanoic acid			25.6	20.6		ng/L		81	61 - 139	3	30
Perfluorobutanoic acid			25.6	21.5		ng/L		84	59 - 136	2	30
Perfluorooctanesulfonamide			25.6	21.0		ng/L		82	43 - 167	1	30
Perfluorooctanesulfonic acid			23.7	18.8		ng/L		79	45 - 150	3	30
HFPODA			25.6	25.1		ng/L		98	50 - 135	7	30
Perfluorooctanoic acid			25.6	21.1		ng/L		83	51 - 145	1	30
DONA			24.2	17.6		ng/L		73	55 - 143	6	30
Perfluoropentanesulfonic acid			24.0	20.6		ng/L		86	55 - 140	5	30
9Cl-PF3ONS			23.8	18.5		ng/L		78	59 - 135	1	30
Perfluoropentanoic acid			25.6	21.6		ng/L		84	57 - 141	2	30
11Cl-PF3OUdS			23.8	19.8		ng/L		83	53 - 139	4	30
Perfluorotetradecanoic acid			25.6	21.8		ng/L		85	62 - 139	1	30
Perfluorotridecanoic acid			25.6	22.6		ng/L		88	58 - 146	8	30
Perfluoroundecanoic acid			25.6	21.7		ng/L		85	60 - 141	4	30
Perfluorododecanoic acid			25.6	19.7		ng/L		77	59 - 143	1	30
8:2 Fluorotelomer sulfonic acid			24.5	20.3		ng/L		83	55 - 138	8	30
4:2 Fluorotelomer sulfonic acid			23.9	19.2		ng/L		80	55 - 139	4	30

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-286858/3-A

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 290065

Prep Batch: 286858

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
6:2 Fluorotelomer sulfonic acid			24.3	22.2		ng/L		91	28 - 173	11	30
FBSA			25.6	9.27	*-	ng/L		36	70 - 130	22	30
FHxSA			25.6	8.07	*-	ng/L		32	70 - 130	14	30
Perfluoro-4-ethylcyclohexanesulfonic acid			23.6	17.3		ng/L		73	70 - 130	8	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-4:2 FTS	*341*	*5+	*10 - 200*
M2-6:2 FTS	*221*	*5+	*17 - 200*
M2-8:2 FTS	*171*		*33 - 200*
13C2 PFTeDA	*114*		*10 - 179*
13C3 PFBS	*118*		*16 - 200*
13C4 PFHpA	*130*		*31 - 182*
13C8 PFOA	*117*		*48 - 162*
13C8 PFOS	*118*		*51 - 159*
d3-NMeFOSAA	*67*		*31 - 174*
13C4 PFBA	*92*		*42 - 165*
d5-NEtFOSAA	*63*		*29 - 195*
13C3 PFHxS	*159*		*28 - 188*
13C5 PFPeA	*88*		*38 - 187*
13C3 HFPO-DA	*100*		*17 - 185*
13C5 PFHxA	*123*		*24 - 179*
13C6 PFDA	*113*		*49 - 163*
13C7 PFUnA	*106*		*34 - 174*
13C8 FOSA	*47*		*10 - 168*
13C2-PFDoDA	*110*		*17 - 176*
13C9 PFNA	*94*		*51 - 167*

Lab Sample ID: MB 410-287250/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 288173

Prep Batch: 287250

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
NEtFOSAA	0.50	U	3.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
NMeFOSAA	0.60	U	2.0	0.60	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorodecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluoroheptanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluoroheptanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorohexanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorohexanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorodecanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorononanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorononanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorobutanoic acid	2.0	U	5.0	2.0	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorooctanesulfonamide	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorooctanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
HFPODA	1.0	U	3.0	1.0	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorooctanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-287250/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 288173 **Prep Batch: 287250**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
DONA	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluoropentanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
9Cl-PF3ONS	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluoropentanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
11Cl-PF3OUdS	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorotetradecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorotridecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluoroundecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluorododecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
8:2 Fluorotelomer sulfonic acid	1.0	U	3.0	1.0	ng/L		08/18/22 07:33	08/21/22 18:42	1
4:2 Fluorotelomer sulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/21/22 18:42	1
6:2 Fluorotelomer sulfonic acid	4.2	U	5.0	4.2	ng/L		08/18/22 07:33	08/21/22 18:42	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.20	U	2.0	0.20	ng/L		08/18/22 07:33	08/21/22 18:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*92*		*10 - 200*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
M2-6:2 FTS	*85*		*17 - 200*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
M2-8:2 FTS	*75*		*33 - 200*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C2 PFTeDA	*87*		*10 - 179*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C3 PFBS	*90*		*16 - 200*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C4 PFHpA	*92*		*31 - 182*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C8 PFOA	*85*		*48 - 162*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C8 PFOS	*86*		*51 - 159*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
d3-NMeFOSAA	*84*		*31 - 174*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C4 PFBA	*87*		*42 - 165*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
d5-NEtFOSAA	*82*		*29 - 195*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C3 PFHxS	*89*		*28 - 188*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C5 PFPeA	*90*		*38 - 187*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C3 HFPO-DA	*89*		*17 - 185*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C5 PFHxA	*89*		*24 - 179*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C6 PFDA	*87*		*49 - 163*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C7 PFUnA	*86*		*34 - 174*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C8 FOSA	*79*		*10 - 168*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C2-PFDoDA	*88*		*17 - 176*	*08/18/22 07:33*	*08/21/22 18:42*	*1*
13C9 PFNA	*86*		*51 - 167*	*08/18/22 07:33*	*08/21/22 18:42*	*1*

Lab Sample ID: MB 410-287250/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 290529 **Prep Batch: 287250**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
NEtFOSAA	0.50	U	3.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
NMeFOSAA	0.60	U	2.0	0.60	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorodecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluoroheptanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluoroheptanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorohexanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-287250/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 290529 **Prep Batch: 287250**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorodecanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorononanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorononanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorobutanoic acid	2.0	U	5.0	2.0	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorooctanesulfonamide	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorooctanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
HFPODA	1.0	U	3.0	1.0	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorooctanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
DONA	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluoropentanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
9Cl-PF3ONS	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluoropentanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
11Cl-PF3OUdS	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorotetradecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorotridecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluoroundecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluorododecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
8:2 Fluorotelomer sulfonic acid	1.0	U	3.0	1.0	ng/L		08/18/22 07:33	08/29/22 18:51	1
4:2 Fluorotelomer sulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 07:33	08/29/22 18:51	1
6:2 Fluorotelomer sulfonic acid	4.2	U	5.0	4.2	ng/L		08/18/22 07:33	08/29/22 18:51	1
FBSA	0.30	U	2.0	0.30	ng/L		08/18/22 07:33	08/29/22 18:51	1
FHxSA	0.70	U	2.0	0.70	ng/L		08/18/22 07:33	08/29/22 18:51	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.20	U	2.0	0.20	ng/L		08/18/22 07:33	08/29/22 18:51	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*157*		*10 - 200*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
M2-6:2 FTS	*150*		*17 - 200*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
M2-8:2 FTS	*126*		*33 - 200*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C2 PFTeDA	*104*		*10 - 179*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C3 PFBS	*113*		*16 - 200*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C4 PFHpA	*126*		*31 - 182*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C8 PFOA	*124*		*48 - 162*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C8 PFOS	*121*		*51 - 159*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
d3-NMeFOSAA	*101*		*31 - 174*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C4 PFBA	*113*		*42 - 165*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
d5-NEtFOSAA	*100*		*29 - 195*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C3 PFHxS	*129*		*28 - 188*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C5 PFPeA	*102*		*38 - 187*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C3 HFPO-DA	*96*		*17 - 185*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C5 PFHxA	*117*		*24 - 179*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C6 PFDA	*119*		*49 - 163*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C7 PFUnA	*113*		*34 - 174*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C8 FOSA	*93*		*10 - 168*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C2-PFDoDA	*103*		*17 - 176*	*08/18/22 07:33*	*08/29/22 18:51*	*1*
13C9 PFNA	*129*		*51 - 167*	*08/18/22 07:33*	*08/29/22 18:51*	*1*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-287250/3-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 288173 **Prep Batch: 287250**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	22.7	21.5		ng/L		95	53 - 138
NEtFOSAA	25.6	26.2		ng/L		102	55 - 134
NMeFOSAA	25.6	25.9		ng/L		101	59 - 140
Perfluorodecanoic acid	25.6	23.4		ng/L		91	56 - 138
Perfluoroheptanoic acid	25.6	23.7		ng/L		92	59 - 145
Perfluoroheptanesulfonic acid	24.4	20.4		ng/L		84	56 - 140
Perfluorohexanesulfonic acid	23.3	20.5		ng/L		88	58 - 134
Perfluorohexanoic acid	25.6	22.9		ng/L		89	58 - 139
Perfluorodecanesulfonic acid	24.7	22.1		ng/L		89	55 - 137
Perfluorononanesulfonic acid	24.6	21.8		ng/L		89	59 - 136
Perfluorononanoic acid	25.6	25.0		ng/L		98	61 - 139
Perfluorobutanoic acid	25.6	24.2		ng/L		95	59 - 136
Perfluorooctanesulfonamide	25.6	24.9		ng/L		97	43 - 167
Perfluorooctanesulfonic acid	23.7	22.0		ng/L		93	45 - 150
HFPODA	25.6	23.6		ng/L		92	50 - 135
Perfluorooctanoic acid	25.6	23.4		ng/L		91	51 - 145
DONA	24.2	21.4		ng/L		88	55 - 143
Perfluoropentanesulfonic acid	24.0	23.2		ng/L		97	55 - 140
9Cl-PF3ONS	23.8	21.7		ng/L		91	59 - 135
Perfluoropentanoic acid	25.6	23.6		ng/L		92	57 - 141
11Cl-PF3OUdS	23.8	21.2		ng/L		89	53 - 139
Perfluorotetradecanoic acid	25.6	24.4		ng/L		95	62 - 139
Perfluorotridecanoic acid	25.6	25.6		ng/L		100	58 - 146
Perfluoroundecanoic acid	25.6	27.1		ng/L		106	60 - 141
Perfluorododecanoic acid	25.6	24.2		ng/L		95	59 - 143
8:2 Fluorotelomer sulfonic acid	24.5	27.0		ng/L		110	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	23.9		ng/L		100	55 - 139
6:2 Fluorotelomer sulfonic acid	24.3	24.0		ng/L		99	28 - 173
Perfluoro-4-ethylcyclohexanesulfonic acid	23.6	19.6		ng/L		83	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*85*		*10 - 200*
M2-6:2 FTS	*85*		*17 - 200*
M2-8:2 FTS	*91*		*33 - 200*
13C2 PFTeDA	*99*		*10 - 179*
13C3 PFBS	*91*		*16 - 200*
13C4 PFHpA	*91*		*31 - 182*
13C8 PFOA	*92*		*48 - 162*
13C8 PFOS	*93*		*51 - 159*
d3-NMeFOSAA	*94*		*31 - 174*
13C4 PFBA	*88*		*42 - 165*
d5-NEtFOSAA	*97*		*29 - 195*
13C3 PFHxS	*94*		*28 - 188*
13C5 PFPeA	*88*		*38 - 187*
13C3 HFPO-DA	*84*		*17 - 185*
13C5 PFHxA	*89*		*24 - 179*
13C6 PFDA	*100*		*49 - 163*
13C7 PFUnA	*96*		*34 - 174*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-287250/3-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 288173 **Prep Batch: 287250**

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C8 FOSA	*80*		*10 - 168*
13C2-PFDoDA	*92*		*17 - 176*
13C9 PFNA	*95*		*51 - 167*

Lab Sample ID: LCS 410-287250/3-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290529 **Prep Batch: 287250**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	22.7	22.5		ng/L		99	53 - 138
NEtFOSAA	25.6	25.2		ng/L		98	55 - 134
NMeFOSAA	25.6	26.9		ng/L		105	59 - 140
Perfluorodecanoic acid	25.6	24.9		ng/L		97	56 - 138
Perfluoroheptanoic acid	25.6	23.7		ng/L		93	59 - 145
Perfluoroheptanesulfonic acid	24.4	20.8		ng/L		85	56 - 140
Perfluorohexanesulfonic acid	23.3	20.2		ng/L		87	58 - 134
Perfluorohexanoic acid	25.6	23.9		ng/L		93	58 - 139
Perfluorodecanesulfonic acid	24.7	20.2		ng/L		82	55 - 137
Perfluorononanesulfonic acid	24.6	21.8		ng/L		89	59 - 136
Perfluorononanoic acid	25.6	23.1		ng/L		90	61 - 139
Perfluorobutanoic acid	25.6	23.5		ng/L		92	59 - 136
Perfluorooctanesulfonamide	25.6	24.4		ng/L		95	43 - 167
Perfluorooctanesulfonic acid	23.7	21.9		ng/L		92	45 - 150
HFPODA	25.6	26.8		ng/L		105	50 - 135
Perfluorooctanoic acid	25.6	24.3		ng/L		95	51 - 145
DONA	24.2	21.9		ng/L		90	55 - 143
Perfluoropentanesulfonic acid	24.0	22.2		ng/L		92	55 - 140
9Cl-PF3ONS	23.8	21.0		ng/L		88	59 - 135
Perfluoropentanoic acid	25.6	23.0		ng/L		90	57 - 141
11Cl-PF3OUdS	23.8	20.4		ng/L		86	53 - 139
Perfluorotetradecanoic acid	25.6	24.4		ng/L		95	62 - 139
Perfluorotridecanoic acid	25.6	24.1		ng/L		94	58 - 146
Perfluoroundecanoic acid	25.6	24.4		ng/L		95	60 - 141
Perfluorododecanoic acid	25.6	22.8		ng/L		89	59 - 143
8:2 Fluorotelomer sulfonic acid	24.5	22.7		ng/L		93	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	22.6		ng/L		95	55 - 139
6:2 Fluorotelomer sulfonic acid	24.3	24.3		ng/L		100	28 - 173
FBSA	25.6	18.1		ng/L		71	70 - 130
FHxSA	25.6	18.8		ng/L		73	70 - 130
Perfluoro-4-ethylcyclohexanesulfonic acid	23.6	19.9		ng/L		84	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*126*		*10 - 200*
M2-6:2 FTS	*122*		*17 - 200*
M2-8:2 FTS	*117*		*33 - 200*
13C2 PFTeDA	*94*		*10 - 179*
13C3 PFBS	*99*		*16 - 200*
13C4 PFHpA	*102*		*31 - 182*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-287250/3-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290529 **Prep Batch: 287250**

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C8 PFOA	100		48 - 162
13C8 PFOS	102		51 - 159
d3-NMeFOSAA	90		31 - 174
13C4 PFBA	98		42 - 165
d5-NEtFOSAA	90		29 - 195
13C3 PFHxS	111		28 - 188
13C5 PFPeA	93		38 - 187
13C3 HFPO-DA	80		17 - 185
13C5 PFHxA	96		24 - 179
13C6 PFDA	105		49 - 163
13C7 PFUnA	104		34 - 174
13C8 FOSA	81		10 - 168
13C2-PFDoDA	99		17 - 176
13C9 PFNA	105		51 - 167

Lab Sample ID: MB 410-287376/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
NEtFOSAA	0.50	U	3.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
NMeFOSAA	0.60	U	2.0	0.60	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorodecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluoroheptanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluoroheptanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorohexanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorohexanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorodecanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorononanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorononanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorobutanoic acid	2.0	U	5.0	2.0	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorooctanesulfonamide	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorooctanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
HFPODA	1.0	U	3.0	1.0	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorooctanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
DONA	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluoropentanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
9Cl-PF3ONS	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluoropentanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
11Cl-PF3OUdS	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorotetradecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorotridecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluoroundecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluorododecanoic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
8:2 Fluorotelomer sulfonic acid	1.0	U	3.0	1.0	ng/L		08/18/22 10:31	08/21/22 21:50	1
4:2 Fluorotelomer sulfonic acid	0.50	U	2.0	0.50	ng/L		08/18/22 10:31	08/21/22 21:50	1
6:2 Fluorotelomer sulfonic acid	4.2	U	5.0	4.2	ng/L		08/18/22 10:31	08/21/22 21:50	1
FBSA	0.30	U	2.0	0.30	ng/L		08/18/22 10:31	08/21/22 21:50	1

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-287376/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
FHxSA	0.70	U	2.0	0.70	ng/L		08/18/22 10:31	08/21/22 21:50	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.20	U	2.0	0.20	ng/L		08/18/22 10:31	08/21/22 21:50	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*101*		*10 - 200*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
M2-6:2 FTS	*94*		*17 - 200*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
M2-8:2 FTS	*100*		*33 - 200*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C2 PFTeDA	*84*		*10 - 179*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C3 PFBS	*88*		*16 - 200*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C4 PFHpA	*99*		*31 - 182*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C8 PFOA	*93*		*48 - 162*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C8 PFOS	*99*		*51 - 159*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
d3-NMeFOSAA	*94*		*31 - 174*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C4 PFBA	*95*		*42 - 165*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
d5-NEtFOSAA	*93*		*29 - 195*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C3 PFHxS	*95*		*28 - 188*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C5 PFPeA	*91*		*38 - 187*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C3 HFPO-DA	*91*		*17 - 185*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C5 PFHxA	*85*		*24 - 179*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C6 PFDA	*91*		*49 - 163*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C7 PFUnA	*95*		*34 - 174*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C8 FOSA	*89*		*10 - 168*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C2-PFDoDA	*92*		*17 - 176*	*08/18/22 10:31*	*08/21/22 21:50*	*1*
13C9 PFNA	*96*		*51 - 167*	*08/18/22 10:31*	*08/21/22 21:50*	*1*

Lab Sample ID: LCS 410-287376/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	22.7	23.5		ng/L		104	53 - 138
NEtFOSAA	25.6	26.7		ng/L		104	55 - 134
NMeFOSAA	25.6	24.2		ng/L		95	59 - 140
Perfluorodecanoic acid	25.6	24.5		ng/L		96	56 - 138
Perfluoroheptanoic acid	25.6	25.0		ng/L		98	59 - 145
Perfluoroheptanesulfonic acid	24.4	23.2		ng/L		95	56 - 140
Perfluorohexanesulfonic acid	23.3	21.4		ng/L		92	58 - 134
Perfluorohexanoic acid	25.6	24.5		ng/L		96	58 - 139
Perfluorodecanesulfonic acid	24.7	19.7		ng/L		80	55 - 137
Perfluorononanesulfonic acid	24.6	20.5		ng/L		83	59 - 136
Perfluorononanoic acid	25.6	24.5		ng/L		96	61 - 139
Perfluorobutanoic acid	25.6	24.7		ng/L		96	59 - 136
Perfluorooctanesulfonamide	25.6	24.7		ng/L		97	43 - 167
Perfluorooctanesulfonic acid	23.7	22.5		ng/L		95	45 - 150
HFPODA	25.6	21.4		ng/L		84	50 - 135
Perfluorooctanoic acid	25.6	25.0		ng/L		98	51 - 145
DONA	24.2	22.0		ng/L		91	55 - 143
Perfluoropentanesulfonic acid	24.0	22.5		ng/L		94	55 - 140

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-287376/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
9Cl-PF3ONS	23.8	19.4		ng/L		81	59 - 135
Perfluoropentanoic acid	25.6	23.5		ng/L		92	57 - 141
11Cl-PF3OUdS	23.8	21.4		ng/L		90	53 - 139
Perfluorotetradecanoic acid	25.6	25.8		ng/L		101	62 - 139
Perfluorotridecanoic acid	25.6	25.5		ng/L		100	58 - 146
Perfluoroundecanoic acid	25.6	23.1		ng/L		90	60 - 141
Perfluorododecanoic acid	25.6	22.2		ng/L		87	59 - 143
8:2 Fluorotelomer sulfonic acid	24.5	21.8		ng/L		89	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	21.2		ng/L		89	55 - 139
6:2 Fluorotelomer sulfonic acid	24.3	21.5		ng/L		89	28 - 173
FBSA	25.6	25.1		ng/L		98	70 - 130
FHxSA	25.6	22.0		ng/L		86	70 - 130
Perfluoro-4-ethylcyclohexanesulfonic acid	23.6	20.2		ng/L		86	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*116*		*10 - 200*
M2-6:2 FTS	*126*		*17 - 200*
M2-8:2 FTS	*104*		*33 - 200*
13C2 PFTeDA	*88*		*10 - 179*
13C3 PFBS	*102*		*16 - 200*
13C4 PFHpA	*112*		*31 - 182*
13C8 PFOA	*110*		*48 - 162*
13C8 PFOS	*115*		*51 - 159*
d3-NMeFOSAA	*105*		*31 - 174*
13C4 PFBA	*109*		*42 - 165*
d5-NEtFOSAA	*104*		*29 - 195*
13C3 PFHxS	*115*		*28 - 188*
13C5 PFPeA	*99*		*38 - 187*
13C3 HFPO-DA	*131*		*17 - 185*
13C5 PFHxA	*102*		*24 - 179*
13C6 PFDA	*107*		*49 - 163*
13C7 PFUnA	*98*		*34 - 174*
13C8 FOSA	*94*		*10 - 168*
13C2-PFDoDA	*101*		*17 - 176*
13C9 PFNA	*112*		*51 - 167*

Lab Sample ID: 240-171393-2 MS **Client Sample ID: SB11-GW (1-6)**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanoic acid	27	I F1	21.7	31.3	F1	ng/L		20	58 - 139
Perfluoroheptanoic acid	14		21.7	29.4		ng/L		73	59 - 145
Perfluorooctanoic acid	51		21.7	77.7		ng/L		123	51 - 145
Perfluorononanoic acid	5.4	I	21.7	27.0		ng/L		99	61 - 139
Perfluorodecanoic acid	1.5	J I	21.7	20.9		ng/L		89	56 - 138
Perfluorotridecanoic acid	0.42	U	21.7	16.1		ng/L		74	58 - 146
Perfluorotetradecanoic acid	0.42	U	21.7	22.8		ng/L		105	62 - 139

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: 240-171393-2 MS **Client Sample ID: SB11-GW (1-6)**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	12		19.2	29.8		ng/L		93	53 - 138
Perfluorohexanesulfonic acid	16	F1	19.8	27.0	F1	ng/L		56	58 - 134
Perfluorooctanesulfonic acid	40		20.1	61.9		ng/L		109	45 - 150
NEtFOSAA	50		21.7	72.8		ng/L		103	55 - 134
NMeFOSAA	3.7		21.7	25.9		ng/L		102	59 - 140
Perfluoropentanesulfonic acid	8.6		20.3	21.5		ng/L		64	55 - 140
Perfluoroheptanesulfonic acid	3.7	I	20.6	20.9		ng/L		83	56 - 140
Perfluorononanesulfonic acid	0.42	U	20.8	21.9		ng/L		105	59 - 136
Perfluorodecanesulfonic acid	0.42	U	20.9	19.0		ng/L		91	55 - 137
Perfluorooctanesulfonamide	0.85	J	21.7	21.7		ng/L		96	43 - 167
Perfluorobutanoic acid	8.7		21.7	28.0		ng/L		89	59 - 136
Perfluoropentanoic acid	47	F1	21.7	29.3	F1	ng/L		-83	57 - 141
HFPODA	25	F1	21.7	24.3	F1	ng/L		-3	50 - 135
DONA	0.42	U	20.5	20.3		ng/L		99	55 - 143
9Cl-PF3ONS	0.42	U	20.2	21.1		ng/L		105	59 - 135
11Cl-PF3OUdS	0.42	U	20.2	17.6		ng/L		87	53 - 139
Perfluoroundecanoic acid	4.7	I	21.7	27.2	I	ng/L		104	60 - 141
Perfluorododecanoic acid	0.42	U	21.7	19.2		ng/L		89	59 - 143
8:2 Fluorotelomer sulfonic acid	0.85	U	20.8	19.9		ng/L		96	55 - 138
4:2 Fluorotelomer sulfonic acid	0.42	U	20.3	18.3		ng/L		90	55 - 139
6:2 Fluorotelomer sulfonic acid	3.6	U	20.6	17.9		ng/L		87	28 - 173
FHxSA	0.59	U F1	21.7	5.22	F1	ng/L		24	70 - 130
FBSA	0.38	J F1	21.7	8.73	F1	ng/L		39	70 - 130
Perfluoro-4-ethylcyclohexanesulfonic acid	0.50	J	20.0	17.0		ng/L		83	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
M2-4:2 FTS	*475*	**5+*	*10 - 200*
M2-8:2 FTS	*284*	**5+*	*33 - 200*
M2-6:2 FTS	*563*	**5+*	*17 - 200*
13C5 PFHxA	*69*		*24 - 179*
13C4 PFHpA	*107*		*31 - 182*
13C8 PFOA	*98*		*48 - 162*
13C9 PFNA	*76*		*51 - 167*
13C6 PFDA	*104*		*49 - 163*
13C7 PFUnA	*93*		*34 - 174*
13C2-PFDoDA	*73*		*17 - 176*
13C2 PFTeDA	*27*		*10 - 179*
13C3 PFBS	*329*	**5+*	*16 - 200*
13C3 PFHxS	*174*		*28 - 188*
13C8 PFOS	*97*		*51 - 159*
d3-NMeFOSAA	*101*		*31 - 174*
d5-NEtFOSAA	*127*		*29 - 195*
13C8 FOSA	*18*		*10 - 168*
13C4 PFBA	*101*		*42 - 165*
13C5 PFPeA	*148*		*38 - 187*
13C3 HFPO-DA	*90*		*17 - 185*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: 240-171393-2 MSD **Client Sample ID: SB11-GW (1-6)**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 288154 **Prep Batch: 287376**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorohexanoic acid	27	I F1	21.8	29.7	F1	ng/L		12	58 - 139	5	30
Perfluoroheptanoic acid	14		21.8	34.2		ng/L		95	59 - 145	15	30
Perfluorooctanoic acid	51		21.8	76.3		ng/L		116	51 - 145	2	30
Perfluorononanoic acid	5.4	I	21.8	26.5		ng/L		97	61 - 139	2	30
Perfluorodecanoic acid	1.5	J I	21.8	24.2		ng/L		104	56 - 138	15	30
Perfluorotridecanoic acid	0.42	U	21.8	17.7		ng/L		81	58 - 146	10	30
Perfluorotetradecanoic acid	0.42	U	21.8	23.7		ng/L		109	62 - 139	4	30
Perfluorobutanesulfonic acid	12		19.3	22.8		ng/L		57	53 - 138	26	30
Perfluorohexanesulfonic acid	16	F1	19.9	26.8	F1	ng/L		54	58 - 134	1	30
Perfluorooctanesulfonic acid	40		20.2	57.9		ng/L		88	45 - 150	7	30
NEtFOSAA	50		21.8	70.9		ng/L		94	55 - 134	3	30
NMeFOSAA	3.7		21.8	25.3		ng/L		99	59 - 140	2	30
Perfluoropentanesulfonic acid	8.6		20.4	21.5		ng/L		63	55 - 140	0	30
Perfluoroheptanesulfonic acid	3.7	I	20.7	20.4		ng/L		81	56 - 140	2	30
Perfluorononanesulfonic acid	0.42	U	20.9	19.8		ng/L		95	59 - 136	10	30
Perfluorodecanesulfonic acid	0.42	U	21.0	17.6		ng/L		84	55 - 137	8	30
Perfluorooctanesulfonamide	0.85	J	21.8	22.2		ng/L		98	43 - 167	3	30
Perfluorobutanoic acid	8.7		21.8	27.6		ng/L		87	59 - 136	1	30
Perfluoropentanoic acid	47	F1	21.8	28.4	F1	ng/L		-86	57 - 141	3	30
HFPODA	25	F1	21.8	23.6	F1	ng/L		-6	50 - 135	3	30
DONA	0.42	U	20.6	19.3		ng/L		94	55 - 143	5	30
9Cl-PF3ONS	0.42	U	20.3	20.0		ng/L		99	59 - 135	5	30
11Cl-PF3OUdS	0.42	U	20.3	15.8		ng/L		78	53 - 139	11	30
Perfluoroundecanoic acid	4.7	I	21.8	28.2	I	ng/L		108	60 - 141	4	30
Perfluorododecanoic acid	0.42	U	21.8	19.5		ng/L		89	59 - 143	1	30
8:2 Fluorotelomer sulfonic acid	0.85	U	20.9	21.7		ng/L		104	55 - 138	9	30
4:2 Fluorotelomer sulfonic acid	0.42	U	20.3	15.2		ng/L		75	55 - 139	18	30
6:2 Fluorotelomer sulfonic acid	3.6	U	20.6	17.5		ng/L		85	28 - 173	2	30
FHxSA	0.59	U F1	21.8	5.40	F1	ng/L		25	70 - 130	4	30
FBSA	0.38	J F1	21.8	9.06	F1	ng/L		40	70 - 130	4	30
Perfluoro-4-ethylcyclohexanesulfonic acid	0.50	J	20.1	17.3		ng/L		84	70 - 130	2	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
M2-4:2 FTS	*559*	*5+	*10 - 200*
M2-8:2 FTS	*276*	*5+	*33 - 200*
M2-6:2 FTS	*572*	*5+	*17 - 200*
13C5 PFHxA	*70*		*24 - 179*
13C4 PFHpA	*107*		*31 - 182*
13C8 PFOA	*99*		*48 - 162*
13C9 PFNA	*71*		*51 - 167*
13C6 PFDA	*95*		*49 - 163*
13C7 PFUnA	*92*		*34 - 174*
13C2-PFDoDA	*74*		*17 - 176*
13C2 PFTeDA	*45*		*10 - 179*
13C3 PFBS	*340*	*5+	*16 - 200*
13C3 PFHxS	*170*		*28 - 188*
13C8 PFOS	*92*		*51 - 159*
d3-NMeFOSAA	*98*		*31 - 174*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: 240-171393-2 MSD **Client Sample ID: SB11-GW (1-6)**

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

Analysis Batch: 288154 **Prep Batch: 287376**

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
d5-NEtFOSAA	*122*		*29 - 195*
13C8 FOSA	*18*		*10 - 168*
13C4 PFBA	*110*		*42 - 165*
13C5 PFPeA	*153*		*38 - 187*
13C3 HFPO-DA	*94*		*17 - 185*

Lab Sample ID: MB 410-289566/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 290065 **Prep Batch: 289566**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
NEtFOSAA	0.50	U	3.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
NMeFOSAA	0.60	U	2.0	0.60	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorodecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluoroheptanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluoroheptanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorohexanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorohexanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorodecanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorononanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorononanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorobutanoic acid	2.0	U	5.0	2.0	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorooctanesulfonamide	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorooctanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
HFPODA	1.0	U	3.0	1.0	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorooctanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
DONA	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluoropentanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
9Cl-PF3ONS	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluoropentanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
11Cl-PF3OUdS	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorotetradecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorotridecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluoroundecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluorododecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
8:2 Fluorotelomer sulfonic acid	1.0	U	3.0	1.0	ng/L		08/25/22 10:13	08/27/22 07:23	1
4:2 Fluorotelomer sulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 10:13	08/27/22 07:23	1
6:2 Fluorotelomer sulfonic acid	4.2	U	5.0	4.2	ng/L		08/25/22 10:13	08/27/22 07:23	1
FBSA	0.30	U	2.0	0.30	ng/L		08/25/22 10:13	08/27/22 07:23	1
FHxSA	0.70	U	2.0	0.70	ng/L		08/25/22 10:13	08/27/22 07:23	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.20	U	2.0	0.20	ng/L		08/25/22 10:13	08/27/22 07:23	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*163*		*10 - 200*	*08/25/22 10:13*	*08/27/22 07:23*	*1*
M2-6:2 FTS	*149*		*17 - 200*	*08/25/22 10:13*	*08/27/22 07:23*	*1*
M2-8:2 FTS	*144*		*33 - 200*	*08/25/22 10:13*	*08/27/22 07:23*	*1*
13C2 PFTeDA	*111*		*10 - 179*	*08/25/22 10:13*	*08/27/22 07:23*	*1*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-289566/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 290065 **Prep Batch: 289566**

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	127		16 - 200	08/25/22 10:13	08/27/22 07:23	1
13C4 PFHpA	122		31 - 182	08/25/22 10:13	08/27/22 07:23	1
13C8 PFOA	120		48 - 162	08/25/22 10:13	08/27/22 07:23	1
13C8 PFOS	124		51 - 159	08/25/22 10:13	08/27/22 07:23	1
d3-NMeFOSAA	115		31 - 174	08/25/22 10:13	08/27/22 07:23	1
13C4 PFBA	121		42 - 165	08/25/22 10:13	08/27/22 07:23	1
d5-NEtFOSAA	107		29 - 195	08/25/22 10:13	08/27/22 07:23	1
13C3 PFHxS	127		28 - 188	08/25/22 10:13	08/27/22 07:23	1
13C5 PFPeA	122		38 - 187	08/25/22 10:13	08/27/22 07:23	1
13C3 HFPO-DA	98		17 - 185	08/25/22 10:13	08/27/22 07:23	1
13C5 PFHxA	118		24 - 179	08/25/22 10:13	08/27/22 07:23	1
13C6 PFDA	125		49 - 163	08/25/22 10:13	08/27/22 07:23	1
13C7 PFUnA	121		34 - 174	08/25/22 10:13	08/27/22 07:23	1
13C8 FOSA	73		10 - 168	08/25/22 10:13	08/27/22 07:23	1
13C2-PFDoDA	117		17 - 176	08/25/22 10:13	08/27/22 07:23	1
13C9 PFNA	123		51 - 167	08/25/22 10:13	08/27/22 07:23	1

Lab Sample ID: LCS 410-289566/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290065 **Prep Batch: 289566**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	22.7	18.6		ng/L		82	53 - 138
NEtFOSAA	25.6	23.3		ng/L		91	55 - 134
NMeFOSAA	25.6	21.7		ng/L		85	59 - 140
Perfluorodecanoic acid	25.6	21.6		ng/L		84	56 - 138
Perfluoroheptanoic acid	25.6	19.9		ng/L		78	59 - 145
Perfluoroheptanesulfonic acid	24.4	16.3		ng/L		67	56 - 140
Perfluorohexanesulfonic acid	23.3	16.6		ng/L		71	58 - 134
Perfluorohexanoic acid	25.6	21.2		ng/L		83	58 - 139
Perfluorodecanesulfonic acid	24.7	17.0		ng/L		69	55 - 137
Perfluorononanesulfonic acid	24.6	18.1		ng/L		74	59 - 136
Perfluorononanoic acid	25.6	20.3		ng/L		79	61 - 139
Perfluorobutanoic acid	25.6	20.7		ng/L		81	59 - 136
Perfluorooctanesulfonamide	25.6	21.7		ng/L		85	43 - 167
Perfluorooctanesulfonic acid	23.7	18.5		ng/L		78	45 - 150
HFPODA	25.6	23.7		ng/L		92	50 - 135
Perfluorooctanoic acid	25.6	20.8		ng/L		81	51 - 145
DONA	24.2	19.1		ng/L		79	55 - 143
Perfluoropentanesulfonic acid	24.0	20.0		ng/L		83	55 - 140
9Cl-PF3ONS	23.8	17.2		ng/L		72	59 - 135
Perfluoropentanoic acid	25.6	21.8		ng/L		85	57 - 141
11Cl-PF3OUdS	23.8	18.7		ng/L		79	53 - 139
Perfluorotetradecanoic acid	25.6	21.8		ng/L		85	62 - 139
Perfluorotridecanoic acid	25.6	22.1		ng/L		86	58 - 146
Perfluoroundecanoic acid	25.6	21.4		ng/L		83	60 - 141
Perfluorododecanoic acid	25.6	19.4		ng/L		76	59 - 143
8:2 Fluorotelomer sulfonic acid	24.5	19.1		ng/L		78	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	20.5		ng/L		86	55 - 139

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-289566/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290065 **Prep Batch: 289566**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
6:2 Fluorotelomer sulfonic acid			24.3	20.7		ng/L		85	28 - 173		
FBSA			25.6	16.8	*-	ng/L		65	70 - 130		
FHxSA			25.6	16.4	*-	ng/L		64	70 - 130		
Perfluoro-4-ethylcyclohexanesulfonic acid			23.6	16.1	*-	ng/L		68	70 - 130		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*184*		*10 - 200*
M2-6:2 FTS	*158*		*17 - 200*
M2-8:2 FTS	*164*		*33 - 200*
13C2 PFTeDA	*128*		*10 - 179*
13C3 PFBS	*142*		*16 - 200*
13C4 PFHpA	*142*		*31 - 182*
13C8 PFOA	*135*		*48 - 162*
13C8 PFOS	*139*		*51 - 159*
d3-NMeFOSAA	*136*		*31 - 174*
13C4 PFBA	*134*		*42 - 165*
d5-NEtFOSAA	*114*		*29 - 195*
13C3 PFHxS	*153*		*28 - 188*
13C5 PFPeA	*127*		*38 - 187*
13C3 HFPO-DA	*109*		*17 - 185*
13C5 PFHxA	*133*		*24 - 179*
13C6 PFDA	*142*		*49 - 163*
13C7 PFUnA	*135*		*34 - 174*
13C8 FOSA	*113*		*10 - 168*
13C2-PFDoDA	*126*		*17 - 176*
13C9 PFNA	*132*		*51 - 167*

Lab Sample ID: MB 410-289697/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 290065 **Prep Batch: 289697**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
NEtFOSAA	0.50	U	3.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
NMeFOSAA	0.60	U	2.0	0.60	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorodecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluoroheptanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluoroheptanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorohexanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorohexanoic acid	0.554	J	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorodecanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorononanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorononanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorobutanoic acid	2.0	U	5.0	2.0	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorooctanesulfonamide	0.703	J	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorooctanesulfonic acid	0.826	J	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
HFPODA	1.0	U	3.0	1.0	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorooctanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-289697/1-A **Client Sample ID: Method Blank**

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

Analysis Batch: 290065 **Prep Batch: 289697**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
DONA	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluoropentanesulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
9Cl-PF3ONS	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluoropentanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
11Cl-PF3OUdS	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorotetradecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorotridecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluoroundecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluorododecanoic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
8:2 Fluorotelomer sulfonic acid	1.0	U	3.0	1.0	ng/L		08/25/22 15:31	08/26/22 12:54	1
4:2 Fluorotelomer sulfonic acid	0.50	U	2.0	0.50	ng/L		08/25/22 15:31	08/26/22 12:54	1
6:2 Fluorotelomer sulfonic acid	4.2	U	5.0	4.2	ng/L		08/25/22 15:31	08/26/22 12:54	1
FBSA	0.30	U	2.0	0.30	ng/L		08/25/22 15:31	08/26/22 12:54	1
FHxSA	0.70	U	2.0	0.70	ng/L		08/25/22 15:31	08/26/22 12:54	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.20	U	2.0	0.20	ng/L		08/25/22 15:31	08/26/22 12:54	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-4:2 FTS	*131*		*10 - 200*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
M2-6:2 FTS	*107*		*17 - 200*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
M2-8:2 FTS	*105*		*33 - 200*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C2 PFTeDA	*82*		*10 - 179*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C3 PFBS	*104*		*16 - 200*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C4 PFHpA	*115*		*31 - 182*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C8 PFOA	*107*		*48 - 162*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C8 PFOS	*102*		*51 - 159*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
d3-NMeFOSAA	*87*		*31 - 174*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C4 PFBA	*106*		*42 - 165*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
d5-NEtFOSAA	*77*		*29 - 195*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C3 PFHxS	*117*		*28 - 188*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C5 PFPeA	*100*		*38 - 187*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C3 HFPO-DA	*89*		*17 - 185*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C5 PFHxA	*106*		*24 - 179*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C6 PFDA	*101*		*49 - 163*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C7 PFUnA	*91*		*34 - 174*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C8 FOSA	*53*		*10 - 168*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C2-PFDoDA	*85*		*17 - 176*	*08/25/22 15:31*	*08/26/22 12:54*	*1*
13C9 PFNA	*100*		*51 - 167*	*08/25/22 15:31*	*08/26/22 12:54*	*1*

Lab Sample ID: LCS 410-289697/2-A **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 290065 **Prep Batch: 289697**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	22.7	24.6		ng/L		109	53 - 138
NEtFOSAA	25.6	27.6		ng/L		108	55 - 134
NMeFOSAA	25.6	27.3		ng/L		107	59 - 140
Perfluorodecanoic acid	25.6	25.7		ng/L		101	56 - 138
Perfluoroheptanoic acid	25.6	26.4		ng/L		103	59 - 145

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-289697/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 290065 **Prep Batch: 289697**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroheptanesulfonic acid	24.4	22.4		ng/L		92	56 - 140
Perfluorohexanesulfonic acid	23.3	22.8		ng/L		98	58 - 134
Perfluorohexanoic acid	25.6	28.6		ng/L		112	58 - 139
Perfluorodecanesulfonic acid	24.7	21.2		ng/L		86	55 - 137
Perfluorononanesulfonic acid	24.6	23.2		ng/L		94	59 - 136
Perfluorononanoic acid	25.6	26.7		ng/L		104	61 - 139
Perfluorobutanoic acid	25.6	25.9		ng/L		101	59 - 136
Perfluorooctanesulfonamide	25.6	29.0		ng/L		113	43 - 167
Perfluorooctanesulfonic acid	23.7	25.5		ng/L		107	45 - 150
HFPODA	25.6	27.9		ng/L		109	50 - 135
Perfluorooctanoic acid	25.6	27.7		ng/L		108	51 - 145
DONA	24.2	24.7		ng/L		102	55 - 143
Perfluoropentanesulfonic acid	24.0	26.0		ng/L		108	55 - 140
9Cl-PF3ONS	23.8	24.2		ng/L		102	59 - 135
Perfluoropentanoic acid	25.6	26.3		ng/L		103	57 - 141
11Cl-PF3OUdS	23.8	22.5		ng/L		94	53 - 139
Perfluorotetradecanoic acid	25.6	26.9		ng/L		105	62 - 139
Perfluorotridecanoic acid	25.6	29.4		ng/L		115	58 - 146
Perfluoroundecanoic acid	25.6	27.3		ng/L		107	60 - 141
Perfluorododecanoic acid	25.6	26.3		ng/L		103	59 - 143
8:2 Fluorotelomer sulfonic acid	24.5	22.8		ng/L		93	55 - 138
4:2 Fluorotelomer sulfonic acid	23.9	27.3		ng/L		114	55 - 139
6:2 Fluorotelomer sulfonic acid	24.3	26.7		ng/L		110	28 - 173
FBSA	25.6	19.6		ng/L		77	70 - 130
FHxSA	25.6	17.7	*-	ng/L		69	70 - 130
Perfluoro-4-ethylcyclohexanesulfonic acid	23.6	21.4		ng/L		91	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*120*		*10 - 200*
M2-6:2 FTS	*106*		*17 - 200*
M2-8:2 FTS	*112*		*33 - 200*
13C2 PFTeDA	*91*		*10 - 179*
13C3 PFBS	*103*		*16 - 200*
13C4 PFHpA	*110*		*31 - 182*
13C8 PFOA	*102*		*48 - 162*
13C8 PFOS	*109*		*51 - 159*
d3-NMeFOSAA	*95*		*31 - 174*
13C4 PFBA	*106*		*42 - 165*
d5-NEtFOSAA	*82*		*29 - 195*
13C3 PFHxS	*114*		*28 - 188*
13C5 PFPeA	*103*		*38 - 187*
13C3 HFPO-DA	*95*		*17 - 185*
13C5 PFHxA	*102*		*24 - 179*
13C6 PFDA	*107*		*49 - 163*
13C7 PFUnA	*97*		*34 - 174*
13C8 FOSA	*58*		*10 - 168*
13C2-PFDoDA	*87*		*17 - 176*
13C9 PFNA	*104*		*51 - 167*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: LCSD 410-289697/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 290065 **Prep Batch: 289697**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid			22.7	23.6		ng/L		104	53 - 138	4	30
NEtFOSAA			25.6	26.5		ng/L		103	55 - 134	4	30
NMeFOSAA			25.6	25.7		ng/L		100	59 - 140	6	30
Perfluorodecanoic acid			25.6	25.0		ng/L		98	56 - 138	3	30
Perfluoroheptanoic acid			25.6	24.4		ng/L		95	59 - 145	8	30
Perfluoroheptanesulfonic acid			24.4	21.8		ng/L		89	56 - 140	3	30
Perfluorohexanesulfonic acid			23.3	22.2		ng/L		95	58 - 134	2	30
Perfluorohexanoic acid			25.6	25.1		ng/L		98	58 - 139	13	30
Perfluorodecanesulfonic acid			24.7	19.1		ng/L		77	55 - 137	11	30
Perfluorononanesulfonic acid			24.6	22.5		ng/L		92	59 - 136	3	30
Perfluorononanoic acid			25.6	24.4		ng/L		95	61 - 139	9	30
Perfluorobutanoic acid			25.6	25.0		ng/L		98	59 - 136	4	30
Perfluorooctanesulfonamide			25.6	26.8		ng/L		105	43 - 167	8	30
Perfluorooctanesulfonic acid			23.7	22.8		ng/L		96	45 - 150	11	30
HFPODA			25.6	28.9		ng/L		113	50 - 135	4	30
Perfluorooctanoic acid			25.6	27.3		ng/L		107	51 - 145	1	30
DONA			24.2	23.1		ng/L		96	55 - 143	7	30
Perfluoropentanesulfonic acid			24.0	25.5		ng/L		106	55 - 140	2	30
9Cl-PF3ONS			23.8	21.5		ng/L		90	59 - 135	12	30
Perfluoropentanoic acid			25.6	25.6		ng/L		100	57 - 141	3	30
11Cl-PF3OUdS			23.8	20.5		ng/L		86	53 - 139	9	30
Perfluorotetradecanoic acid			25.6	26.1		ng/L		102	62 - 139	3	30
Perfluorotridecanoic acid			25.6	28.4		ng/L		111	58 - 146	4	30
Perfluoroundecanoic acid			25.6	25.7		ng/L		101	60 - 141	6	30
Perfluorododecanoic acid			25.6	25.8		ng/L		101	59 - 143	2	30
8:2 Fluorotelomer sulfonic acid			24.5	23.6		ng/L		96	55 - 138	3	30
4:2 Fluorotelomer sulfonic acid			23.9	26.1		ng/L		109	55 - 139	4	30
6:2 Fluorotelomer sulfonic acid			24.3	24.5		ng/L		101	28 - 173	8	30
FBSA			25.6	19.4		ng/L		76	70 - 130	1	30
FHxSA			25.6	18.1		ng/L		71	70 - 130	3	30
Perfluoro-4-ethylcyclohexanesulfonic acid			23.6	20.2		ng/L		85	70 - 130	6	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-4:2 FTS	*132*		*10 - 200*
M2-6:2 FTS	*120*		*17 - 200*
M2-8:2 FTS	*126*		*33 - 200*
13C2 PFTeDA	*101*		*10 - 179*
13C3 PFBS	*128*		*16 - 200*
13C4 PFHpA	*122*		*31 - 182*
13C8 PFOA	*114*		*48 - 162*
13C8 PFOS	*124*		*51 - 159*
d3-NMeFOSAA	*108*		*31 - 174*
13C4 PFBA	*125*		*42 - 165*
d5-NEtFOSAA	*96*		*29 - 195*
13C3 PFHxS	*128*		*28 - 188*
13C5 PFPeA	*124*		*38 - 187*
13C3 HFPO-DA	*96*		*17 - 185*
13C5 PFHxA	*115*		*24 - 179*

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-289697/3-A **Client Sample ID: Lab Control Sample Dup**

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

Analysis Batch: 290065 **Prep Batch: 289697**

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C6 PFDA	127		49 - 163
13C7 PFUnA	114		34 - 174
13C8 FOSA	72		10 - 168
13C2-PFDoDA	101		17 - 176
13C9 PFNA	121		51 - 167

Lab Sample ID: MB 410-292827/1-B **Client Sample ID: Method Blank**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanesulfonic acid	0.36	U	0.80	0.36	ng/g		09/06/22 07:08	09/10/22 03:32	1
NEtFOSAA	0.022	U	0.060	0.022	ng/g		09/06/22 07:08	09/10/22 03:32	1
NMeFOSAA	0.031	U	0.060	0.031	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorodecanoic acid	0.024	U	0.060	0.024	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluoroheptanoic acid	0.024	U	0.060	0.024	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluoroheptanesulfonic acid	0.020	U	0.060	0.020	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorohexanesulfonic acid	0.019	U	0.060	0.019	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorohexanoic acid	0.019	U	0.060	0.019	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorodecanesulfonic acid	0.021	U	0.060	0.021	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorononanesulfonic acid	0.022	U	0.060	0.022	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorononanoic acid	0.023	U	0.060	0.023	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorobutanoic acid	0.024	U	0.060	0.024	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorooctanesulfonamide	0.021	U	0.060	0.021	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorooctanesulfonic acid	0.035	U	0.060	0.035	ng/g		09/06/22 07:08	09/10/22 03:32	1
HFPODA	0.20	U	1.0	0.20	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorooctanoic acid	0.022	U	0.060	0.022	ng/g		09/06/22 07:08	09/10/22 03:32	1
DONA	0.022	U	0.060	0.022	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluoropentanesulfonic acid	0.022	U	0.060	0.022	ng/g		09/06/22 07:08	09/10/22 03:32	1
9Cl-PF3ONS	0.024	U	0.060	0.024	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluoropentanoic acid	0.024	U	0.060	0.024	ng/g		09/06/22 07:08	09/10/22 03:32	1
11Cl-PF3OUdS	0.022	U	0.060	0.022	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorotetradecanoic acid	0.024	U	0.060	0.024	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorotridecanoic acid	0.021	U	0.060	0.021	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluoroundecanoic acid	0.056	U	0.10	0.056	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluorododecanoic acid	0.023	U	0.060	0.023	ng/g		09/06/22 07:08	09/10/22 03:32	1
8:2 Fluorotelomer sulfonic acid	0.017	U	0.060	0.017	ng/g		09/06/22 07:08	09/10/22 03:32	1
4:2 Fluorotelomer sulfonic acid	0.017	U	0.060	0.017	ng/g		09/06/22 07:08	09/10/22 03:32	1
6:2 Fluorotelomer sulfonic acid	0.049	U	0.10	0.049	ng/g		09/06/22 07:08	09/10/22 03:32	1
FBSA	0.020	U	0.060	0.020	ng/g		09/06/22 07:08	09/10/22 03:32	1
FHxSA	0.020	U	0.060	0.020	ng/g		09/06/22 07:08	09/10/22 03:32	1
Perfluoro-4-ethylcyclohexanesulfonic acid	0.019	U	0.060	0.019	ng/g		09/06/22 07:08	09/10/22 03:32	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-4:2 FTS	105		10 - 200	09/06/22 07:08	09/10/22 03:32	1
M2-6:2 FTS	94		10 - 200	09/06/22 07:08	09/10/22 03:32	1
M2-8:2 FTS	90		15 - 200	09/06/22 07:08	09/10/22 03:32	1
13C2 PFTeDA	75		10 - 169	09/06/22 07:08	09/10/22 03:32	1

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-292827/1-B **Client Sample ID: Method Blank**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	81		27 - 179	09/06/22 07:08	09/10/22 03:32	1
13C4 PFHpA	85		10 - 178	09/06/22 07:08	09/10/22 03:32	1
13C8 PFOA	82		26 - 159	09/06/22 07:08	09/10/22 03:32	1
13C8 PFOS	91		41 - 154	09/06/22 07:08	09/10/22 03:32	1
d3-NMeFOSAA	50		10 - 178	09/06/22 07:08	09/10/22 03:32	1
13C4 PFBA	81		28 - 153	09/06/22 07:08	09/10/22 03:32	1
d5-NEtFOSAA	55		10 - 193	09/06/22 07:08	09/10/22 03:32	1
13C3 PFHxS	86		24 - 171	09/06/22 07:08	09/10/22 03:32	1
13C5 PFPeA	80		24 - 161	09/06/22 07:08	09/10/22 03:32	1
13C3 HFPO-DA	80		10 - 169	09/06/22 07:08	09/10/22 03:32	1
13C5 PFHxA	84		10 - 174	09/06/22 07:08	09/10/22 03:32	1
13C6 PFDA	79		26 - 161	09/06/22 07:08	09/10/22 03:32	1
13C7 PFUnA	87		12 - 173	09/06/22 07:08	09/10/22 03:32	1
13C8 FOSA	64		14 - 163	09/06/22 07:08	09/10/22 03:32	1
13C2-PFDoDA	81		11 - 166	09/06/22 07:08	09/10/22 03:32	1
13C9 PFNA	85		26 - 165	09/06/22 07:08	09/10/22 03:32	1

Lab Sample ID: LCS 410-292827/2-B **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid	2.21	2.16		ng/g		97	54 - 130
NEtFOSAA	2.50	2.47		ng/g		99	57 - 127
NMeFOSAA	2.50	2.41		ng/g		96	60 - 134
Perfluorodecanoic acid	2.50	2.38		ng/g		95	56 - 133
Perfluoroheptanoic acid	2.50	2.34		ng/g		94	59 - 137
Perfluoroheptanesulfonic acid	2.38	2.32		ng/g		97	59 - 132
Perfluorohexanesulfonic acid	2.28	2.13		ng/g		94	59 - 129
Perfluorohexanoic acid	2.50	2.30		ng/g		92	59 - 132
Perfluorodecanesulfonic acid	2.41	2.20		ng/g		91	57 - 132
Perfluorononanesulfonic acid	2.40	2.00		ng/g		83	60 - 132
Perfluorononanoic acid	2.50	2.33		ng/g		93	61 - 134
Perfluorobutanoic acid	2.50	2.43		ng/g		97	60 - 128
Perfluorooctanesulfonamide	2.50	2.42		ng/g		97	47 - 149
Perfluorooctanesulfonic acid	2.31	2.13		ng/g		92	61 - 126
HFPODA	2.50	2.32		ng/g		93	49 - 135
Perfluorooctanoic acid	2.50	2.30		ng/g		92	59 - 131
DONA	2.36	2.16		ng/g		91	57 - 137
Perfluoropentanesulfonic acid	2.35	2.28		ng/g		97	57 - 133
9Cl-PF3ONS	2.33	2.11		ng/g		91	62 - 130
Perfluoropentanoic acid	2.50	2.40		ng/g		96	58 - 134
11Cl-PF3OUdS	2.33	2.13		ng/g		92	55 - 135
Perfluorotetradecanoic acid	2.50	2.32		ng/g		93	62 - 134
Perfluorotridecanoic acid	2.50	2.40		ng/g		96	53 - 143
Perfluoroundecanoic acid	2.50	2.37		ng/g		95	60 - 134
Perfluorododecanoic acid	2.50	2.49		ng/g		99	60 - 135
8:2 Fluorotelomer sulfonic acid	2.40	2.20		ng/g		92	55 - 133
4:2 Fluorotelomer sulfonic acid	2.34	2.31		ng/g		99	58 - 131

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-292827/2-B **Client Sample ID: Lab Control Sample**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
6:2 Fluorotelomer sulfonic acid	2.37	2.31		ng/g		97	59 - 135
FBSA	2.50	2.25		ng/g		90	70 - 130
FHxSA	2.50	2.08		ng/g		83	70 - 130
Perfluoro-4-ethylcyclohexanesulfonic acid	2.31	2.11		ng/g		91	70 - 130

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-4:2 FTS	*113*		*10 - 200*
M2-6:2 FTS	*99*		*10 - 200*
M2-8:2 FTS	*91*		*15 - 200*
13C2 PFTeDA	*86*		*10 - 169*
13C3 PFBS	*89*		*27 - 179*
13C4 PFHpA	*91*		*10 - 178*
13C8 PFOA	*90*		*26 - 159*
13C8 PFOS	*93*		*41 - 154*
d3-NMeFOSAA	*58*		*10 - 178*
13C4 PFBA	*88*		*28 - 153*
d5-NEtFOSAA	*60*		*10 - 193*
13C3 PFHxS	*91*		*24 - 171*
13C5 PFPeA	*89*		*24 - 161*
13C3 HFPO-DA	*84*		*10 - 169*
13C5 PFHxA	*91*		*10 - 174*
13C6 PFDA	*84*		*26 - 161*
13C7 PFUnA	*93*		*12 - 173*
13C8 FOSA	*76*		*14 - 163*
13C2-PFDoDA	*84*		*11 - 166*
13C9 PFNA	*93*		*26 - 165*

Lab Sample ID: 240-171393-1 MS **Client Sample ID: SB11 (4-5)**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
11Cl-PF3OUdS	0.024	U	2.54	2.37		ng/g	☼	93	55 - 135
4:2 Fluorotelomer sulfonic acid	0.019	U	2.55	2.57		ng/g	☼	101	58 - 131
6:2 Fluorotelomer sulfonic acid	0.054	U	2.59	2.57		ng/g	☼	99	59 - 135
8:2 Fluorotelomer sulfonic acid	0.019	U	2.62	2.60		ng/g	☼	99	55 - 133
9Cl-PF3ONS	0.026	U	2.54	2.33		ng/g	☼	91	62 - 130
DONA	0.024	U	2.58	2.40		ng/g	☼	93	57 - 137
HFPODA	0.22	U	2.73	2.85		ng/g	☼	104	49 - 135
NEtFOSAA	0.28		2.73	2.73		ng/g	☼	90	57 - 127
NMeFOSAA	0.034	U	2.73	2.73		ng/g	☼	100	60 - 134
Perfluorobutanesulfonic acid	0.40	U	2.42	2.42		ng/g	☼	100	54 - 130
Perfluorobutanoic acid	0.026	U	2.73	2.74		ng/g	☼	100	60 - 128
Perfluorodecanesulfonic acid	0.023	U	2.64	2.42		ng/g	☼	92	57 - 132
Perfluorodecanoic acid	0.026	U	2.73	2.59		ng/g	☼	95	56 - 133
Perfluorododecanoic acid	0.025	U	2.73	2.64		ng/g	☼	97	60 - 135
Perfluoroheptanesulfonic acid	0.022	U	2.60	2.56		ng/g	☼	98	59 - 132
Perfluoroheptanoic acid	0.026	U	2.73	2.67		ng/g	☼	98	59 - 137

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: 240-171393-1 MS **Client Sample ID: SB11 (4-5)**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorohexanesulfonic acid	0.021	U	2.49	2.30		ng/g	☼	92	59 - 129
Perfluorohexanoic acid	0.028	J	2.73	2.72		ng/g	☼	98	59 - 132
Perfluorononanesulfonic acid	0.024	U	2.62	2.27		ng/g	☼	86	60 - 132
Perfluorononanoic acid	0.025	U	2.73	2.58		ng/g	☼	94	61 - 134
Perfluorooctanesulfonamide	0.023	U	2.73	2.77		ng/g	☼	101	47 - 149
Perfluorooctanesulfonic acid	0.14		2.53	2.39		ng/g	☼	89	61 - 126
Perfluorooctanoic acid	0.059	J	2.73	2.69		ng/g	☼	96	59 - 131
Perfluoropentanesulfonic acid	0.024	U	2.56	2.57		ng/g	☼	100	57 - 133
Perfluoropentanoic acid	0.026	U	2.73	2.67		ng/g	☼	98	58 - 134
Perfluorotetradecanoic acid	0.026	U	2.73	2.67		ng/g	☼	98	62 - 134
Perfluorotridecanoic acid	0.023	U	2.73	2.61		ng/g	☼	96	53 - 143
Perfluoroundecanoic acid	0.061	U	2.73	2.63		ng/g	☼	96	60 - 134
Perfluoro-4-ethylcyclohexanesulfonic acid	0.021	U	2.52	2.30		ng/g	☼	91	70 - 130
FBSA	0.022	U F2 F1	2.73	2.27		ng/g	☼	83	70 - 130
FHxSA	0.022	U F2 F1	2.73	1.83	F1	ng/g	☼	67	70 - 130

Isotope Dilution	*MS %Recovery*	*MS Qualifier*	*Limits*
M2-4:2 FTS	*149*		*10 - 200*
M2-6:2 FTS	*124*		*10 - 200*
M2-8:2 FTS	*115*		*15 - 200*
13C2 PFTeDA	*81*		*10 - 169*
13C3 HFPO-DA	*68*		*10 - 169*
13C3 PFBS	*89*		*27 - 179*
13C4 PFBA	*82*		*28 - 153*
13C4 PFHpA	*81*		*10 - 178*
13C5 PFPeA	*83*		*24 - 161*
13C8 PFOA	*84*		*26 - 159*
13C8 PFOS	*90*		*41 - 154*
d3-NMeFOSAA	*61*		*10 - 178*
d5-NEtFOSAA	*67*		*10 - 193*
13C3 PFHxS	*87*		*24 - 171*
13C5 PFHxA	*80*		*10 - 174*
13C6 PFDA	*85*		*26 - 161*
13C7 PFUnA	*90*		*12 - 173*
13C8 FOSA	*51*		*14 - 163*
13C2-PFDoDA	*84*		*11 - 166*
13C9 PFNA	*90*		*26 - 165*

Lab Sample ID: 240-171393-1 MSD **Client Sample ID: SB11 (4-5)**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11Cl-PF3OUdS	0.024	U	2.55	2.39		ng/g	☼	94	55 - 135	1	30
4:2 Fluorotelomer sulfonic acid	0.019	U	2.56	2.46		ng/g	☼	96	58 - 131	4	30
6:2 Fluorotelomer sulfonic acid	0.054	U	2.60	2.40		ng/g	☼	92	59 - 135	7	30
8:2 Fluorotelomer sulfonic acid	0.019	U	2.63	2.41		ng/g	☼	92	55 - 133	8	30
9Cl-PF3ONS	0.026	U	2.55	2.40		ng/g	☼	94	62 - 130	3	30

QC Sample Results

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: 240-171393-1 MSD **Client Sample ID: SB11 (4-5)**

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

Analysis Batch: 294366 **Prep Batch: 292827**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
DONA	0.024	U	2.59	2.32		ng/g	☼	90	57 - 137	3	30
HFPODA	0.22	U	2.74	3.08		ng/g	☼	112	49 - 135	8	30
NEtFOSAA	0.28		2.74	2.83		ng/g	☼	93	57 - 127	3	30
NMeFOSAA	0.034	U	2.74	2.71		ng/g	☼	99	60 - 134	1	30
Perfluorobutanesulfonic acid	0.40	U	2.43	2.42		ng/g	☼	100	54 - 130	0	30
Perfluorobutanoic acid	0.026	U	2.74	2.77		ng/g	☼	101	60 - 128	1	30
Perfluorodecanesulfonic acid	0.023	U	2.64	2.61		ng/g	☼	99	57 - 132	8	30
Perfluorodecanoic acid	0.026	U	2.74	2.65		ng/g	☼	96	56 - 133	2	30
Perfluorododecanoic acid	0.025	U	2.74	2.61		ng/g	☼	95	60 - 135	1	30
Perfluoroheptanesulfonic acid	0.022	U	2.61	2.59		ng/g	☼	99	59 - 132	1	30
Perfluoroheptanoic acid	0.026	U	2.74	2.69		ng/g	☼	98	59 - 137	1	30
Perfluorohexanesulfonic acid	0.021	U	2.50	2.32		ng/g	☼	93	59 - 129	1	30
Perfluorohexanoic acid	0.028	J	2.74	2.81		ng/g	☼	101	59 - 132	3	30
Perfluorononanesulfonic acid	0.024	U	2.63	2.35		ng/g	☼	89	60 - 132	4	30
Perfluorononanoic acid	0.025	U	2.74	2.54		ng/g	☼	93	61 - 134	1	30
Perfluorooctanesulfonamide	0.023	U	2.74	2.82		ng/g	☼	103	47 - 149	2	30
Perfluorooctanesulfonic acid	0.14		2.54	2.97		ng/g	☼	112	61 - 126	22	30
Perfluorooctanoic acid	0.059	J	2.74	2.93		ng/g	☼	105	59 - 131	8	30
Perfluoropentanesulfonic acid	0.024	U	2.57	2.54		ng/g	☼	99	57 - 133	1	30
Perfluoropentanoic acid	0.026	U	2.74	2.55		ng/g	☼	93	58 - 134	5	30
Perfluorotetradecanoic acid	0.026	U	2.74	2.64		ng/g	☼	96	62 - 134	1	30
Perfluorotridecanoic acid	0.023	U	2.74	2.59		ng/g	☼	94	53 - 143	1	30
Perfluoroundecanoic acid	0.061	U	2.74	2.72		ng/g	☼	99	60 - 134	3	30
Perfluoro-4-ethylcyclohexanesulfonic acid	0.021	U	2.53	2.20		ng/g	☼	87	70 - 130	5	30
FBSA	0.022	U F2 F1	2.74	1.58	F2 F1	ng/g	☼	57	70 - 130	36	30
FHxSA	0.022	U F2 F1	2.74	0.924	F2 F1	ng/g	☼	34	70 - 130	66	30

Isotope Dilution	*MSD %Recovery*	*MSD Qualifier*	*Limits*
M2-4:2 FTS	*241*	*5+	*10 - 200*
M2-6:2 FTS	*188*		*10 - 200*
M2-8:2 FTS	*143*		*15 - 200*
13C2 PFTeDA	*71*		*10 - 169*
13C3 HFPO-DA	*56*		*10 - 169*
13C3 PFBS	*86*		*27 - 179*
13C4 PFBA	*72*		*28 - 153*
13C4 PFHpA	*71*		*10 - 178*
13C5 PFPeA	*75*		*24 - 161*
13C8 PFOA	*72*		*26 - 159*
13C8 PFOS	*80*		*41 - 154*
d3-NMeFOSAA	*63*		*10 - 178*
d5-NEtFOSAA	*68*		*10 - 193*
13C3 PFHxS	*80*		*24 - 171*
13C5 PFHxA	*67*		*10 - 174*
13C6 PFDA	*74*		*26 - 161*
13C7 PFUnA	*78*		*12 - 173*
13C8 FOSA	*30*		*14 - 163*
13C2-PFDoDA	*73*		*11 - 166*
13C9 PFNA	*82*		*26 - 165*

QC Association Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

LCMS

Prep Batch: 286858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-3	FB1	Total/NA	Water	537 IDA	
240-171393-4	FB2	Total/NA	Water	537 IDA	
240-171393-7	Trip Blank	Total/NA	Water	537 IDA	
MB 410-286858/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-286858/2-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-286858/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

Prep Batch: 287250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-6	GW Dup	Total/NA	Water	537 IDA	
MB 410-287250/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-287250/3-A	Lab Control Sample	Total/NA	Water	537 IDA	

Prep Batch: 287376

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-2	SB11-GW (1-6)	Total/NA	Water	537 IDA	
MB 410-287376/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-287376/2-A	Lab Control Sample	Total/NA	Water	537 IDA	
240-171393-2 MS	SB11-GW (1-6)	Total/NA	Water	537 IDA	
240-171393-2 MSD	SB11-GW (1-6)	Total/NA	Water	537 IDA	

Analysis Batch: 288154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-2	SB11-GW (1-6)	Total/NA	Water	537 IDA	287376
MB 410-287376/1-A	Method Blank	Total/NA	Water	537 IDA	287376
LCS 410-287376/2-A	Lab Control Sample	Total/NA	Water	537 IDA	287376
240-171393-2 MS	SB11-GW (1-6)	Total/NA	Water	537 IDA	287376
240-171393-2 MSD	SB11-GW (1-6)	Total/NA	Water	537 IDA	287376

Analysis Batch: 288173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-287250/1-A	Method Blank	Total/NA	Water	537 IDA	287250
LCS 410-287250/3-A	Lab Control Sample	Total/NA	Water	537 IDA	287250

Prep Batch: 289566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-6 - RE	GW Dup	Total/NA	Water	537 IDA	
MB 410-289566/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-289566/2-A	Lab Control Sample	Total/NA	Water	537 IDA	

Prep Batch: 289697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-4 - RE	FB2	Total/NA	Water	537 IDA	
MB 410-289697/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-289697/2-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-289697/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

Analysis Batch: 290065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-3	FB1	Total/NA	Water	537 IDA	286858
240-171393-4 - RE	FB2	Total/NA	Water	537 IDA	289697

QC Association Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1
Project/Site: Former Harbor Beach Dump - 088212.00

LCMS (Continued)

Analysis Batch: 290065 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-4	FB2	Total/NA	Water	537 IDA	286858
240-171393-6 - RE	GW Dup	Total/NA	Water	537 IDA	289566
240-171393-7	Trip Blank	Total/NA	Water	537 IDA	286858
MB 410-289566/1-A	Method Blank	Total/NA	Water	537 IDA	289566
MB 410-289697/1-A	Method Blank	Total/NA	Water	537 IDA	289697
LCS 410-286858/2-A	Lab Control Sample	Total/NA	Water	537 IDA	286858
LCS 410-289566/2-A	Lab Control Sample	Total/NA	Water	537 IDA	289566
LCS 410-289697/2-A	Lab Control Sample	Total/NA	Water	537 IDA	289697
LCSD 410-286858/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	286858
LCSD 410-289697/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	289697

Analysis Batch: 290529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-6	GW Dup	Total/NA	Water	537 IDA	287250
MB 410-286858/1-A	Method Blank	Total/NA	Water	537 IDA	286858
MB 410-287250/1-A	Method Blank	Total/NA	Water	537 IDA	287250
LCS 410-287250/3-A	Lab Control Sample	Total/NA	Water	537 IDA	287250

Prep Batch: 292827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-1	SB11 (4-5)	Total/NA	Solid	SHAKE	
240-171393-5	Soil Dup	Total/NA	Solid	SHAKE	
MB 410-292827/1-B	Method Blank	Total/NA	Solid	SHAKE	
LCS 410-292827/2-B	Lab Control Sample	Total/NA	Solid	SHAKE	
240-171393-1 MS	SB11 (4-5)	Total/NA	Solid	SHAKE	
240-171393-1 MSD	SB11 (4-5)	Total/NA	Solid	SHAKE	

Cleanup Batch: 293652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-1	SB11 (4-5)	Total/NA	Solid	Extract Aliquot	292827
240-171393-5	Soil Dup	Total/NA	Solid	Extract Aliquot	292827
MB 410-292827/1-B	Method Blank	Total/NA	Solid	Extract Aliquot	292827
LCS 410-292827/2-B	Lab Control Sample	Total/NA	Solid	Extract Aliquot	292827
240-171393-1 MS	SB11 (4-5)	Total/NA	Solid	Extract Aliquot	292827
240-171393-1 MSD	SB11 (4-5)	Total/NA	Solid	Extract Aliquot	292827

Analysis Batch: 294366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-1	SB11 (4-5)	Total/NA	Solid	537 IDA	293652
240-171393-5	Soil Dup	Total/NA	Solid	537 IDA	293652
MB 410-292827/1-B	Method Blank	Total/NA	Solid	537 IDA	293652
LCS 410-292827/2-B	Lab Control Sample	Total/NA	Solid	537 IDA	293652
240-171393-1 MS	SB11 (4-5)	Total/NA	Solid	537 IDA	293652
240-171393-1 MSD	SB11 (4-5)	Total/NA	Solid	537 IDA	293652

General Chemistry

Analysis Batch: 286441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-1	SB11 (4-5)	Total/NA	Solid	Moisture	

QC Association Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

General Chemistry

Analysis Batch: 286856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-171393-5	Soil Dup	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: SB11 (4-5) Lab Sample ID: 240-171393-1

Date Collected: 08/09/22 11:10 **Matrix: Solid**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	286441	X4C8	ELLE	08/16/22 10:11

Client Sample ID: SB11 (4-5) Lab Sample ID: 240-171393-1

Date Collected: 08/09/22 11:10 **Matrix: Solid**

Date Received: 08/11/22 09:30 **Percent Solids: 90.5**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			292827	PR5J	ELLE	09/06/22 07:08
Total/NA	Cleanup	Extract Aliquot			293652	X5YV	ELLE	09/07/22 20:54
Total/NA	Analysis	537 IDA		1	294366	MT26	ELLE	09/10/22 03:55

Client Sample ID: SB11-GW (1-6) Lab Sample ID: 240-171393-2

Date Collected: 08/09/22 11:20 **Matrix: Water**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537 IDA			287376	D5VP	ELLE	08/18/22 10:31
Total/NA	Analysis	537 IDA		1	288154	DTA4	ELLE	08/21/22 22:35

Client Sample ID: FB1 Lab Sample ID: 240-171393-3

Date Collected: 08/09/22 15:25 **Matrix: Water**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537 IDA			286858	PMS9	ELLE	08/17/22 08:58
Total/NA	Analysis	537 IDA		1	290065	PY4D	ELLE	08/26/22 20:40

Client Sample ID: FB2 Lab Sample ID: 240-171393-4

Date Collected: 08/09/22 15:30 **Matrix: Water**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537 IDA	RE		289697	JU9U	ELLE	08/25/22 15:31
Total/NA	Analysis	537 IDA	RE	1	290065	PY4D	ELLE	08/26/22 14:01
Total/NA	Prep	537 IDA			286858	PMS9	ELLE	08/17/22 08:58
Total/NA	Analysis	537 IDA		1	290065	PY4D	ELLE	08/26/22 20:51

Client Sample ID: Soil Dup Lab Sample ID: 240-171393-5

Date Collected: 08/09/22 00:00 **Matrix: Solid**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	286856	UVJN	ELLE	08/17/22 08:52

Lab Chronicle

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Client Sample ID: Soil Dup — Lab Sample ID: 240-171393-5

Date Collected: 08/09/22 00:00 — **Matrix: Solid**

Date Received: 08/11/22 09:30 — **Percent Solids: 79.8**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			292827	PR5J	ELLE	09/06/22 07:08
Total/NA	Cleanup	Extract Aliquot			293652	X5YV	ELLE	09/07/22 20:54
Total/NA	Analysis	537 IDA		1	294366	MT26	ELLE	09/10/22 04:28

Client Sample ID: GW Dup — Lab Sample ID: 240-171393-6

Date Collected: 08/09/22 00:00 — **Matrix: Water**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537 IDA	RE		289566	D5VP	ELLE	08/25/22 10:13
Total/NA	Analysis	537 IDA	RE	1	290065	PY4D	ELLE	08/27/22 07:45
Total/NA	Prep	537 IDA			287250	M4QQ	ELLE	08/18/22 07:33
Total/NA	Analysis	537 IDA		1	290529	PY4D	ELLE	08/29/22 19:13

Client Sample ID: Trip Blank — Lab Sample ID: 240-171393-7

Date Collected: 08/09/22 00:00 — **Matrix: Water**

Date Received: 08/11/22 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	537 IDA			286858	PMS9	ELLE	08/17/22 08:58
Total/NA	Analysis	537 IDA		1	290065	PY4D	ELLE	08/26/22 21:02

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	11-30-22
A2LA	ISO/IEC 17025	0001.01	11-30-22
Alaska	State	PA00009	07-01-23
Alaska (UST)	State	17-027	02-28-23
Arizona	State	AZ0780	03-12-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	11-30-22
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	06-30-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-31-23
Delaware (DW)	State	N/A	01-31-23
Florida	NELAP	E87997	06-30-23
Georgia (DW)	State	C048	01-31-23
Hawaii	State	N/A	01-31-23
Illinois	NELAP	200027	01-31-23
Iowa	State	361	03-02-22 *
Kansas	NELAP	E-10151	10-31-22
Kentucky (DW)	State	KY90088	12-31-22
Kentucky (UST)	State	1.01	11-30-22
Kentucky (WW)	State	KY90088	01-01-23
Louisiana	NELAP	02055	06-30-23
Maine	State	2019012	03-12-23
Maryland	State	100	06-30-23
Massachusetts	State	M-PA009	09-14-22
Michigan	State	9930	01-31-23
Minnesota	NELAP	042-999-487	12-31-22
Mississippi	State	022	01-31-23
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-23
Montana (UST)	State	<cert No.>	02-01-23
Nebraska	State	NE-OS-32-17	01-31-23
New Hampshire	NELAP	2730	01-10-23
New Jersey	NELAP	PA011	06-30-23
New York	NELAP	10670	04-01-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	12-31-22
North Dakota	State	R-205	01-31-23
Oklahoma	NELAP	R-205	08-31-22 *
Oregon	NELAP	PA200001	09-11-22
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-31-23
Rhode Island	State	LAO00338	12-30-22
South Carolina	State	89002	01-31-23
Tennessee	State	02838	01-31-23
Texas	NELAP	T104704194-22-43	08-31-23
USDA	US Federal Programs	P330-19-00197	08-09-23
Vermont	State	VT - 36037	10-28-22
Virginia	NELAP	460182	06-15-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Canton

Accreditation/Certification Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	055	10-31-22
Wyoming	State	8TMS-L	01-31-23
Wyoming (UST)	A2LA	1.01	11-30-22

MICHIGAN 190 Chain of Custody Record 566450 ;;eurofins

Environment Testing TestAmerica

TAL-8210

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Company Name: S ...-1,'E Client Contact
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Project Manager: Tel/Email: Lab Contact: Site Contact: Lab Contact: Ji. Carrier: Date: 8/lu/zz. COC No: W. -lq <J Cocs, S749. J

Analysis Turnaround Time
[J CALENDAR DAYS [7 WORKING DAYS
TAT if different from Below 5,'-k,.,,J4_rc.J..
2 weeks
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Sampler: A,f.,,/4 ?,./,-.,.n (?,..1
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job/ SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Gr,b)	Matrix	# of Cont.	Sample Specific Notes:
• S?il { Y --S")	?Jq/zz	\ \. lO	G	S	'1	
fl 5?1 l rL,-rr MS		I I: lO	{ '1	S	-2	
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c;?11 - 6w (I - b)		11:w	I,	vJ	2	
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Preservation Used: 1= Ice, 2= HCl; 3= H2S04; 4=HN03; 5=NaOH; Sc Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample m the Comments Section if the lab is to dispose of the sample.

I)(Non-Hazard LJ Flammable CJSkin Irr?ant C Poison B ' I Unknown

Sample Disposal (**A fee may be assessed if samples are retained longer than 1** month)

C Return to Oient ?isposal by Lab I Archive for _____ Months

Splecial InsIructIonsjQC Requirements & Comments:

Custody Seals Intact: f-] Yes LJ No
Custody Seal No.:
ICooler Temp. ("C): 0bs'd: Corr'd: Therm ID No..

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
'v. --\.{.;.o,Jrl?r-.,.,t')_,.<L .\ M1.alci \wll'l\u. / ?-- ? fz,r	SM?	"11/9/Z\ 1&:<.0	"> /A? C..OS.. <.-\..r-.-e	'?"'-"-?	zrJ..h1 I 'if: -.:,v
s/Ylc C...Jcl... S/.,,'".::7e.	;;;· AA.?	C)A?/U. /t,;.,'i	-cd? in abo??/_ '???--? ---	c?f:-fk V'?S	?/i,/L"L. /(,:.OW DWfltzO_ 9,- 10

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9/13/2022

Eurofms - Canton Sample Receipt Form/Narrative **Login#** _____

Barbert n Facility

Client SME Site Name _____ Cooler unpacked by: Charlie

Cooler Received on 8/11/22 Opened on 8/11/22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time _____ Stora e Location

Eurofins Cooler# ----.....---- Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam '.□ None Other _____

COOLANT: □ Blue Ice Dry Ice Water· None

I. Cooler temperature upon receipt D Sec Multiple Cooler Fonn

IR GUN# IR□l3 (CF +0.7 °C) Observed Cooler Temp. °C Corrected CoolerTemp. □ °C

IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp."$ J °C Corrected Cooler Temp. J.J °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____ □ No

-Were the. seals on the outside of the cooler(s) signed & dated? YICV□ NA

-Were-tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes

-Were tamper/custody seals intact and uncompromised? □ No NA

3. Shippers' packing slip attached to the cooler(s)? □ No

4. Did custody papers accompany the sample(s)? M No

5. Were the custody papers relinquished & signed in the appropriate place? No

6. Was/were the person(s) who collected the samples clearly identified on the COC? No

7. Did all bottles arrive in good condition (Unbroken}□ No

8. Could all bottle labels (ID/Date/fime) be reconciled with the COC? No

9. For each sample, does the COC specify preservatives□.# of containersqy)N), and sample type of grab/co□)?

10. Were correct bottle(s) used for the test(s) indicated? □ No

11. Sufficient quantity received to perform indicated analyses? □ No

12. Are these work share samples and all listed on the COC? Yes <@

If yes, Questions 13-17 have bee□ checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes□ NA pH Strip Lot# **HC286797**

14. Were VOAs on the COC? Yes□

15. Were air bubbles >6 mm in any VOA vials? - +- Larger than this. Yes □ NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot#_____ Yes □

17. Was a LL Hg or Me Hg trip blank present? _____ Yes @

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Conce□g---------□-----'----------=----------

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES D additional next page Samples p r o c essed by:

19. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s)- □ _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Dateffime VOAs Frozen: _____

aroflns-C ·=m1tm1.----------

180S. Van Buren Avenue
Barberton. OH 44203
Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

eurofins Environment TesHn1 America

Client Information (Sub Contract Lab)	Sampler.	Lab PM: Brooks, Kris M	Canier Tracking No(s):	COCNo: 240-155929.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Kris.Brooks@et.eurofinsus.com	State of Origin: Michigan	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm		Accradltatoon, Required (See note):		Job#: 240-171393-1
Address: 2425 New Holland Pike,	Due Date Requested: 8/3112022			
City: Lancaster	TAT Requested (day1):			
State, Zip: PA, 17601				
Phone: 717-656-2300(Tel)	PO#: WO#:			
Email:				
Project Name: Former Harbor Beach Dump - 088212.00	Project#: 24029668			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A-HCL -NaOH C - Zn Acetate D • Nitric Acid E-NaHS04 F-MaOH G-Amchlor H-Ascorbic Acid I-Ice J. 01 Water K-EOTA L-EOA Other: M - Hexane N - None O-AsNa02 P-Na204S a. Na2s03 R-Na2S203 S • H2S04 T - TSP Dodecah)'drale U-Acetone V-MCAA W-pH4-5 Y-Trizrna Z - otllet (speeify)

Samole Identification - Cllent ID (Lab IOI	Samole Date	Sample Time	Sample Type (C=comp, G=orabl	Preservation Code:														Spacial Instructions/Note:
SB11 (4-5) (240-171393-1)	8/9/22	11:10		Solid		X	X										X 6	
5011 (4-5) (240-171393-1MS)	8/9122	11:10	MS	Solid		X	X										1	
5B11 (4-5)(240-171393-1MSD)	8/9/22	11:10	MSD	Solid		X	X										1	
S011-GW (1-6) (240-171393-2)	8/9/22	11:20		Water				X									8	
FB1 (240-171393-3)	8/9/22	15:25		Water				X									2	
FB2 (240-171393-4)	819/22	15:30		Water				X									2	
Soil Oup (240-171393-5)	819122	Eastern		Solid		X	X										2	
GW Oup (240-171393-6)	8/9/22	Eastern		Water				X									2	
Trip Blank (240-171393-7)	8/9/22	Eastern		Water				X									2	

Nole: Since laborato,y accradilattons 11111 subject tc change, Eumfr11 Envircnment Testing North Central, LLC places the ownership DIrnelllod, analy\o & accredilalion c:omplianca upon out sullconltlct laboratories. This sample shipment Is fOMalded under chain-of-custody. If Ille laborato,y does not cumintly maintain accreditation In Ille State DIOrigin listed abcva fer analyslslles\slmatrlx being analyzad, the samples rrust be shippedback tc the Eumfins Environment Testing Nor1h Central, LLC laboratory cr clhe< Instructions wll be provided. Atty changes 10 accrad•alion status should be brought to Eurcfins Environment Testing North Central, LLC attention immediately. If ell requested accrecmations are currant to date, retum the signed Chain cf Custody auesting to said complicance 10 Eurcf,ns Environment Te,ting North Central, LLC.

Possible Hazard Identiffcatlon	*Sd/e Disposal (A fee may be assessed If samples are retained longer than 1 month)*
Unconfirmed	*Retum To Client* D *Disposal By Lab* ☐ *Archive For* *Months*
Deliverable Requested; I, II, Ill, IV,Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquish•d by:	Date: Time: Method of Shipment:

Re,lr"iri !otby:	Date/Time:	Company	Received by:	Date/limo:	Company
Relinquished by:	Date/Time:	Company	Received by.	DatefTimA:	Com pany
Relnquished by:	Date/Time:	ColTl)any	Received by:		Com,:uvr
Custody Seals Intact: ,1 Yes ,1 No	!Custody Seal No.:		Cooler Temperature(s) 'C and Oilier Rema/ks:		

Login Sample Receipt Checklist

Client: Soil and Materials Engineers, Inc.

Job Number: 240-171393-1

Login Number: 171393
List Number: 2
Creator: Ballard, Megan

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 08/12/22 02:30 PM

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	True	

Isotope Dilution Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M242FTS (10-200)	M262FTS (10-200)	M282FTS (15-200)	PFTDA (10-169)	HFPODA (10-169)	C3PFBS (27-179)	PFBA (28-153)	C4PFHA (10-178)
240-171393-1	SB11 (4-5)	172	161	156	74	76	83	77	79
240-171393-1 MS	SB11 (4-5)	149	124	115	81	68	89	82	81
240-171393-1 MSD	SB11 (4-5)	241 *5+	188	143	71	56	86	72	71
240-171393-5	Soil Dup	127	112	100	72	82	82	74	82
LCS 410-292827/2-B	Lab Control Sample	113	99	91	86	84	89	88	91
MB 410-292827/1-B	Method Blank	105	94	90	75	80	81	81	85

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFPeA (24-161)	C8PFOA (26-159)	C8PFOS (41-154)	d3NMFOS (10-178)	d5NEFOS (10-193)	C3PFHS (24-171)	13C5PHA (10-174)	C6PFDA (26-161)
240-171393-1	SB11 (4-5)	77	81	86	64	73	84	77	81
240-171393-1 MS	SB11 (4-5)	83	84	90	61	67	87	80	85
240-171393-1 MSD	SB11 (4-5)	75	72	80	63	68	80	67	74
240-171393-5	Soil Dup	75	76	83	22	28	90	78	73
LCS 410-292827/2-B	Lab Control Sample	89	90	93	58	60	91	91	84
MB 410-292827/1-B	Method Blank	80	82	91	50	55	86	84	79

		Percent Isotope Dilution Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	13C7PUA (12-173)	PFOSA (14-163)	PFDoDA (11-166)	C9PFNA (26-165)
240-171393-1	SB11 (4-5)	81	43	74	86
240-171393-1 MS	SB11 (4-5)	90	51	84	90
240-171393-1 MSD	SB11 (4-5)	78	30	73	82
240-171393-5	Soil Dup	82	56	73	76
LCS 410-292827/2-B	Lab Control Sample	93	76	84	93
MB 410-292827/1-B	Method Blank	87	64	81	85

Surrogate Legend

M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
PFTDA = 13C2 PFTeDA
HFPODA = 13C3 HFPO-DA
C3PFBS = 13C3 PFBS
PFBA = 13C4 PFBA
C4PFHA = 13C4 PFHpA
PFPeA = 13C5 PFPeA
C8PFOA = 13C8 PFOA
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
C3PFHS = 13C3 PFHxS
13C5PHA = 13C5 PFHxA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFOSA = 13C8 FOSA
PFDoDA = 13C2-PFDoDA
C9PFNA = 13C9 PFNA

Isotope Dilution Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M242FTS	M282FTS	M262FTS	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA
Lab Sample ID	Client Sample ID	(10-200)	(33-200)	(17-200)	(24-179)	(31-182)	(48-162)	(51-167)	(49-163)
240-171393-2	SB11-GW (1-6)	431 *5+	305 *5+	619 *5+	69	107	98	67	104
240-171393-2 MS	SB11-GW (1-6)	475 *5+	284 *5+	563 *5+	69	107	98	76	104
240-171393-2 MSD	SB11-GW (1-6)	559 *5+	276 *5+	572 *5+	70	107	99	71	95
240-171393-3	FB1	245 *5+	151	193	142	149	130	111	122
240-171393-4	FB2	203 *5+	148	176	127	146	123	118	123
240-171393-4 - RE	FB2	147	116	119	107	123	109	114	111
240-171393-6 - RE	GW Dup	327 *5+	249 *5+	392 *5+	80	114	99	104	121
240-171393-6	GW Dup	309 *5+	199	338 *5+	76	102	93	92	98
240-171393-7	Trip Blank	191	136	161	140	114	129	126	131
LCS 410-286858/2-A	Lab Control Sample	528 *5+	284 *5+	412 *5+	184 *5+	173	155	101	146
LCS 410-287250/3-A	Lab Control Sample	85	91	85	89	91	92	95	100
LCS 410-287250/3-A	Lab Control Sample	126	117	122	96	102	100	105	105
LCS 410-287376/2-A	Lab Control Sample	116	104	126	102	112	110	112	107
LCS 410-289566/2-A	Lab Control Sample	184	164	158	133	142	135	132	142
LCS 410-289697/2-A	Lab Control Sample	120	112	106	102	110	102	104	107
LCSD 410-286858/3-A	Lab Control Sample Dup	341 *5+	171	221 *5+	123	130	117	94	113
LCSD 410-289697/3-A	Lab Control Sample Dup	132	126	120	115	122	114	121	127
MB 410-286858/1-A	Method Blank	214 *5+	184	193	144	142	123	74	116
MB 410-287250/1-A	Method Blank	92	75	85	89	92	85	86	87
MB 410-287250/1-A	Method Blank	157	126	150	117	126	124	129	119
MB 410-287376/1-A	Method Blank	101	100	94	85	99	93	96	91
MB 410-289566/1-A	Method Blank	163	144	149	118	122	120	123	125
MB 410-289697/1-A	Method Blank	131	105	107	106	115	107	100	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		13C7PUA	PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(34-174)	(17-176)	(10-179)	(16-200)	(28-188)	(51-159)	(31-174)	(29-195)
240-171393-2	SB11-GW (1-6)	108	78	47	328 *5+	161	90	105	135
240-171393-2 MS	SB11-GW (1-6)	93	73	27	329 *5+	174	97	101	127
240-171393-2 MSD	SB11-GW (1-6)	92	74	45	340 *5+	170	92	98	122
240-171393-3	FB1	119	109	111	129	163	125	77	73
240-171393-4	FB2	121	121	109	127	151	129	87	80
240-171393-4 - RE	FB2	103	95	92	112	126	110	94	84
240-171393-6 - RE	GW Dup	140	106	115	280 *5+	169	124	111	143
240-171393-6	GW Dup	108	70	7 *5-	344 *5+	152	95	89	108
240-171393-7	Trip Blank	118	115	115	120	139	128	96	84
LCS 410-286858/2-A	Lab Control Sample	131	131	145	154	213 *5+	146	70	67
LCS 410-287250/3-A	Lab Control Sample	96	92	99	91	94	93	94	97
LCS 410-287250/3-A	Lab Control Sample	104	99	94	99	111	102	90	90
LCS 410-287376/2-A	Lab Control Sample	98	101	88	102	115	115	105	104
LCS 410-289566/2-A	Lab Control Sample	135	126	128	142	153	139	136	114
LCS 410-289697/2-A	Lab Control Sample	97	87	91	103	114	109	95	82
LCSD 410-286858/3-A	Lab Control Sample Dup	106	110	114	118	159	118	67	63
LCSD 410-289697/3-A	Lab Control Sample Dup	114	101	101	128	128	124	108	96
MB 410-286858/1-A	Method Blank	99	92	108	111	167	115	91	82
MB 410-287250/1-A	Method Blank	86	88	87	90	89	86	84	82
MB 410-287250/1-A	Method Blank	113	103	104	113	129	121	101	100
MB 410-287376/1-A	Method Blank	95	92	84	88	95	99	94	93
MB 410-289566/1-A	Method Blank	121	117	111	127	127	124	115	107
MB 410-289697/1-A	Method Blank	91	85	82	104	117	102	87	77

Isotope Dilution Summary

Client: Soil and Materials Engineers, Inc. Job ID: 240-171393-1

Project/Site: Former Harbor Beach Dump - 088212.00

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

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

		Percent Isotope Dilution Recovery (Acceptance Limits)			
		PFOSA	PFBA	PFPeA	HFPODA
Lab Sample ID	Client Sample ID	(10-168)	(42-165)	(38-187)	(17-185)
240-171393-2	SB11-GW (1-6)	25	109	150	88
240-171393-2 MS	SB11-GW (1-6)	18	101	148	90
240-171393-2 MSD	SB11-GW (1-6)	18	110	153	94
240-171393-3	FB1	68	121	118	124
240-171393-4	FB2	73	116	109	110
240-171393-4 - RE	FB2	65	111	104	83
240-171393-6 - RE	GW Dup	44	105	165	90
240-171393-6	GW Dup	18	122	191 *5+	65
240-171393-7	Trip Blank	82	125	121	112
LCS 410-286858/2-A	Lab Control Sample	69	137	122	154
LCS 410-287250/3-A	Lab Control Sample	80	88	88	84
LCS 410-287250/3-A	Lab Control Sample	81	98	93	80
LCS 410-287376/2-A	Lab Control Sample	94	109	99	131
LCS 410-289566/2-A	Lab Control Sample	113	134	127	109
LCS 410-289697/2-A	Lab Control Sample	58	106	103	95
LCSD 410-286858/3-A	Lab Control Sample Dup	47	92	88	100
LCSD 410-289697/3-A	Lab Control Sample Dup	72	125	124	96
MB 410-286858/1-A	Method Blank	51	104	92	121
MB 410-287250/1-A	Method Blank	79	87	90	89
MB 410-287250/1-A	Method Blank	93	113	102	96
MB 410-287376/1-A	Method Blank	89	95	91	91
MB 410-289566/1-A	Method Blank	73	121	122	98
MB 410-289697/1-A	Method Blank	53	106	100	89

Surrogate Legend

M242FTS = M2-4:2 FTS
M282FTS = M2-8:2 FTS
M262FTS = M2-6:2 FTS
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
HFPODA = 13C3 HFPO-DA

APPENDIX D
DUE CARE OBLIGATION

Due Care Obligations

For Owners or Operators of Contaminated Property

INTRODUCTION

This guide to Due Care describes the obligations of an owner or operator of contaminated property, which are designed so that contaminated property can be safely used.

Section 20107a of Part 201, Environmental Remediation, and Section 21304c, Leaking Underground Storage Tanks, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), requires that owners and operators take measures to ensure that existing contamination on a property does not cause unacceptable risks and is not exacerbated. Such measures include evaluating the contamination and undertaking the necessary actions to address the unacceptable risks. Due care obligations are not related to the owner or operator's liability for the contaminants; they apply to both non-liable parties and liable parties.

NOTE

This document is provided by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for informational purposes. A thorough review of Part 201 and Part 213 Statutes, Part 10 Administrative Rules, and guidelines should be completed before making site-specific decisions. These documents are available at Michigan.gov/EGLEDueCare.

DUE CARE REQUIREMENTS – SECTIONS 20107a & 21304c

An owner or operator of contaminated property shall do all of the following with respect to contamination at the property.

- Prevent exacerbation of existing contamination.
- Prevent unacceptable human exposure and mitigate fire and explosion hazards to allow for the intended use of the facility in a manner that is protective of the public health and safety.
- Take reasonable precautions against reasonably foreseeable acts or omissions of a third party.
- Provide notification to EGLE and others.
- Provide reasonable cooperation, assistance, and access to the persons that are authorized to conduct response activities at the property.
- Comply with any land use or resource use restrictions established or relied on in connection with the response activities.
- Not impede the effectiveness or integrity of any land use or resource use restriction.

Sections 20101 and 21303 of the NREPA define a facility or a site as property with contamination in soil or groundwater at concentrations above Michigan's cleanup criteria for residential property.

An owner's or operator's "due care" obligations summarized in this document are specified in Part 201, Section 20107a and its Administrative Rules 1001-1021 and in Part 213, Section 21304c. Find more information at Michigan.gov/EGLEDueCare, including:

- Part 201 of NREPA
- Part 201 Administrative Rules (Part 10)
- Part 201 Residential Cleanup Criteria
- Part 213 of NREPA
- EGLE RRD Guidance Documents
- Due Care Brochure, Matrix, and Forms

PREVENT EXACERBATION

Exacerbation occurs when an activity undertaken by the person who owns or operates the property causes the existing contamination to migrate beyond the property boundaries. Examples of exacerbation can include:

- Mishandling excavated contaminated soil such that contamination now migrates off-site
- Pumping contaminated water from footing drains into a nearby ditch
- Creating a new migration pathway by putting a utility line through a zone of highly contaminated groundwater or soil.

An owner or operator can also exacerbate contamination by changing the facility conditions in a manner that would increase the response activity or corrective action costs for the liable party. An example

might be to place a building over the source of the existing contamination. A person that causes exacerbation would be liable for remediation of the contamination they caused or paying the increase in the response activity or corrective action costs.

PREVENT UNACCEPTABLE HUMAN RISK

Owners and operators must evaluate the existing contamination to determine if the people using or working at the property would be exposed to contamination at levels above the appropriate generic or site-specific criteria. Upon the identification of unacceptable risks, the owner and operators must then undertake the actions that are necessary to prevent unacceptable exposures to contamination in order to demonstrate compliance with their due care obligations. Criteria for differing land uses can be found in the Part 201 Administrative Rules (Rules 1-50).

For example, if groundwater used for drinking is contaminated above the drinking water criteria then the owner and operator must prevent the use of the contaminated drinking water. If soils are contaminated above the direct contact criteria for the appropriate land use at the surface of the property, then people must be prevented from coming into contact with those soils by restricting access, installing a barrier to prevent exposure, or removing contaminated soil. Exposure barriers can be clean soil, concrete, paving, etc. In some instances, remediation of the contamination may be the most cost effective response.

In addition, if there is a potential unacceptable risk for utility workers or people conducting activities in an easement on the property, then utility and/or easement holders must be notified in writing of the conditions by the owner and operator. If there is a fire and explosion hazard, the local fire department must be notified, and the situation must be mitigated.

TAKE REASONABLE PRECAUTIONS

Taking reasonable precautions against the reasonably foreseeable actions and omissions of a third party means trying to prevent things that could cause a third party to be exposed to an unacceptable risk. This might include:

- notifying contractors of contamination so they can take proper precautions
- preventing trespass that would result in an unacceptable exposure (neighborhood kids playing in a vacant industrial yard that has direct contact hazards)
- taking actions to secure abandoned containers so they don't get damaged by traffic, etc.

PROVIDE REASONABLE COOPERATION, ASSISTANCE, AND ACCESS

Owners and operators must allow a person authorized to take response activities or corrective actions on the property (such as the liable person, or the state) to take such actions as: installing monitor wells, operating a remediation system, and maintaining the integrity of an exposure barrier, etc. However, the statute specifically states that this shall not be interpreted as providing any right of access not expressly authorized by law. The authorized person must still go through the normal process of acquiring voluntary or court ordered access, including the potential for compensation as the parties and/or court deem reasonable.

COMPLY WITH AND NOT IMPEDE THE EFFECTIVENESS OF LAND USE AND RESOURCE USE RESTRICTIONS

If there are land use or resource use restrictions on the property, owners and operators must comply with those restrictions and not take actions that would impede their effectiveness. Examples of compliance might include:

- not installing a well when a restriction on using the groundwater for drinking water purposes
- not allowing a residential use on a property if there is a restriction limiting the property use to nonresidential
- not removing a barrier installed to prevent contact with contaminated soil
- not turning off an operating remediation system.

EVALUATING THE NEED FOR DUE CARE

The necessity for conducting response actions are determined by evaluating the current/intended property use and the existing contamination. Based on

that evaluation, the actions needed to prevent unacceptable exposures and comply with all due care obligations must be implemented. Environmental professionals often assist with this process (see the Environmental Professionals section).

DUE CARE DOCUMENTATION

Owners and operators must maintain documentation that an evaluation to identify unacceptable risks was conducted, necessary actions have been taken, and the actions are adequate. Certain response actions (e.g., exposure barriers, mitigation system, etc.) will require continued maintenance, inspections, and repair that must also be documented.

Documentation requirements are described in the Part 201 Administrative Rule 1003. The documentation does not need to be submitted to EGLE but must be available for EGLE to review upon request within eight (8) months of becoming the owner or operator or of having knowledge that the property is contaminated. You may request an EGLE review and determination and submit Documentation of Due Care Compliance pursuant to Sections 20114g or 21323n.

NOTIFICATION

The Part 10 ("due care") Rules require notification to EGLE and others in the following circumstances:

- Notify EGLE if there are discarded or abandoned containers that contain hazardous substances on the property; see Form EQP 4476.
- Notify EGLE and adjacent property owners if contaminants are migrating off the property; see Form EQP 4482.
- Notify the local fire department if there is a fire or explosion hazard.
- Notify utility and easement holders if contaminants could cause unacceptable exposures and/or fire and explosion hazards.

Notices must be made within 45 days of becoming the owner or operator, or of having knowledge of the conditions. Forms are available at EGLE District Offices and online at Michigan.gov/EGLEDueCare.

EXEMPTIONS/LIMITATIONS

Parts 201 and 213 provide exemptions to the "due care" obligations to prevent exacerbation, prevent or mitigate unacceptable exposures, and take reasonable precautions for the following entities:

- An owner or operator of property where the contamination is migrating onto the property.
- An owner or operator of a utility franchise on the property.
- An owner or operator of the severed mineral rights to the property.
- A local unit of government (LUG) that: involuntarily acquires title or control of property by virtue of its governmental functions, or the property is transferred to the LUG from the state or a LUG that is not liable under Part 201 or 213, or by seizure, receivership or forfeiture or court order, or voluntarily acquired the property and conducted a baseline environmental assessment (BEA).
- A LUG that has an easement interest or holds a utility franchise for a transportation or utility corridor or public right of way, or for conveying or providing goods and services.
- A LUG that is not liable and is leasing the property to a non-liable party.

However, if the state or LUG exempted above offers access to the property and makes it available for public use, such as for parks, schools, municipal office buildings, public works operations, etc., then the person, state, or LUG must comply with all due care obligations for that portion of the property that is accessible to the public.

Additionally, the person, state, or LUG that is exempted above still has due care obligations to provide cooperation, assistance, and access, comply with land use or resource use restrictions, and not impede the integrity or effectiveness of the land or resource use restriction. Further, Sections 20107a(6) and 21304c(6) specify utilities and severed mineral right owners must comply with due care in regard to their own activities.

While Parts 201 and 213 provide these exemptions, it may be in the owner's and operator's best interest to ensure the property is safe for the intended use and that they do not cause a new release by their actions or exacerbate pre-existing conditions.

ENVIRONMENTAL PROFESSIONALS

Resources for finding an environmental professional, consultant or engineer include online searches for Environmental, Ecological, or Engineering consulting firms; referrals from financial institutions, real estate agencies, or trade associations, etc. It is wise to ask the professional or consultant for references and inquire as to past due care compliance documentation reports they have successfully completed. EGLE does not provide recommendations for environmental professionals, consultants or engineers.

EGLE RESOURCES

Environmental Assistance Center:
800-662-9278 | EGLE-Assist@Michgian.gov

Remediation and Redevelopment Division:
Michigan.gov/EGLERRD

Due Care
Jeanne Schlaufman
586-753-3823 | SchlaufmanJ1@Michigan.gov

Office of Oil, Gas and Minerals Division
Michigan.gov/EGLEOilGasMinerals

Part 615 (Supervisor of Wells – oil/gas wells)
Part 625 (Mineral Wells)
Keith Kidder
517-243-5695 | KidderK1@Michigan.gov

Passionate People Building
and Revitalizing our World

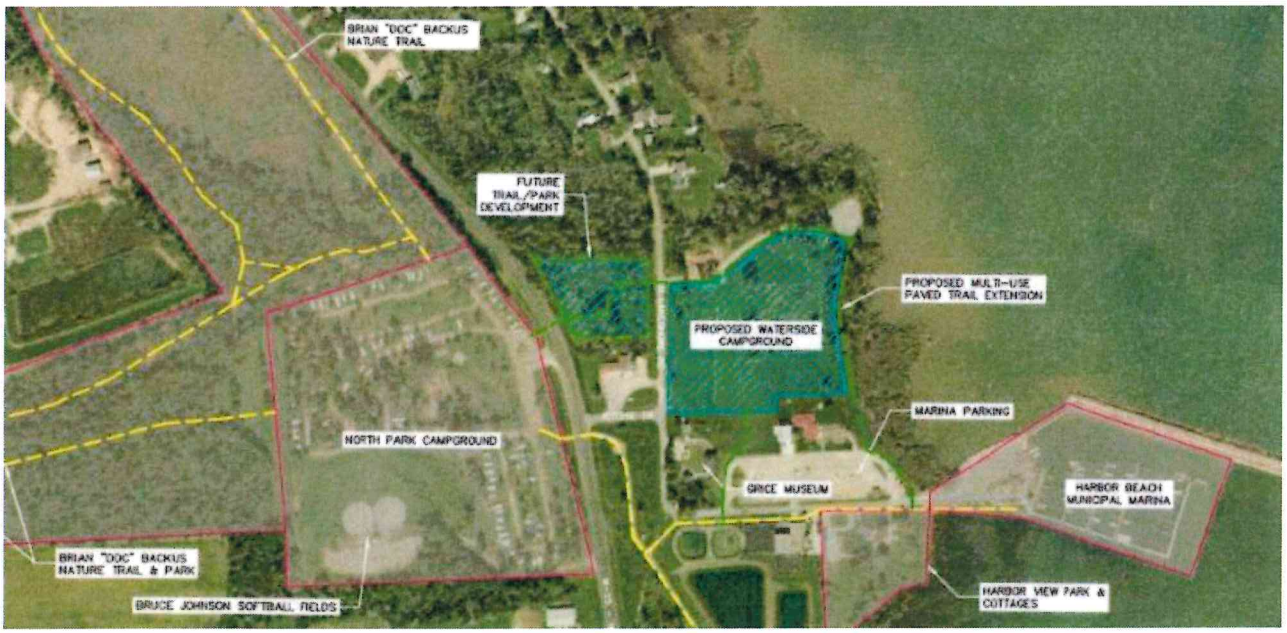
SME

City of Harbor Beach
766 State Street
Harbor Beach, MI 48441
989.479.3363
Ron Wruble, City Manager
rwruble@harborbeach.com

CITY OF HARBOR BEACH: NORTH PARK CAMPGROUND EXPANSION

The City of Harbor Beach currently owns and operates their North Park Campground and Harbor Beach Municipal Marina. The North Park Campground and Marina facility is located near the northern City Limits on the shoreline of Lake Huron. The North Park Campground has 184 sites and Harbor Beach Municipal Marina has 84 slips, six launch ramps, fuel dock, and fish cleaning station. The city also owns and operates four cottages along the waterfront adjacent to the marina. The campground, marina, and cottages are extremely popular destinations for visitors to the Harbor Beach area. The campground is booked far in advance with a lengthy waiting list for those campers wishing to camp at North Park Campground.

The City would like to expand North Park Campground by adding 87 sites to this park, however, the City lacks sufficient funds for the expansion. The expansion will generate additional revenue that will be used to support development and maintenance of City parks. The benefit to the region will be improved opportunities at the City's parks, better maintained City parks, more opportunity to use City parks, and these improvements will be subsidized by the revenue generated from the campground rather than allocating funds from City Residents.



The North Park Campground is also a significant component of the local economy. The current campground supports direct jobs for the operation of the campground, and indirect jobs at local businesses that maintain staff to service the increased population of the City when the campground is in full operation. The City recently engaged with Michigan State University to assess the economic impact of the North Park Campground. The study found that the campground supports approximately $1.5M per year in regional transactions, 16 regional jobs through both direct and secondary effects that command about $461,000 in annual earnings, and about $773,604 in total regional income. The study found that the proposed campground expansion would improve these numbers by supporting an additional $1.05 M in regional transactions, additional 11 jobs with additional earnings of $323,056, and an increase in total regional incomes of $542,073.

Estimated Cost for the North Park Campground Expansion: *$3,000,000*

NORTH

0 100 200

SCALE IN FEET

CITY OF HARBOR BEACH
HURON COUNTY, MI
WATERSIDE DEVELOPMENT

SITE PLAN

F&V PROJECT NO. PRIVATE

F&V

An Economic Contribution Assessment North Park Campground:

A Local Expenditure Assessment

Sarah Klammer

Steven Miller

MSU Center for Economic Analysis

February 2025

Abstract: The North Park Campground attracts visitors who boost the local economy through spending at the campground, restaurants, and shops. A study by the Center for Economic Analysis used the IMPLAN model to assess its economic impact and the effects of a proposed 84-site expansion. Currently, the campground supports 16 jobs and generates $1.5 million in sales, while the expansion would add 11 jobs and $1.05 million in sales. Most revenue funds city park maintenance and recreational infrastructure, benefiting both residents and visitors.

Supported by: Michigan State University AgBioResearch | MICHIGAN STATE UNIVERSITY Extension | Department of Agricultural, Food and Resource Economics

Introduction

The City of Harbor Beach, MI requested Michigan State University Extension to provide an economic assessment of the existing North Park Campground and how expanding this campground will impact the local economy. Key to the economic contribution of this campground is the dollars that camp visitors bring to the local economy. Those dollars are spent at local businesses, including restaurants and retail outlets, like grocery stores and gas stations. As visitors from outside the community travel and bring these dollars from outside the community, they introduce new dollars and transactions in the local economy that likely would not exist in the absence of the campground. There are some caveats. For instance, there are two competing campgrounds (Stafford County Park and Wagener County Park) within seven miles of NPC. If the NPC did not exist, current users of the campground may visit these two campgrounds, which are close enough to Harbor Beach that users may commute in to spend at local establishments. However, the expected level of expenditures captured by Harbor Beach would be much lower than if the visitors used a campground inside the city.

The NPC is a 40-acre facility within the city limits of Harbor Beach with 184 campsites, including both modern (with utilities) and rustic sites. The site also houses an enclosed pavilion, nature trails, access to cable and Wi-Fi, along with other expected campground amenities. Harbor Beach and the surrounding area provide ample recreational opportunities. The paved Harbor View Trail, and the rustic Backus Nature Trail begins at North Park Campground (NPC). The Harbor Beach Fishing Pier is a 1,015-foot jaunt from the sandy beaches of the Judge James H. Lincoln Memorial Park, while the Harbor Beach Marina sits across the street from the campground. The city hosts three museums, including the Harbor Beach Lighthouse which sits atop the break wall that creates the world's freshwater man-made harbor. Access to Lake Huron provides excellent fishing opportunities and the city is the starting point of the 103-mile Thumb Heritage Water Trail. Other recreational and shopping amenities exist.

It is for these reasons and others that the NPC has a wait list of those who seek to purchase seasonal passes to the camp ground. This persistent wait list gives confidence that expanding the NPC is not only feasible, but also desirable from a user perspective. Therefore, the City of Harbor Beach proposes expanding the existing facility by adding an additional 84 seasonal rental sites to the existing park. This report documents how the MSU Center for Economic Analysis undertook an economic analysis of the current camp configuration, including the effect of camp users' expenditures inside the community and how we anticipate those economic effects to change with the planned expansion.

Methods

In this analysis, two measures of economic effects are presented. The first is an assessment of the economic contribution of the North Park Campground, using actual campground operating expenditures and estimates of the expenditures of campground patrons during their visit. The estimates generated in this phase are necessary in estimating the second measure of economic effects, which are the expected increase in economic effects of the planned expansion. For this, the direct changes in economic activity in the first measure are extrapolated over the planned increase by 84 seasonal rental sites. The IMPLAN model for Huron County is used in estimating

the economic effects. Because the economic region is the county, the economic effects modeled here reflect changes that can be realized throughout the county. However, since the direct expenditures modeled take place in and around Harbor Beach, we should expect that most of the estimated effects to be realized in and around the Harbor Beach area.

Expenditure Profiles

In order to estimate expenditures made in the local community by those staying overnight at the North Park Campground (NPC), we used average outdoor recreation expenditure profiles generated by the United States Forest Service[1] (USFS) in conjunction with revenue and expenditure data from the City of Harbor Beach (City). The USFS data is based on surveys of those who visit national forests and includes spending data for a variety of trip types and includes estimates of all expenditures made in the local area (a 50-mile radius). For the purposes of this study, we utilized estimates for nonlocal visitors (those who traveled greater than 60 miles) who stayed overnight. The USFS provides expenditure profiles for those who stay for the day, those who stay overnight in the park as well as those who stay nearby outside of the park. Given that the amenities near the NPC are less rustic than those often available in a national forest camp setting, we opted to use the higher off-forest estimates. In Table 1, we altered expenditure profiles to represent expenditures per visitor party night by dividing the USFS expenditures by party days.

Expenditure Profile (per night, excluding camp fees)	
Camping	$21.00
Misc Camping Expenditures	$2.90
Restaurant	$25.31
Groceries	$15.77
Gas and Oil	$17.93
Other Transportation	$1.08
Entry Fees	$2.79
Recreation and Entertainment	$7.24
Sporting Goods	$2.99
Souvenirs and Other Expenses	$5.62
Total	$126.02

Table 1. Average Daily Expenditures for a Non-local Overnight Visitor

[1] White, E. M. (2017). Spending patterns of outdoor recreation visitors to national forests.

While the USFS data provides a valuable baseline for camp-party expenditures, some additions are necessary to better fit it to the context of the NPC. For instance, the presence of long-term seasonal campers as well as transient campers requires two different visit length estimates. The proximity of the Harbor Beach Marina further adds an additional source of effect that is tied at least in part to the campground. We adjusted the adopted expenditure profile to account for these data.

The City provided revenue and expenditure data for the NPC for 2024. Using this data and the camp fee schedule, group night counts were estimated for both seasonal and transient camping. At full capacity, the 90 seasonal sites account for 11,829 group nights if we assume that the average camp-party stays on site an average of 5 nights a week during the six-month season. Transient camping, assuming an average fee of $38/night,[2] accounts for about 4,079 group nights. In total, the NPC hosts approximately 15,900 party nights per season, based on the 2024 camping season, with an average camp fee across the two groups of $21/night. Using the same approach, the expansion will account for an additional 11,040 group nights. The expenditure profile used for an average group night is shown in Table 1.

According to Harbor Beach Marina, an average of 3 slips are reserved by seasonal campers currently, for total additional revenues of $4,660 annually. Should the expansion go forward, the City estimates that there will be as many as 10 seasonal slips reserved, for an additional $10,920 in revenue. These expenditures exclude marina expenditures by transient campers. We include these additional revenues in our economic contribution estimates, though they are excluded from the expenditure profile above since they do not apply to the average camper.

Economic Modeling

An IMPLAN economic simulation model was developed specifically for Huron County, Michigan. Widely recognized in both academic and applied settings, the IMPLAN model is based on an economic analysis method first introduced in the 1940s and refined over the past 80 years. This model is developed around a system of double entry social accounting, where the expenditures of one party are also counted as revenues for another. The economy is broken out into more than 500 industries, eleven households, three levels of government, each connected by the transactions they share over the course of a year. The transactions between industries are business-to-business transactions. Alternatively, households receive labor income and profits, and purchase goods and services from businesses, while governments purchase from tax revenues.

As new dollars enter the economy, a portion of them will be spent in the local economy. The rest is used to purchase goods and services provided from outside the local economy. The dollars that are re-spent in the local economy will be revenue to another party and in turn, re-spent again. This cycle of secondary transactions will continue indefinitely, hindered only by the extent to which purchases are made for goods and services provided from outside the local economy.

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[2] The schedule of fees ranged from $28 to $50 per night. Retrieved from the Campground Fees link using https://www.harborbeach.com/north-park-campground on Jan. 30, 2025.

The cycle of new dollars generating a persistent cycle of secondary spending is called the multiplier effect and is well documented in economics literature.

The multiplier effect is comprised of two parts. The first part is the direct effects. Direct effects include the jobs, income and sales generated by campground operations and expenditures made by campers. The second part is called secondary effects, and it is made up of a combination of business-to-business transactions, called indirect effects, and household-to-business transactions, called induced effects. These effects are additive, such that the sum of direct and secondary effects make up the total expected contribution of existing campground activities and estimated group expenditures resulting from the expansion.

One attribute of economic contribution models like IMPLAN is that the direct and secondary effects are mutually exclusive measures of economic contribution. Therefore, they can be summed together to generate the expected overall economic contribution. Another attribute of the model is that economic effects are measured equally in terms of transaction, number of jobs and income.

Findings

The Economic Contribution of North Park Campground Visitor Expenditures: Pre-Expansion

Current 2024 financial data from the City indicates that the North Park Campground generates 15,908 group nights before the planned expansion. Modeling the direct expenditures in Table 1 over all 15,908 group nights, and adding in total annual campground expenditures,[3] we estimate that current visitor expenditures support just under $1.5 million in regional transactions (Table 2). This level of economic activity supports approximately 16 regional jobs through both direct and secondary effects that command about $461,000 in annual labor earnings and about $773,604 in total regional incomes.

Effects	Employment	Labor Income	Regional Income	Output
Direct	13	$327,579	$548,238	$1,054,682
Secondary	3	$133,419	$225,366	$442,653
Total	**16**	**$460,998**	**$773,604**	**$1,497,335**

Table 2: The Economic Contribution of North Park Campground Visitor Expenditures

[3] This will exclude the double counting of camp visitor expenditures at the campground to avoid double counting.

The Economic Contribution of North Park Campground Visitor Expenditures: Post-Expansion

Should the NPC expansion continue as planned, we forecast an additional 15,908 group nights will be added to the campsite. These visitors will likely contribute an additional $267,048 in NPC revenues. Taking into account camp patron expenditures in town and campground operating expenditures, we estimate that visitor expenditures will likely generate an additional $1.05 million in regional transactions (Table 3). These transactions will generate an estimated increase in regional employment of 11 jobs, once accounting for direct and secondary effects. Such jobs are likely to command total additional wages of $323,056 and total regional incomes of $542,073. Should the expansion take place, these effects are expected to add to the current effects shown in Table 2.

Effects	Employment	Labor Income	Regional Income	Output
Direct	9	$229,787	$384,460	$737,938
Secondary	2	$93,269	$157,613	$309,646
Total	**11**	**$323,056**	**$542,073**	**$1,047,584**

Table 3: The Economic Contribution of Additional North Park Campground Visitor Expenditures Following the Proposed Expansion

Summary

The North Park Campground provides many valuable recreation opportunities for visitors to the Harbor Beach area. These visitors in turn contribute to the local economy through their expenditures at the campground as well as at local restaurants and retail establishments. In this report, the Michigan State University Extension Center for Economic Analysis endeavored to quantify the current impact on the local economy of this activity and additional activity generated by a proposed 84-site expansion to this popular campground.

Using the IMPLAN economic simulation model, this study evaluates the direct effects (jobs, income, and sales generated by visitor group expenditures) and secondary effects (indirect and induced economic activity generated by these expenditures).

Key findings include:

- **Direct Contributions**: The existing campground directly supports 13 jobs, contributing $327,579 million in annual labor income and generating $1.05 million in yearly sales. The proposed 84-site expansion would add an additional 9 jobs, $229,787 in labor income, and $737,938 in sales on top of this.
- **Total Contributions**: Including secondary effects, the current campground supports 16 jobs, $460,998 in labor income, $773,604 in total regional income, and $1,497,335 in

output/sales. The proposed 84-site expansion would add an additional 11 jobs, $323,056 in labor income, $542,073 in total regional income, and $1,047,584 in sales on top of this.

This analysis highlights the economic value of the North Park Campground and the proposed expansion to the local area. Talks with the City indicate that the vast majority of existing funds generated go towards maintenance and management of the City's parks and recreational infrastructure, all of which is used by local residents as well as visitors to the area. The amenity value of these resources are not captured in these estimates. Rather this assessment limits consideration to the value of transactions and jobs supported by the campground.